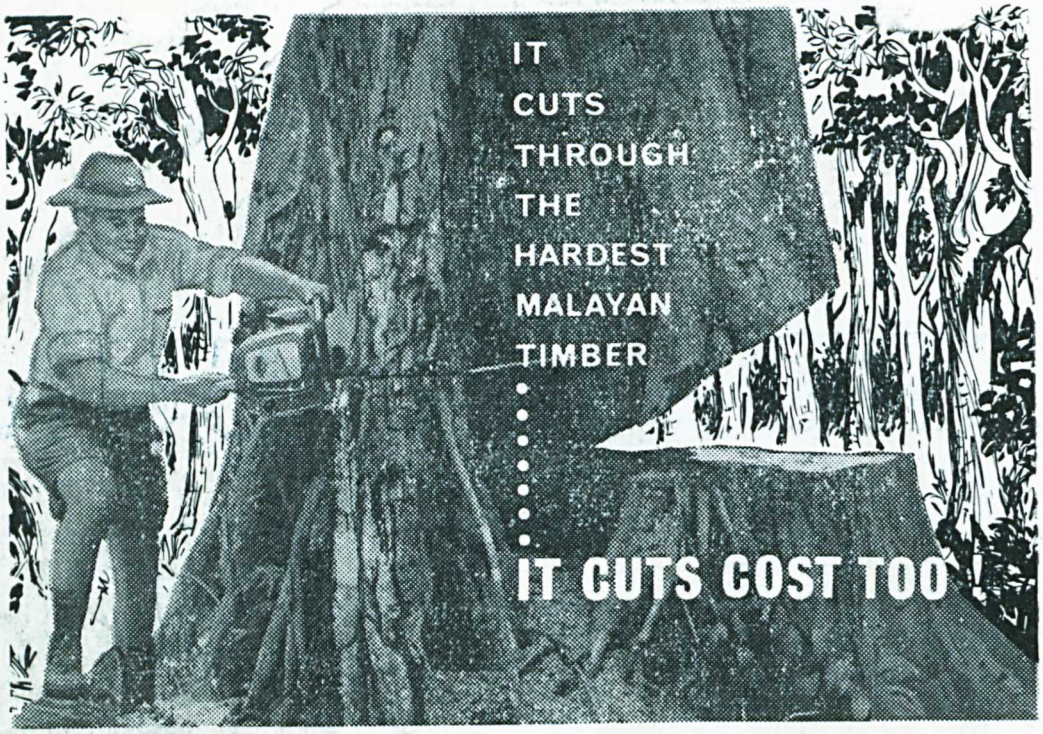
THE SERDANG SUN

ANNUAL MAGAZINE
OF THE
COLLEGE OF AGRICULTURE
STUDENTS' UNION

1962/63



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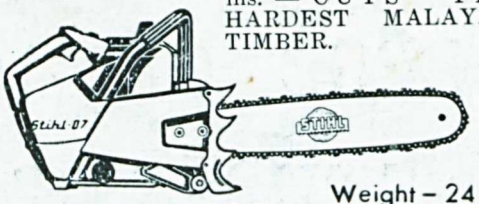

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THE SERDANG SUN

ANNUAL CONTEST
OF THE
COLLEGE OF AGRICULTURE STUDENTS' UNION
SERDANG, SELANGOR.

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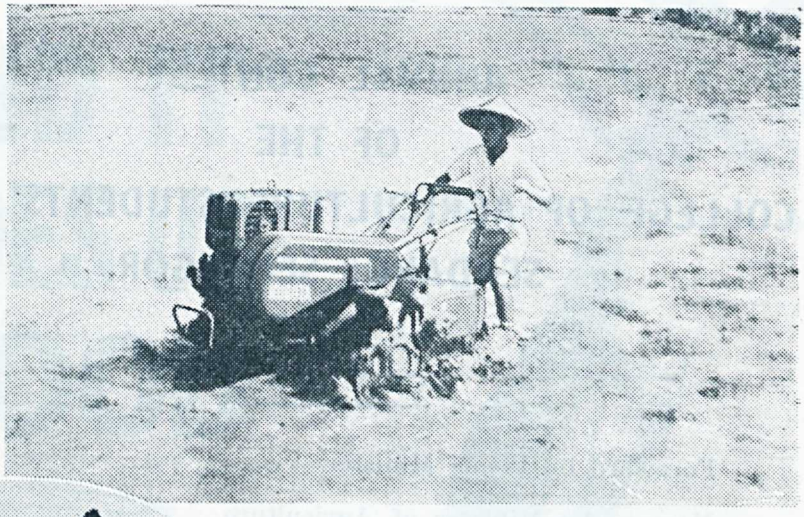
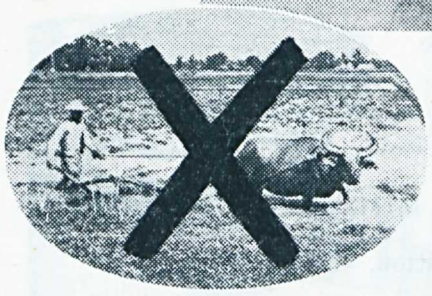
plough one acre of wet padi in 6 hours





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FOREWORD

A College magazine such as the "Serdang Sun" involves a great deal of work and effort, so I take great pleasure in commending the College of Agriculture Students' Union for producing a lively and comprehensive record of the year's activities.

I am sure all Old Boys who read your magazine will be only too pleased to realise that the traditions they helped to establish are being continued by the present students with enthusiasm and in the true spirit of dedication.

Parents too will appreciate the all-round picture such a magazine can give of the life and interest of the College and students in both work and play.

I am glad to know, therefore, that the students of Serdang realise that a College is not simply a place to "swot" for exams but a community in itself, a community whose happiness and success depend on the co-operation of all. What you give with goodwill and good heart to Serdang today will produce many happy memories in future years.

In this spirit and with this hope I wish all members of the Staff and the students of Serdang every success.

(TUNKU ABDUL RAHMAN PUTRA)
PRIME MINISTER.

Kuala Lumpur,
28th March, 1963.

MESSAGE

It is with pleasure that I take this first oppurtunity of ushering the eleventh issue of the "Serdang Sun". The fact that the Magazine is able to appear annualy for the last eleven years has been largely due to the efforts of the successive organising committees which have set out always to do better every year. To all concerned, I extend my hearty congratulations.

I am confident that the "Serdang Sun" will always light the way not only for the present but also for the past students of the College. I also feel that the "Serdang Sun" should be the connecting link of the past students with the successive generations of the members of their Alma Mater and in their position as seniors, past members should be able to contribute immeasurably to the future graduands through the "Serdang Sun", by way of experience, trials and tribulations in the agricultural profession. To the past students too, if I may say, falls the lot not only of focussing public attention on the College but also of contributing materially towards the Alma Mater. Perhaps the past members may wish to consider launching an Alma Mater Fund which should stand as material and moral evidence of loyalty and gratitude of all those who have passed through the College of Agriculture, Serdang.

To the present and past students, I wish every success. May the "Serdang Sun" rise every year to shed its light towards progress for our young nation.

(MOHAMED KHIR JOHARI)
Minister of Agriculture and
Co-operatives.

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Once again the Serdang Sun has 'risen' — to bring news, views, reviews and activities of the college of Agriculture Malaya for the past academic year, to the general public, agriculturalists and Serdangites. But this 11th issue of the Serdang Sun bears special significance in that it witnesses tremendous changes and improvements that are opening a new chapter in the history of the College.

Progress on the Compus

The changes and improvements which the College is presently undergoing are indeed tremendous when compared to those made since its inception more than thirty years ago. A three-storey new hostel with all facilities for better student accommodation is now nearing completion. Other improved facilities, though not so 'comfortable' are the revision of syllabii and the generally stricter examination regulations. The recruitment of more and better-qualified staff; the introduction of new subjects such as Agricultural Economics and Agricultural Engineering; and the expansion of the College Farm are also being made. The new College Farm will cover 318 acres of land. Further plans such as the cattle, goat and poultry schemes are being envisaged for future materialization.

Such progressive measures, absent from the College for the past decade are only being made possible by the present Council, College of Agriculture which took office only a year ago. Credit should go to their untiring efforts to make the only Agricultural College in Malaya worthy of its name. Expansion is necessary if the College is to meet the ever increasing demand for agricultural technologists. Progress, especially in the present world of Telstars, Vostoks and technical advancement, is also necessary if the College is to be-

come a living institute of agricultural learning. Moreover, in view of the government's aim to develop the rural areas and the awakening of the realisation of the importance of agriculture in Malaysia it is only reasonable to expect some advancement at the College.

Furthermore, additions and alterations will be made to the existing College building. The old kitchen, library and Voelcker domitory will be demolished and a three-storey building erected instead. This new building will have laboratories for Soil Science, Animal Science, Plant Science, Chemistry, Physics and Plant Protection. Similarly, the other existing domitories will be converted into up-to-date lecture theatres, a museum, a library and an Agricultural Engineering room.

Field Training

The many changes and improvements at the campus also include the itnroduction of an oral examination for field training.

The oral examination was introduced due to the realisation of the importance of field work in any agricultural training. Nobody disputes the paramount importance of field training. But whether the 15-minute oral examination really serves the purpose of testing a student's knowledge and experience in field training has yet to be convinced. There are no fixed syllabii or standards and questions can be from a wide range of subject. It is the students's wish that a set standard questions be asked in future oral examinations.

In the emphasis in field training the College authorities have unfortunately not made any provisions for part-time lecturers. These part-time lecturers could be chosen from experts actively engaged in the field. With their vast experience they would ensure the proper and up-to-date teaching of practical techniques and they would also form invaluable part of the College staff. It is hoped that some part-time lecturers be forthcoming in the future.

"All human happiness is senseous happiness,
The partition separating flesh from spirit
is extremely thin, and the finest emotions
and greatest appreciations of spiritual
beauty cannot be reached except with our senses."

"Anyone who stops learning is old,
Whether this happens at 20 or at 80.
Anyone who keeps on learning not only
remains young but becomes constantly more
valuable, regardless of physical capacity."

—(Henry Ford)—

THE NEED FOR FODDERS AND PASTURES IN MALAYA

By Mr. Chin Hoong Fong,
Lecturer, College of Agriculture,
Malaya.

Blades of grass and leaflets of legumes have made nations like Australia and New Zealand prosperous, healthy and beautiful. An American once said: "Green pastures have become the symbol of serenity, of stability, of peace and of plenty." The people in the tropics look with envious eyes at the advancement made in scientific grassland farming in such country as New Zealand. Grass husbandry is virtually unknown in this country. Can we follow suit? According to some experts tropical grassland is still a myth.

Malayan agriculture would benefit if the number of livestock could be increased and a system of mixed agriculture adopted for smallholdings. The post war policy of the Ministry of Agriculture has been the diversification of agriculture in Malaya, which involves amongst other things increasing the livestock population of the country. The population in 1955 was 450,000 head of cattle and 42% were found in the northern states of Kelantan and Trengganu (3). The 1961 census of the animal population estimates that there are at present 305,822 oxen and 275,528 buffaloes in the Federation, indicating a steady increase over the past six years. Increase in the cattle population have emphasised the lack of surplus natural feed necessary for utilisation. It will follow therefore that grass husbandry should develop as a result of rising demands from an increasing cattle populaion. Grass is the cheapest food for demands by an increased livestock population. With land being a costly investment in Malaya the emphasis is on the need for more intensive production of fodder grasses which normally give higher yieds per acre than pasture grasses.

To-day the greater half of the world's catlle population of 900 million is raised in the tropics, 18% in India, 14% America, and 11% in Africa (6). In these areas the people suffer from malnutrition which could be remedied by greater use of animal products. In 1960 the Food Agriculture Organization launched its five year Freedom from Hunger Campaign. The potential resources for increased food production are great but will not be realized unless continuous and rigorous action is taken by local people, taking advantage of visits by teams of experts. Animal breeding must go hand in hand with advances in fodder and pasture production in order that animal products can be produced efficiently and cheaply.

In this epoch of Malayan history, the national policy is focussed on Rural Development with diversification of Agriculture as the basis. In the past our eyes only

rested on Rubber as the major natural income earner that we neglected even our food. To-day with the keen competition from synthetics we have to turn to other products; without being dependent on rubber alone. In turning to animal production therefore grass and the animal becomes inseparable. Armed with some fundamental know-how and with the stimulating force of the "Fredom from Hunger Campaign," it is extremely likely that we can contribute towards better grassland production. To my mind, I do not envisage the splendour and magnificence of the green pastures and rolling hills of the temperate zones but merely an improvement qualitatively and quantitatively in our fodders and meagre pastures.

ADVANTAGES

Although the claim is that tropical grassland is still a myth, we must not fail to realise the benefits derived from pastures in temperate regions. These benefits in parts must apply to the tropics but to what extent is questionable.

(a) Soil fertility and structure.

The process of nitrogen fixation by Rhizobium in root nodules of legumes is well recognized. The leguminous covers in our estates have undoubtedly improved the growth of rubber with their nitrogen supply. In the same way pasture grass species will benefit from their association with legumes. Excellent grass pastures of Cyndon plectostachyus with Centrosema pubescens have been maintained for ten years at the University College Farm Ibadan (6). The annual contribution of fixed nitrogen to the sward by Centrosema is of the same order as that observed in the temperate regions of 258 lbs. Nitrogen/acre or equivalent of 12½ cwt. of sulphate of ammonia (8). In Malaya, the evidence is that Centrosema pubescens can fix appreciable quantities of nitrogen equivalent to 210 lbs. of nitrogen/acre per year (15).

Land under leguminous pastures will be enriched and at the same time, the soil structure also improve as more organic matter is incorporated into the soil. The fallacy of burning vegetative waste should be made known to the farmers. The important point to note is that all vegetative and animal waste remains can be converted to valuable compost for use in the farm.

(b) Nutritive values.

Most of the animals in Malaya are underfed, owing to the poor quality of their food which consists mainly of weeds and rice stubble which are relatively poor in quality and low in feeding value.

The high nutrient value of temperate pastures incooperating legumes and grasses is well appreciated. Comparison of Chemical analysis data between temperate species and local ones shows:—

Temperate species (9)

(i) White clover (Trifolium repens) protein=5.1%

(ii) Italian rye grass (Lolium multiflorum) protein=3.9%

Tropical species (2)

(i) Guinea grass (Panicum maximum) protein=2.5% (cut at 5 weeks interval)

(ii) Guatemala grass (Trisacum laxum) protein=2.4%

(iii) Napier grass (Pennisetum purpureum) protein=1.9%

(iv) Stylosanthes gracilis=4.0%

(v) Centrosema pubescens=5.4%

Some of our legumes and grasses are nutritious and comparable to those of the temperate regions but their palatibility and grazing qualities have not been investigated yet. Stylosanthes gracilis has a nutritive value before flowering comparable with that of the best variety of lucerne. It is persistent and drought resistant. The crude protein content of Centrosema pubescens is high, averaging 17% of the dry matters(6). Leucaena glauca also has a high crude protein content of about 25% of the dry matter.

Careful selection of species and strains of grasses or legumes plus good management will elevate the nutritive value of our local animal feeds for animal and fish production.

(c) Soil conservation.

Bare land when left uncoveerd will result in erosion. To overcome this problem both leguminous and grass covers can be introduced, to bind the soil well. Sloping grounds when planted with Brachiaria brizantha or Brachiaria mutica have proved valuable in soil conservation. Besides conserving soil, carpet grass (Axonopus compresus) and Serangoon grass (Digitaria didactyla) make beautiful lawns and embankments for lakes and rivers.

(d) Crop rotation.

The concept of crop rotation was accepted ages ago throughout the world. 'Ley farming' a system involving crop rotation of cereals alternating with pastures has been widely practised in temperate countries. This system can possibly be adopted in our padi areas, if we diverge from the tendency towards monoculture of padi planting. Perhaps some of our padi fields can be rested, by introducing pasture species, thus providing feeds for animals. The resting of land maintains and may even improve soil fertility.

(e) Animal products.

Generally, Asians badly lack animal protein in their diet, whereas in New Zealand and Australia they have excess. It is from the blades of grass and leaflets of legumes, that are converted by the ruminants into milk and meat that people in the tropics hope they can likewise cater for other hungry nations. These nutritious animal products will ward off malnutrition amongst mankind.

PRESENT SITUATION

The standard of grass husbandry varies from wayside grazing to the production of fodders for stall feeding of cattle. The smallholders depend largely on the former, large commercial farms and Research Stations practise the latter.

(a) **Smallholders.**

Amongst smallholders grass husbandry is unknown. Cattle largely feed on poor quality wayside herbages consisting of weeds like lalang (Imperata cylindrica), Paslalum conjugatum and Mikania scandens. In the padi areas cattle graze mainly on weeds and rice stubble. A large population of cattle graze illegally on estates and coconut plantations. The sight of stray cattle and goats by the roadsides and estates annoys the motorists and estate managers generally, and the Municipality would like to see the beasts confined to fenced pasture areas where they can be cared for adequately.

(b) **Farms on commercial scale.**

Very few such farms exist, an outstanding example being the Singapore Cold Storage Dairy Farm, which runs a hord of 800 head of dairy cows. Each of them gets 40 lbs. of Napier grass together with a concentrate ration daily. An area of some 70 acres is planted with Napier grass sufficient to feed all the animals and the resulting milk production is satisfactory. Large scale dairy farms to be run on a co-operative basis is to be opened in Selangor by the end of 1963. Pastures and fodders will be established, the smallholders will manage their own cows and the sale of produce will be executed on a co-operative basis.

(c) **Fisheries.**

Fresh water fish culture gains popularity in Malaya today. Grass is cut for the fishes especially the grass carps which have a digestive capacity similar to that of cattle. At present smallholders cut wayside grasses for their fishes. Both Guinea and Napier grass are cultivated as feeds for the fishes at the Tropical Fish Culture Research Institute in Malacca. About 3-4 cwts. of grasses per day are consumed by fishes in an acre size pond. At present there is some shortage of suitable foods for fish in the Far East. Groundnut, soya bean, and copra cake are expensive. But rice bran and broken rice are still fairly cheap, but competed for by pig farmers. So the importance of grass as food for a fish culture based on the grass carp becomes relatively important.

(d) **Research.**

Pasture research has been negligible in this country. Travelling along the main trunk roads of Malaya, one is attracted at a distance to the impressive grassland. It reminds one of the rolling green hills in temperate pastoral regions, but a closer look reveals the green herbage is merely blades of lalang. Water buffaloes can thrive on lalang but not other types of cattle or livestock.

For many years research has been carried out with fodder grasses in the stall feeding of cattle, but since 1938 more attention was given to the possibility of improving local pastures. It was shown by observations that cattle can graze on Axonopus pasture species. The grass production is very low and of the order of 21 tons/ac./year. Axenopus pastures under shade trees (En-

terolobium saman) not only were higher yielders but the quality of the grass as judged by protein content was considerably higher (4).

In the field of fodders a number of manurial, cultural and variety trials have been investigated. Amongst all the fodder grasses, Guinea grass and Napier grass are popular, followed by Guatamala grass in terms of palatibility, but the reverse in terms of production. Napier grass is preferred by farmers because of the high yield of about 70 tons/ac./year and it is also freely eaten by cattle but not by goats, as compared to Guinea grass which produce abbout 30 tons/ac./year. At the Central Animal Husbandry Station at Kluang and the Animal Husbandry Station at Paroi in Seremban, records show yields of 60-80 tons per acre per annum, cut at 6 week interval and heavily manured with stable manure and liquid waste.

Results from work done at Serdang show that Guinea grass responds to nitrogen and potassium giving significant increase in yield of green matter. But addition of cattle manure and inorganic fertilisers is essential in maintaining high yields. The cutting interval of 6 weeks duration seems best for Guinea grass, a 3 weeks interval being too severe although the protein content is higher. No investigations have yet been carried out to ascertain the optimum interval of cutting for Napier or Guatemala grass, or the optimum height of cutting.

PROBLEMS

Research in fodders and pastures is scarce here, thus hindering progress in this field of Agriculture. Although the potentialities in grasses and legumes are high we lack support from facts and figures on the economy and techniques in grass husbandry. The numerous problems we face are:—

1) Availability and tenure of land.
2) Choice of strains and species.
3) The agronomic background fodder, and pasture establishment.
4) Economics of production.
5) Proper utilisation.

Due to the absence of the so-called natural grassland together with the major portion of cultivatable land occupied by rubber, rice and other crops, little is left for any large scale pasture. The continual fragmentation of agricultural land into small units is usually associated with conjested rural population. Certain social customs and inheritance laws, and also the unsatisfactory land tenure system, all discourage the small holders from improving their farms. Farmers are more willing to invest money on improvements only if the land is their own. It is obviously still harder to convince farmers of the value of improved grassland husbandry.

Pastures and fodders in this country are established from cuttings or vegetatively. As a result,

mechanization has not been practised. Also, harvesting involves human labour and all these contribute towards the high cost of production. The problem of unmechanised establishment of pastures arises from the failure of the grass species to set seeds, even though some of them flower.

The absence of certified seeds and proven planting material for farmers by a research centre hinders the improvement of our fodders and pastures. Smallholders still allow their cattle to graze wayside herbage illegally as long as there is no strict control over them. No doubt it is very hard to encourage them to reap the benefits of cultivated fodder grasses when wayside herbages is available to them for their taking.

Our pastures and fodders lack variety and quality though some species compare well even with temperate ones. The leguminous cover crops such as Centrosema pubescens, Stylosanthes graclis and Leucaena glauca are high in food value in so far as protein is concerned, but they have certain disadvantages, for example, the presence of an alkaloid mimesine in Leucaena glauca which has an adverse effect on animals.

POSSIBILITIES

With his constant persistent research Man hopes one day that the concept of tropical grassland will be understood and that grasslands can serve mankind as in the temperate regions of the world. In Malaya the little we can do if done well will elevate the standard of animal production so that everybody can get sufficient protein.

What we need badly for a start is a tropical pasture division like the Cunningham Laboratory in Brisbane which serves as a central tropical grassland research station, with adequate laboratory and glass house facilities, nurseries and multiplication areas for the quarantine and evaluation of introduced species.

The livestock industries of vast areas in the tropics are very ancient and have shown little development. The local system here is nomadic in the sense that the cattle just graze from place to place along waysides and illegally in rubber estates and coconut plantations. In these days of progress towards better systems of land use, it is hoped that those responsible for live-stock policy and live-stock owners will change and modernize their form of animal husbandry. A time should come when grazing on waysides is prohibited and live-stock owners be aided in fodder pasture establishment and management from a central Research Station.

More than ten years ago the International Rice Commission had shown keen interest in diversified cropping in rotation with rice, and expressed the need of basic research in this field. In 1962, delegates at the 8th session of I.R.C. reported various results obtained from crop rotation in their respective countries.

In Australia introduction of rice pasture rotation gave good results in yields of rice and pasture as

well as live weight gains of grazing cattle. In Italy rice is grown under 5 to 6 years rotation with grassland to meet higher demand for livestock production. In Philippines rice legumes rotation gives better results than double cropping of rice both in increasing yield of foodstuff and fertility status of soil. We may be able to do so likewise.

At present the Ministry of Agriculture has in hand a vast coconut replanting scheme. There is possibility of introducing cattle to graze in between the palms which may bring about increase in income per acre of land cultivated by small holders. Some results to date show that benefits can be derived by putting cattle to graze in coconut plantations not only to increase the yield of nuts but keep the plantation well maintained at a comparatively low cost. This is particularly so in areas which are well drained with a minimum of drains. Adequate fencing together with controlled grazing would be an asset in the management of the estates. Further, this will keep the weed and pest populations in the estates as a low level and as a result harvesting is much easier. Research along these lines should be launched in order that benefits of the integration of livestock with other tree crops besides coconuts can be realised.

With our existing species of fodders and pastures, careful studies should be carried out in the form of varietal, manurial and managerial trials. It has been shown with fertilizers and irrigation, that the yield of grasses can be increased by about 200%. The main fodders and pasture species such as Guinea grass and Axonopus compressus, are low yielding compared with Napier grass which is generally preferred by farmers. There is a possibility of increasing yield which is important in an intensive system. Several varieties of Napier grass are available, for which there are varying claims. The literature contains frequent contradictions concerning the management and value of Napier grass under different conditions, which we will have to investigate under our conditions.

Besides Guinea grass and Napier grass, we have Guatemala grass which is a very high yielder, producing 80190 tons per acre per year during the wet seasons falling to 30 tons per acre per year on dry season. (observation at the College of Agriculture, Malaya). Water therefore seems to be the limiting factor. With irrigation and fertilizers we can ensure high yielding fodder. Perhaps a more palatable variety can be bred in the future. It has been shown that platibility is related to chromosome number (12). Guatamala grass may prove to be of special use to smallholders because with their limited space they can produce high yielding nutritious fodder. Pennisetum squamulatum from India has proved to of high protein content (5-7% protein) (11). This can be introduced here and evaluated of their agronomical characteristics composition and production. An unconventional approach to legume fodders can be made on Leucaena glauca which is

drought resistant and high in protein. A useful feature is its capacity to stand repeated cutting. Stands are known to be growing in Indonesia after 40 years. In the same manner Sesbania grandiflora should be introduced to the small holders the foliage of which is relished by the goats and the floral parts by man as vegetables. As a fodder Sesbania grandiflora is palatable to livestock, with a high protein and mineral content. These legumes can be grown on a large scale and have ready markets. The fodders can be crushed in a hammer mill and the products used as a constituent of various livestock rations produced by commercial firms.

In the field of pastures we have lalang, Axonopus species and Brachiaria bbrizantha. Considerable potentialities arise as the basis of new mixed farming systems on such presently abandoned lands as those comprising the undulating lalang covered areas. Lalang grazing is practised in Kluang, the problem is that with over grazing lalang disappears. The low yielding young lalang herbage compares well with other grasses. During the mature stage the fibre content rises and nutirent value lowers. In ruminant nutritions studies, urea and molasses when sprayed on low protein herbage under drought condition prove to be beneficial to sheep and cattle in their daily weight gain. The ubiquitous lalang may be sprayed with urea, as a new approach to animal husbandry. This will be specially useful with water buffaloes for they trive on lalang.

The pastures in Malaya do not possess a mixed sward, but we are aware of the value of grass/legume pastures in the temperate regions. There is great possibilities of a mixed award of Brachiaria with centrosema or stylosanthes gracilis. Mixed pastures not only provide good feeds, but the cost of production of the animal is also reduced in that the animals harvest the grass/legume crop by grazing. 'Ley farming' a system of farming in-corporating the use of legumes in a mixed sward of grasses in crop rotation and in the temperate regions it is their backbone for success. Local records of facts and figures of mixed pastures are absent, but other places show that 10 years of grazing on Centrosema pubescens and Cynodon plectostachyus is feasible. Observations made at the College of Agriculture Malaya show the possibility of integrating Centrosema pubescens and Brachiaria brizantha in the sward. These mixed sward plots were cut at 6 week interval and a good regrowth of both the grass and legume has been achived. Tropical species showing good prospects should be introduced from other countries, such as—Pangola grass (Digitaria decumbens) has proved to be ideal in West Indies and Stylosanthes sundaica or Townsville Lucerne in North Australia and their characteristics evaluated under Malayan conditions if we are to improve our pastures and fodders.

To sum up, the need for fodders and pastures qualitatively and quantitatively and their officient utilization warrants greater attention than before. With the em-

phasis on Rural Development nationally and Freedom from Hunger Campaign internationally, the need for more animal protein through improved animal grassland associationship is, to say the least become vital. This is the common goal of all agricultural workers, a goal which has as its aim establishment of better overall living standards through a more careful understanding of the plant-animal associationship.

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FRUIT CROPS IN A DIVERSIFIED ECONOMY

By TAN PENG GEE—Agricultural Officer, Singapore.

Editorial Note:

Presented here and on the following pages are four papers read during the first symposium of the Alumni Association of the College of Agriculture, Malaya, held at the Rubber Research Institute of Malaya on the 7th and 8th July, 1962. The Publications Committee of CASU are indeed very grateful to the Alumni Association for granting us permission to reprint these papers in the 11th issue of the Serdang Sun.

With the advent of rubber cultivation at the beginning of the 20th Century, Malaya became one of the greatest producing regions for natural rubber in the world. Indeed Malaya enjoyed a prosperity never known before in this country. We have therefore, witnessed what seemed to have been the Golden Age of agriculture in Malaya for the past few decades. The prosperity which rubber endowed to this country are many, but most important is the economic security it has bestowed on the small holders.

2. But, today, the future of our natural rubber industry seems to be at the cross-roads, because of the continuous expansion and improvement in synthetics. The years ahead present a challenge not only to the rubber industry itself, but to the entire National Economy of the country, since rubber accounts for more than 50% of the National Income. Every year the challenge grows stronger because scientists and technologists are searching further and deeper for new isotopes and catalysts to produce better and cheaper synthetic products.

3. Although the natural rubber industry is prepared to meet the difficult years ahead with calm and confidence and with whatever way it know best, the rest of us should have no cause to feel complacent about the present situation. Instead the competition from synthetic should serve as a warning to us to take stock of our overall agricultural economy.

4. Our first reaction in the face of stiff competition from synthetic is to turn our attention to the cultivation of all other kinds of crops, and the search for new agricultural products. Diversification of crops would enable us to see what crops other than rubber that can be grown in order to improve the present pattern of agricultural economy which will go on functioning regardless of competition from synthetics. In searching for more agricultural products we are therefore helping to prepare for new ways to survive in the days when rubber is no longer the prima donna crop in Malaya.

5. I hope this Symposium we are having today would provide us the opportunity to ponder over *future pattern* of agriculture in this country. It is relevant here to pose the following questions:—

1. To what extent should the crops be diversified?

2. What are the effects of diversification on smallholders and others?

3. Would a diversified agricultural policy in fact refer to a mere expansion of a few major crops such as Oil Palms, Coconuts, Cacao etc., or would diversification mean an overall or expansion of every type of crop that can be expanded and commercialised?

4. And finally, would the small growers development be on a planned economy based on a diversification of crops or otherwise?

These are leading questions and no easy answers or solutions can be expected.

6. Diversified cropping is not new to us, as we all know that we have a few major crops which have cultivated in a large way and very successfully too. But a diversified agricultural economy based on the expansion of not only major crops but also minor crop is something worth studying about. So I shall be talking on a group of minor crops called 'Fruits.' The fruits I have in mind are the common perennial varieties such as Durians, Rambutans, Chikus, Dukus, Mangosteens, Soursop, Guava etc. These fruits grow freely in this country and with a little extra care can be made productive in large areas.

7. It is a fact that today when we talk of fruits we think only of small lots of haphazzardly grown fruits in smallholdings and in our backyard gardens. That our fruits are grown this way by and large is true. No large scale cultivation of fruits except the pineapple are to be found anywhere in Malaya; and no capital can be attracted to expand their cultivation on any commercial scale. No business man can be induced to set up a rambutan plantation or What are the reasons and why is it in this country we do not try to develop a fruit industry? I think the following factors have something to do with it:

(a) There is no other outlet for our fruits except for fresh consumption locally.

(b) There is no storage facilities and because fruits are perishable particularly in this hot climate of ours it must be sold immediately.

(c) There are no factories is which the making of jams, fruit juices and methods of preservation and packing, can be profitably done.

(d) There is no export market for our fruits and fruit products.

(e) Finally, the financial risk is considered too great and the return poor as compared with rubber.

8. But, on the other hand, as small holders crops, none of the above factors just mentioned seem to matter. This is because when a small grower sticks in a few fruits trees, he does it more for the

pleasure of it, hoping that it will one day give his family and friends some 'buah buah' to eat, rather than for the purpose of realising a profit from his fruit crops. In any case fruit crops do not constitute a commercial crop of any significance to him. His main income is derived from his few acres of rubber, or if he has no rubber holdings, he may obtain it from his sawah or coconuts. At any rate if he has no holdings he could always work in a nearby estate. Therefore, it is not surprising to learn that the small holder is not unduly perturbed by the fluctuating prices of fruits or terribly concerned when the yield of his few fruit trees is either high or low. But it would be of significant importance if the price of rubber should fall to a level when he has to lower his standard of living.

9. The upshort of this is that fruit crops are not grown anywhere on a commercial scale; they are only to be found in small holdings.

10. It is regrettable that although we have in our local fruits, resources for developing a potential industry we are yet unable to increase the commercial values of these fruits. There is a wealth of knowledge of technical know-how such as canning, quick-freeze packing, cold storage, and knowledge about jam-making and production of fruit juices. Yet we are not making the best use of all these opportunities. I think the time is here for all of us to think along such lines and apply the modern methods of packing and storing with a view of exporting these fruits to foreign markets. We should explore new storage facilities to delay the onset of climacteric rise of fruit ripening and prevent early decay. We should go in for quick-freeze packing and not merely canning. Last but not least we should expand our local market and find new markets through export. I am sure when we commercialise our fruits by packing in standard attractive packs, we would have a thriving industry equal to the pineapples industry which is so important to an agricultural economy such as ours, especially the challenging years of synthetics ahead of us.

11. I would like to assert again that without any commercial value attached and without a demand for the commodity, the entrepreuners would not be interested in it. This is of course a basic economic law.

12. So far we are conversant with the pineapple canning processes but it may not be the best method to process some of the other fruits. I understand that rambutan is not really a great success when packed this way. It is therefore important that research must be set out immediately to find out what new and better methods there are to pack each individual variety of fruit. I envisage great possibilities for durians as jams and jellies, so if the method of packing can be standardised and improved to compete with world standards and in attractive labels, there is no reason

why such products cannot find popularity in both the local and foreign markets. Our rambutans may not can well, but preserving them in frozen packs either with or without syrup might be the solution. Here I allude to the method of packing strawberries, green peas, Brussel sprouts as employed in U.K. Even the guava fruit has possibilities as guava jellies. This fruit is very popular in the West Indies. We could also explore the possibilities of manufacturing fruit juices from some of our Malayan fruits such as the Durian Belanda, Carambola and citrus. A fruit cordian industry can be developed.

13. Before I come to the final part of this paper, I would like to speak a little more about packing in quick freeze cartons. This method of packing is popular today in all western countries because of advanced refrigeration technique and the establishment of Supermarkets in all the big cities. Facilities for cargo transport is so efficient and advanced that any perishable goods can be shipped within hours, and kept in good state on arrival at anywhere on the globe. Jet service can transport anything from Kuala Lumpur to London within 24 hours, and all cargo boats are equipped with the most up-to-date freezing chambers. These are the important facilities of this decade, facilities which we must take full use of if we are to popularise our products in the supermarkets of the world. Furthermore we should not forget that by quick-freeze packing our fruits, we create an off-season market for many of our seasonal fruits and thus expand our local market. To complete effectively with foreign products we could put tariffs if it is in our national interest to do so, and encourage consumption of local fruits. A fruit industry is a possibility and with rubber at the cross-roads we must therefore set about to establish one.

14. If a working committee is formed with government sponsorship to study and investigate the possibilities of packing local fruits and fruit-products, then we can expect some results, namely commercialising our most popular tropical fruits. At the same time the horticultural activities of the Department of Agriculture could be stepped up to study on a wider range of fruit and its varieties and introducing better strains, study the effects of stocks on scions in grafts, effects of light and heavy pruning, biennial bearing characters of some fruits, preharvest blossom and fruit drops, incompatibility etc. and on problems of gas or cold storage. On the other hand the Food Technological experts can be drawn in to assist in finding out how best to pack, can, preserve, dehydrate, and making them into jams and juices.

15. All this is in the business of agriculture, and I therefore hope that this paper which I have delivered will have captured your imagination if not your agreement with me.

SILKWORM PRODUCTION OR SERICULTURE

LAU THENG SIAK, LEE PLANTATION LTD., SINGAPORE

I am going to talk on a subject which we all know little about. The subject is silkworm production or sericulture. I have found that silkworms can be successfully raised in this country. We have the advantage of a tropical climate and are in a position to compete successfully with other silk producing countries which owing to climatic limitations can only produce silk for about 6 months in a year.

A sample of silk worm eggs was imported from China into Malaya in September of last year. The eggs hatched out within 10 days of arrival. The first batch of larvae, however, suffered heavy morta lity—almost 50%—probably due to the abrupt change of climate, but subsequent generations from this importation suffered little mortality thus proving that the worms very quickly acclimatised to our conditions.

I was given 35 newly hatched larvae from the 6th generation of the original importation and so I had the chance to observe the whole life cycle of the worms and learn how to take care of them.

Silkworms feed on mulberry leaves only. There are many varieties of this plant but so far I have found only two types in Malaya,—one with big crinkled leaves and other with small deeply serrated leaves. Silkworms prefer the big variety.

The newly hatched larvae are about the size of an ant and almost black in colour. In their infancy, they are too delicate to be handled with the fingers. A dry Chinese writing brush has to be used to pick them up if you wish to transfer them about. During the first week, they should be fed on the more tender leaves and these should be chopped and fed once every 3 hours. The leaves should be dry but not wilted.

Mulberry leaves wilt very rapidly in our hot weather and I find that the best way to preserve the leaves is to wrap them up in a wet towel and keep the towel moist all the time. In this way leaves can be kept fresh for 3 to 4 days.

After the first week, the leaves can be fed whole and the droppings should be removed once a day. day. The easiest way to do this without having to handle the worms is to wait until the worms have exhausted their food and and are hungry. Then put some fresh leaves over them and they will soon crawl onto the new leaves to feed. Remove the new leaves together with the worms temporarily on to a piece of newspaper while you empty out the droppings and the remains of previous meals. Then put the worms and the new leaves back to their quarters.

On a big scale silkworms are raised indoors in round shallow bamboo trays arranged in tiers one above a nother. They should be protected against ants and lizards.

In Malaya, the worm stage, which is the only stage requiring feeding, lasts 21 days as against 30 and 42 days in the temperate zone. During this period the worm moults 3 times. If the worms are all from eggs laid the same day, they should start spinning within a day or two of one another. When a few worms are observed to spin, they should be transferred to a new tray filled with packing straw. The worms will wriggle themselves into the straw and spin cocoons round themselves. They take about 2 days to complete the cocoons and remain inside for 7 days before they emerge as moths.

Commercially only moths required for breeding are allowed to emerge from the cocoons by themselves because they have to cut their way out of the cocoons and in so doing severe the thread and ruin the silk. One cocoon is required to produce 250 cocoons in the next generation.

The rest of the cocoons not required for breeding are plunged into boiling water to kill the crysalis inside the cocoons. The cocoons are then dried and sold by weight. I have no figures of current prices but according to the Encyclopaedia Britiannica the price of raw silk in 1927 was about $12 a lb.

The cocoons that are saved for breeding will hatch out in about 7 days. The worm goes through a complete metamorphosis inside the cocoon and comes out as a white silvery moth. Through 4000 years of domestication, the moths have lost the power of flight. Immediately after emergence from the cocoons, the male and female mate and remain in copulation for 24 hours or more. If there are more females than males, the paired couples may be separated after 12 hours of copulation and the male will seek for another female. If there are more males than females. the extra males should be removed as they are sexually aggressive and will interfere with the paired couples.

After copulation the females begin to lay eggs. Sheets of paper should be provided for the eggs to be laid on. The eggs are creamy white at first but eventially become dark grey as the larvae inside them develop. In our climate the eggs will hatch in about 7 days. In temperate climate the eggs laid in Autumn will not hatch until the following Spring. Eggs do not hatch unless the air temperature is above 77F.

The whole life cycle lasts for about 40 days under Malayan condition and about 60 days in temperate countries. Now let me go into the economic side of sericulture.

(1) It takes 15 lbs. of fresh leaves to produce 1 lb. of raw cocoons i.e. cocoons with crysalis inside.

(2) It takes 100 lbs of raw cocoons to produce 16 lb. of silk, that is to say it takes 94 lbs. of fresh leaves to produce 1 lb. of silk.

(3) I have no up to date figures for the silk trade. The latest figure I can lay my

hands on is for 1927. World trade in silk in that year totalled 128,000,000 lbs. valued at $1,500,000,000. As in the rubber the U.S.A. was the biggest importer of raw silk. She imported raw silk to the value of $400,000,000 in that year.

(4) Japan and China together produced about 85% of the world's silk supply. Other lesser silk producers were France and Italy.

As in rubber, silk has its synthetic counterparts but it is found that in spite of artificial silk, world demand for natural silk is increasing because it is an article of fashion and of sophisticated value and is extensively used for mixing with other textile yarns. As the standard of living of the people of the world increases, so will the demand for natural silk increase.

I list here the reasons why I think Malaya can be a great silk producing country:—

(1) Our climate allows us to get 8—9 crops a year instead of 3—4 crops as in temperate countries.

(2) Mulberry trees can be grown as a catchcrop in rubber estates in place of Flemingia and crotolaria.

(3) Silkworm rearing is ideally suitable as a side line for estate labour.

(4) No expensive machineries are required for the small producers. All they need are simple, inexpensive hand looms to reel the cocoons.

Under these favourable conditions, Malaya can produce silk at any price and even if there is a slump in silk price, it will not seriously effect anybody because the capital investment is next to nothing.

"The final measures of a man is not
What he has *gained,* but what he has
done. Opportunities for great things
Come Surely to one who is reliable,
efficient and eager."

— Plato —

DIVERSIFICATION OF THE FEDERATION'S ECONOMY IN REGARD TO RURAL DEVELOPMENT

By Hon. TUAN HJ. KHALID B. AWANG OSMAN

A. The Need for diversification

It is the declared policy of the Alliance Government to increase the national output of the economy in order to provide higher standards of living for the people. In the light of this policy His Majesty in the Royal Address to Parliament stated that although every aspect of the Government's economic and social development policy will continue to receive vigorous attention, the keynote for the immediate future will be the implementation of measures to widen the base of Malayan production through agricultural and industrial diversification.

In fact diversification is the Order of the Day. The need for diversification is urgent because of the over specialisation and execssive dependence of the economy on rubber. Rubber accounts forover 25% of the Gross National Product, nearly 30% of employment and about 60% of total exports. This results in the economy being largely dependent for its prosperity on the fortunes of a single product and subject to the characteristic short-term fluctuations in the world market prices for rubber. The latter situation makes it difficult for development to be planned with confidence and precision. In addition, in view of the declining trend in the price of rubber, excessive dependence on product makes increasingly difficult for the economy to generate the national income and investment which are required to accelerate economic development and to provide the rapidly growing population with rising standards of living.

The need for diversification is even more urgent now than it was in 1960 because of recent trends in the world market price of rubber and the threat which large-scale releases from foreign stockpiles may pose. The Second Five Year Plan was formulated on the basis of an 80 cents per pound price of rubber. It appears now that the average level which will prevail for the period of the Plan will be lower than estimated in the Plan.

B. Diversification in General

The successful execution of the diversification programme in the agricultural and industrial fields, will depend on the combined investment and efforts put in by the Federal and State Governments as well as private enterprise both local and foreign. Broadly, the task of the Government is to create the infra-structure without which private investment will not take place, to provide inducements for private investment to flow in desired directions and to supply additional investment where private investment is inadequate. The task of private enterprise, on the other hand, is to undertake the execution of the diversification programme on the ground by the setting up of new secondary indus-

tries and the planting of alternative crops to rubber. In terms of investment, the task of private enterprise will form the major part, as it is also the case in respect of the whole development plan. Of the total investment of $5,050 million envisaged in the plan, $2,900 million or 57% will need to be provided by private enterprise.

With respect to the diversification of agricultural production, the Second Five Year Plan provides for a considerable increase in the level of investment on drainage and irrigation for padi and other crops, oil palm development, rehabilitation of coconut areas, forestry, fisheries and animal husbandry. Concurrent with these immediate activities, research and field testing will be taken to effect the introduction and development of crops which have not been grown extensively in this country. To enable the diversification programme to be soundly based for intensive and accelerated treatment, the National Development Planning Committee has obtained the advice of two international experts on the techniques to be employed to intensify Malayan Agricultural diversification. The Report of the Experts is now under active and detailed consideration.

C. Oil Palm and Diversification

(1) Private Capital

It is heartening to note that private enterprise already is beginning to undertake the diversification of agricultural production. A number of companies and estates are actively considering the possibility of planting oil palm and in some cases the planting of the crop on an important scale has already begun.

(2) Federal Land Development Authority

The F.L.D.A. too is doing its part. It has planted 1,000 acres of oil palm at Kulai in Johore and 1,500 acres more will be planted next year. The total acreage untimately will be 4,000 acres. It proposes to develop further oil palm schemes at the following places in 1963:—

	acres
(a) Jerangau, Trengganu	20,000
(b) Sungei Tersat, T'ganu	4,000
(c) Kulai II, Johore	4,000
(d) Sg. Tinggi, Selangor	4,000
(e) Ulu Jempul, Pahang	4,000

Subject to the suitability of the soil the F.L.D.A. will in future open up more oil palm land development schemes in preference to rubber.

(3) Smallholders:

To enable the smallholders to play their part the Federal Government in conjunction with the State Governments through the National Land Council has approved a new land development scheme known as "The Controlled Alienation Scheme". Under this scheme land should be zoned, according to its soil suitability, into areas for growing rubber, dusun, coconuts or other crops, bearing in mind the emphasis on

diversification of the Government Second Five Year Development Plan. Areas up to 2,000 acres should be pre-surveyed into lots of *NOT MORE* than 10 acres in extent with a small central reserve for Government purposes and a shopping centre.

The land should be alienated under the Group Settlement Areas Act for the following persons.

(a) landless people who do not wish to wait for places in F.L.D.A. Schemes,

(b) people entiled to Fringe holdings if no land is avai lable to give them a fringe holding,

(c) people who have holdings of land less than 6 acres in area which they have fully cultivated and

(d) landless people such as estate labourers, etc. who have sufficient means or capacity to develop land.

From the above it will be observed that under this scheme lots of *NOT MORE* than 10 acres can be made available to rubber smallholders who are entitled to replant their rubber under paragraphs 18 (1) and 19 (1) of Scheme 3 of the Rubber Industry Replanting Board Fund B. Under para 18 (1) of the scheme those who own not more than 30 acres and have replanted up to 1/3 of their holdings can new plant up to a maximum of 5 acres. Under para 19 (1) smallholders who still own fairly good rubber not exceeding 5 acres are eligible to new plant up to a maximum of 5 acres while retaining their old rubber which will have to be felled within 7 years of the date the new area is planted. At present there are about 60,208 smallholders owing land 5 acres and less and 40,737 owning more than 5 acres but less than 30 acres who have started replanting. About 413,712 acres have been replanted by them and they are now eligible under paragraphs 18 (1) and 19 (1) to new plant on equivalent acreage. As the Government is now considering paying $750/- per acre for replanting with oil palm, manila hemp and tea the time will come when a good proportion of the 413,712 acres will be planted with oil palm.

(4) PROCESSING AND MARKETING OF SMALLHOLDERS' PALM OIL

Admittedly at present oil palm is not a smallholders crop; but there is nothing to prevent the smallholders through a co-operative society, when the need arises, to gain the necessary technical and managerial know-how now possessed mainly by large companies. Some people are of the opinion that because the successful establishment of oil palm development areas involves agricultural, processing and marketting problems quite different from rubber, smallholders' oil palm schemes will not be a sucess. I personally do not think this is correct because from the time of planting to harvesting there are 4 long years for the smallholders with the help of the Government to think of the best methods of processing and marketting their produce. During this

period managers could be trained and the necessary technical know-how obtained by sending trainees to work with the existing oil palm estates and factories. When the time comes, if necessary, factories could be erected on a co-operative basis. Let us, therefore, do first thing first. The most practical step to take is to plant first and think about the processing later. If we start worrying ourselves about processing now we will not make any headway at all. If we must diversify, we must be able to process; so why bother. I am confident the solution will be found. Marketting is not a problem at all. There is always a ready market for palm oil right now and for many many years to come.

D. Improvement of Other Agricultural Products

(1) RICE

The Government is working very hard to make the Federation of Malaya self sufficient in rice by 1965. At present we are producing about 60% of our total consumption. To achieve this the Government is investing $165 million under the Second Five-Year Plan for drainage and irrigation. This is a big step forward compared with the allocation of $38.3 million under the First Five-Year Plan. The largest benefits from the irrigation programme are expected from further extension of the padi areas suitable for double cropping, improvement of average crop yields through works to assure adequate water supplies and additions to the total area suitable for padi cultivation. The most important of these projects is for the development of the extensive Muda River Catchment with an expected irrigation potential for about 200,000 acres in the North Kedah Plain. The Trans-Perak Project, Stage IV will provide land for new settlement amounting to about 40,000 acres. The drainage and Irrigation Department also carried out large land drainage programme and up to date not less than 180,000 acres have been saved from deterioration due to floods, poor drainage and salt water intrusion.

(2) COCONUT

Under the Second Five-Year Plan $15M has been appropriated for coconut rehabilitation and replanting programme. This scheme will not only help to check the decline in coconut production but will assist coconut growers to replant the lands with improved varieties.

(3) OTHERS

Besides the above the Second Five-Year Plan provides $20 million for Research and Extension Work, $10 M for Animal husbandry; $5M for Forestry and $7.2M for Fisheries.

The expected results from some of these programmes include an increase in the annual output of fresh mutton by 50,000 lbs. or by 17%; of pork by 30 million pounds or by 50%; of beef by about a million pounds or 3%; and of poultry by about 6 million more birds than at present. The increase in the value of livestock and poultry production should be $30 to $40 million during the Plan

period. The resulting increase in marine fish production is estimated at about 10% by 1965 while production of fresh-water fish is expected to increase from about 20,000 tons a year at present to about 27,000 in 1956.

E Rural Development Projects

However the success of the land schemes depends largely on the availability of access roads and the provision of some of the facilities and amenities needed by the settlers. Towards this end the Second Five Year Plan provides:-

$190 million for Road and Bridges
$140 ,, for Water supplies
$260 ,, for Education and
$145 ,, for Health.

In physical terms; the investment target implies about 1,000 miles of new rural roads after allowing for expenditures on improvements of existing roads. It is expected that the network of State and rural roads will be increased by about 15% during Plan period. Out of the $140M about $100M is allocated for rural water supplies. This should make possible an additional supply of about 50 million gallons per day to serve 2.5 million people or more than 50% of the rural population.

The Ministry of Health and Social Welfare is establishing a network of health units serving the entire rural population. A long step forward towards this goal will be taken during 1961-65 with the establishment of 37 main rural health centres, 148 sub-centres and 652 midwife clinics. These facilities will provide additional medical and health services to more than 2 million of the rural population.

F. Conclusion

The main objective of the Rural Development Programme is to raise the income of the rural people. The best and surest way to achieve this objective is to increase and improve their productivity. This can best be done by providing land to the landless and to those with uneconomic holdings and then encouraging and helping them to grow permanent crops with the emphasis of bringing about greater diversification of production.

When the Rural Development Programme has helped to raise the income of the rural people the purchasing power of the people in the Federation of Malaya as a whole will be increased. With a limited market and a small national purchasing power the secondary industries that are now springing up in the Urban areas can never afford to survive. In fact other Rural and Industrial developments must move together for each is dependent on the other. As such it is wrong and most unfair to say that the Rural Development Programme benefits only the rural people—the Malays in particular. In fact it is a National Programme to increase the National output of the economy in order to provide higher standards of living for the Federation of Malaya as a whole that we can all live in peace and prosperity.

RUBBER AND DIVEDSIFICATION

TAN HON LOONG

Diversification in Agriculture is a subject that can be discussed at great length and can mean different to different people. I agree that diversification is good for the country especially with the political changes around us. During the last war many people were starved because of shortage of food. Hence there is a need for diversification which is now the official policy. What is the meaning of diversification. To many it means finding an alternative crop for rubber. To me a planter it has a different meaning and that accounts for the subject of my talk.

My personal view on diversification is not just planting something else in place of rubber but to plant other crops in addition to rubber which is quite a different matter. My reasons are that rubber is still the most profitable crop and is easy to plant. Many will disagree with me, saying that the future of rubber is bleak because of the competition from the synthetic rubber and the consequent decrease in price and so don't plant rubber—replace it with something else. My contention is to carry on planting rubber in 'conjunction' with other crops.

The threat at synthetic has been with us for a number of years and needless to say it has a controlling factor over the sale of natural. As for back as 1954 synthetics were produced in many countries, not so much as to replace natural but to supplement the actual or expected shortage of the latter. Statistics show that the world consumption of rubber had risen to 4 million tons in 1961 from 2.5 millions in 1950. Production of natural rose from 1.8 million tons in 1950 to 2 million tons in 1961, an increase of only 0.2 of a million. Assuming that the total production had been used up in 1950 natural equals of 72%. In 1961 owing to shortage and increased in consumption the use of natural equals to 50% only. On this fact alone we must produce more rubber to meet increased need and prevent synthetic from further expanding. This con-consumption however in no fact reflects the production capacity of SR (Stereos). Let us look at the figures again. In 1961 it was said that the capacity of production of stereo in the U.S. was 125,000 tons. However less than 50% of this was produced and out of this less than 60% was sold i.e. 30% of the total capacity. This means that provided favourable circumstances exist sales of SR can go up by 70% (consumption).

Before the new Stereos NR was the premium product having better resilience, good processing, high tear and wear, abrasion resistance qualities. These qualities have now been matched by the new SR. was between 23 to 28 U.S. cents (76 2/3 to 93 1/3) and it has now

come down to 20 to 25 U.S. (66 2/3 to 83 1/2). Natural at the moment is 15 to 28 U.S. (50-93 1/3)—still at a premium. This can be brought down to 18 U.S. (60 cents) which should not be difficult which at worst is still lower than SR. that being so there are two choices before us:—

(a) Limit production and sale but at a higher price thereby encourage greater use of production.

(b) Encourage production and sale at a lower and competitive price This will sitmulate greater use of NE and thereby contain the expansion of SR.

Demand for NR is still there because of its excellent qualities e.g. in the manufacture of heavy tyres—the life ratio is 2 of NR to to 3 of SR. Also for the cheaper goods NR is preferred because of its better mixing and processing qualities. Therefore if NR is produced in greater quantities fewer SR factories will be established and some may even have to close down. Once this happens the factory will deteriorate and it will be too costly to re-open. This is not the case in rubber plantation.

In Malaya there are about 4 million acres under rubber and supporting directly a quarter of its total population of 6.2 million. Of this 1.6 million has been replanted including 590,000 acres of smallholdings and another 120,000 acres of new plantings. The export of this commodity brings 55% of the total earnings. More than ½ of the acreage is under smallholders.

The fact that large U.S. Manufacturing companies had invested something like 150 million on rubber estates and 10 million on replanting since the discovery of stereo in 1965 testifies to the need and confidence in NR.

What then should be done to improve the position of NR. We should improve the quantity, quality and marketing facilities. The last 2 are in the good hands of the Research Institute, N.R. Bureau and the Rubber Development Bureau. Our problem is therefore with quantity—that is producing more at a lessor cost and to a lesser extent to improve the quality at the factory end. As agriculturists we are therefore tackling 4 important things:—

(a) Use of improved plainting material.

(b) Use of yield stimulants.

(c) Use of improved tapping systems.

(d) Use of improved techniques of cultivation, such as planting density, fertiliser application, etc.

As regards improved planting materials we know there are now clones capable of yielding 4,000 lbs. a year an improvement of ten times over the present yield of 350 lbs. for old seedlings. Even with the existing lower yielding clones certain estates have yielded 1,600

to 1,800 lbs. in the 3rd year of tapping with an average of 2,000 lbs. per annum for the first 5 years. This is certainly no mean achievement. We can safely assume that still better results will be achieved. However as it takes a long time to "prove" a clone we can leave further speculation aside.

Although high yield can be obtained from modern clones under normal tapping, this does not represent the actual potential of the tree. Method of extracting even more latex by stimulating the flow has been studied. It is recognised that there must be a limit to the producing capacity of a tree and draining off at an early stage may have serious after-effects. That being so this system of improving yields is normally applied to older trees to maintain a higher yield. There are mainly two methods of yield stimulation, one is to apply the chemical on the tapping panel of tapped bark and the other is below the tapping cut on untapped bark. Depending on the methods, type of tree, skill and tapping systems, it is known that yield can be increased by 30 to 100%. A very poor stand giving only 350 lbs. can therefore be made to give between 455 to 700 lbs.

Another fairly common system of improving yields is by increasing the intensity of tapping from 1 cut every 2 days to 2 cuts every day or every 2 days. This method gives an increase of 30% over the normal. Theoritically a low yielding area of 350 lbs. should increase to 455 in a greater intensity and with stimulation would rise to between 769 to 9910 lbs.—an average of 839 lbs.

While we are maintaining the yield in the old rubber we are also busy improving the techniques of cultivation to reduce the period of immaturity by correct planting densities, cover and fertiliser treatment. By planting at a lower desity with proper leguminous covers caupled with the right selection of fertilisers will result in early maturity of trees by 20% of its normal period of 5 years for seedling and 6 years for budding. This means that we can tap our seedlings after 4 years and buddings a little less than 5 years.

We now know that rubber trees can be exploited to increase its output by various means, let us now examine the costs of production. The estate costs comprise of tapping which takes up 48% of the total cost—28% for general charges—13% for manufacture and 11% for upkeep.

Taking tapping as the pivotal point and the average wage of $3.50 per tapping day of 5 acres per day we arrive at the following figures:—

On a 350 lb. per acre estate the tapper brings in 10 lbs. tapping and is paid 35 cents per lb. making a total cost of 72.92 cents. With

stimulation an increase of 30% is obtained giving 455 lb. per acre and he brings in 13 lbs. @ 26.92 cents per lb. making a total of 56.09 cents.

	Yield/ acre	Yield/ tapper per tapping	Cost per lb.	Total cost
	350 lb.	10 lb.	35.	72.92
With stimulation 30% increase in crop	455	13	26.92	56.09
With stimulation and Intensive tapping:				
60% increase	560	16	21.88	45.42
100% increase	700	20	17.50	36.46
350×3	1,050	30	11.67	24.31
	1,575	45	7.8	16.25
With newer clones 350×10	3.500	100	3.5	7.2

from 560 to 1,575 lb. the reduction in the total cost amounts to 29.17 cents per lbs.

At the present price level of 75 cents no clear minded planter or owner will tap trees of 350 lbs. per acre as this means he has to pay a penalty of roughly 8 cents per lb. he produces, allowing 10 cents for cess and duty.

lb./acre	Gross Profit @ 75c. level c.	@ 60c. level c.
455	9	—
560	19½	4½
	28½	13½
1,050	40½	25½
with tapper's pay doubled (7.00)	29	14
575 — do —	41	26
3,500 — do —	54	39
with tapper's pay trebled ($10.50)	50	35

At the moment the wage rate is pegged to the price factor. There will come a time when trade unionists will persuade employers to pay higher wage. We will then be faced with the problem of contributing towards a higher standard of living of the workers by increasing their wages but with the price of rubber falling. Still let us work out the gross and nett returns—needless to say estate yielding less than 700 lbs. acre will not survive.

@ 700 gross profit	$ 350.00	nett profit	94.50
1,050 „ „	525.00	„ „	367.50
		(double rates)	147.00
1,575 „ „	787.50	„ „ „	409.00
3,500 „ „	1,750.00	„ „ „	1,365.00
		(treble rates)	1,255.00

To the smallholder of 8 acres

at 700 lbs: monthly income	= $235/-:	annual income	= $2,800
1,050 lbs: „ „	= 350/-:	„ „	= 4,200
1,575 lbs: „ „	= 525/-:	„ „	= 6,300

Compared to the tappers' possible wage of $5.25 to $7/- per day.

Asuming, that with higher yields the economic life will be shortened, and assuming that the tapping will be confined to the virgin and the 1st renewed bark only, we have 20 years of tapping at the average of 1,050 lbs.

Considering that it costs $1,000/- an acre to plant and bring to maturity, it will take 8 years from date of planting to recoup the capital. It is really not a bad investment. For the smallholder who supplies his own labour it takes only 7 years. The capital for planting is distributed as follows:—

$400/- for the 1st year, $200/- for the 2nd year and $100/- each for the remaining four years.

Next comes the utilisation of labour with an increasing population what hope is there for full employment?

1 person is employed on 8 acres of rubber compared with 1 person for 20 acres of oil palm.

That is, a rubber estates provides 2½ times more employment than an oil palm estate.

1,000 acres of oil palm = 50	workers =	3 a family
with 3 dependants	=	75 persons
1,000 acres of rubber	=	218 persons.

Rubber will therefore allow the utilisation of normally half the land including swamps for other complimentary crops such as rice, bananas, vegetables, fruit crop. Rubber the main stay with all others providing fringe benefits and keeping the whole family in a happy stage of self-satisfaction. In terms of money return there is no other crop that can beat the poorly understood and often ill-treated rubber trees.

"Dost thou love life? Then do not squander time for that's the stuff life is made of."

SCHEME NO. 3 FOR THE ADMINISTRATION OF FUND "B"

THE SMALLHOLDERS RUBBER REPLANTING SCHEME

A Rubber Smallholders Enquiry Committee was appointed by Government in 1950 to study the position of smallholdings planted with rubber and report back. Reports were submitted in 1950 (Legislative Council Paper No. 48 of 1950) and again in 1952, (Legislative Council Paper No. 8 of 1952). Following the submission of these two reports the Rubber Producers Council appointed a Smallholders Replanting Sub Committee to study the problem of replanting smallholdings and to make recommendations. The Report recommended that action be taken to draft a Scheme for the Replanting of Smallholders old and uneconomic rubber. An interim Scheme was set in motion in 1952 pending the drafting of the necessary legislation. This Scheme was known as Scheme No. 1. With the passing of the necessary legislation Scheme No. 2 came into force on 1st January, 1953. It took over the commitments of Scheme No. 1 which had made little headway in the interval.

Scheme No. 2 was given an operative life of 7 years from 1st January, 1953 to the 31st December, 1959. During this seven year period it was hoped to replant a total of 480,300 acres of Smallholders rubber out of an estimated total acreage of 1,606,898 acres of Smallholders rubber planted throughout the Federation of Malaya. The figure of 480,300 acres was regarded as roughly one third of 1,606,898. This is mentioned because the basis of entitlement to replanting rights is one third of the area under rubber owned by a smallholder with variations according to the acreage group in which a smallholder is classified.

At the inception of Scheme No. 2 in 1953 assistance was confined under the Scheme to cover replanting of not less than one acre or more than one third of the holding or holdings, provided that smallholders owning 6 acres of rubber land or less would be assisted to replant up to 3 acres. Grants totalling $400 per acre were paid in six instalments. In 1954 Scheme No. 2 was amended to provide for an increase in the total grant payable from $400 per acre to $500 and for those Smallholders owning 15 acres or less being assisted to replant up to 5 acres. Scheme No. 2 was originally financed from two cesses collected on rubber exported from the Federation of Malaya. These two cesses were known as Schedule II and Schedule IV. Cchedule II cess was withdrawn on 31st May, 1955, but Schedule IV cess continues to be collected at a flat rate of 4½ cents per pound on all rubber exported. On 5th April, 1956, the Government Replanting Scheme for Smallholders known as the Rubber Industry (Replanting) (Smallholders) Scheme came into force. Finance for the implementation of this Scheme was provided from the $112 million allocated as the smallholders share

of the $286 million voted by Government for the replanting of rubber throughout Malaya. This Scheme was administered by the Administrators of Fund 'B' on behalf of Government and incorporated in Scheme No. 2. The provision of these additional funds enabled the grants payable to smallholders to be revised upwards once more from $500 per acre to $600 per acre. The instalments or advances were reduced from six to five. It also enabled assistance to be granted at the rate of $600 per acre to permit of an increased acreage being replanted or new planted with high yielding rubber or replanted with approved other crops. Increased entitlement was confined to smallholders owning not more than 30 acres of land under rubber. Smallholders in the group 5 acres and under were entitled to receive additional assistance at the rate of $600 per acre to new plant an acreage equivalent to that owned by them or already participating in Scheme No. 2. As an example a smallholder owing 5 acres of land under rubber may have been receiving assistance in respect of 3 acres of his holding. He would thus qualify for a grant to new plant an equivalent acreage of 3 acres. At the same time he could further qualify to receive a grant to replant the balance of his old rubber, 2 acres, and subsequently receive further assistance to new plant an equivalent acreage of 2 acres. Smallholders in the group over 5 acres and not more than 15 acres qualified for assistance to replant up to 10 acres of their holding or holdings or to replant up to 5 acres and new plant up to 5 acres. Expressed differently all smallholders owning over 5 acres and not more than 10 acres received assistance at the rate of $600 per acre to replant—new plant up to 10 acres Smallholders owning more than 10 acres of rubber land but not more than 15 acres of land under rubber received similar assistance up to a maximum of 10 acres. Smallholders owning over 15 acres but not more than 30 acres of land under rubber received assistance to replant one third of the area of their holding or holdings under rubber and were further assisted to replant or new plant an additional acreage not exceeding 5 acres. Thus a Smallholder owning 21 acres would be eligible for assistance to replant—new plant one third of 21 acres plus an additional 5 acres making 12 acres in all. Smallholders owning over 30 acres of land under rubber only benefitted to the extent of the increase in grant by $100 per acre on one third of the total acreage owned by them. They received no assistance to replant or new plant additional acreage.

On 14th March, 1957, Scheme No. 2 was further amended with a view to assisting a smallholder in the group 5 acres and under to new plant with high yielding rubber an acreage equivalent to that owned by him, while retaining his old rubber to provide income during the period his new planted rubber is maturing. Within a period of seven years years from the date of new planting the rubber, the smallholder must agree to cut out and replant his old rubber with high yielding

rubber. This amendment was aimed at encouraging the smallholder whose only source of income was obtained from the sale of rubber produced from his old trees, to participate in the Replanting Scheme. The intention was good but many smallholders found it impossible to take advantage of the amendment because they could not obtain jungle land to carry out new planting.

Scheme No. 2 completed its period of operation on 31st December, 1959. On that date 327,290½ acres had been replanted and new planted throughout the Federation of Malaya. This achievement was most gratifying when it is remembered that the Scheme got off to a slow start and that in the early years there was much ignorance among smallholders as to the aims and objects of the Replanting Scheme and the conditions governing the payment of grants. To counter this ignorance publicity and propaganda were stepped up and rubber smallholders in the remotest kampongs in due course course learned about the Scheme. From 1956 onwards the response to the cry "Replant or Die" was answered with enthusiasm.

There is no denying that everything considered Scheme No. 2 was a great success. This fact coupled with the threat of competition from Synthetic Rubber suggested that serious consideration should be given to ensuring that the replanting of smallholders rubber should continue indefinitely after the period of operation of Scheme No. 2 had ended. Government took the necessary action in 1959 to ensure that legislation would be passed to enable the replanting of smallholders rubber to continue after the 31st December, 1959. Scheme No. 3 for the Administration of Fund "B" was published as Legal Notification No. 422 in the Federation of Malaya Government Gazette, Legislative Supplement dated 31st December, 1959. This Scheme took effect from 1st January, 1960 with the following objects:—

(a) To undertake and continue the commitments of Scheme No. 2 under Fund "B" and the Government Replanting Scheme;

(b) To provide for continued assistance to replanting and new planting by smallholders;

(c) Grants to be made to smallholders in respect of approved applications for the replanting and new planting of rubber at the rate of $600 per acre.

During the first year of operation of Scheme No. 3 a total of 76,383¼ acres was replanted and new planted under grant. In addition, 1,696½ acres were replanted on which no grant was payable, thus the grand total acreage replanted and new planted during 1960 was 78,093¾ acres, a record for any one year since the Replanting Scheme first commenced in 1953.

During 1961, 66,118½ acres were replanted and new planted under grant and 2,121 acres were replanted on which no grant was payable. The total acreage re-

planted and new planted during 1961 was thus 68,239½ acres a reduction in the area replanted and new planted of 9.800¼ acres when compared with the 1960 figures.

At the end of 1960 the total acreage replanted and new planted inclusive of Excess Replanting was 405,370¼ acres.

During the latter half of 1961 the position in respect of replanting rights and grant payments was reviewed by a special committee set up by the Administrators of Fund 'B' and certain recommendations were made. These recommendations were approved by the Administrators of Fund 'B' and the Rubber Industry (Replanting) Board and accepted by Government and took effect from 1st January, 1962.

Briefly summarised Scheme No. 3 has been amended as follows:—

(a) A further one third replanting right will be released under certain conditions as to qualification.

(b) The total grant payable per acre will be increased from $600 per acre to $750 per acre to all smallholders owning more than 5 acres of land under rubber. Smallholders owning 5 acres of land under rubber or less on 1st January, 1957 shall receive assistance at the rate of $800 per acre, the additional $50 per acre being paid in two instalments of $25 along with the 3rd and 4th advances.

(c) Grant advances will be increased from five to seven to ensure that control will be exercised over replanted holdings for a period of 5½ years as against 3½ years previously. It is generally conceded that in the past the period of control which covered 3½ years was too short. To ensure that young rubber is properly looked after until it is nearing the tapping stage it was decided to increase the number of advances payable.

(d) Minimum girth standards will be laid down by the Administrators of Fund 'B' for the opening of trees for tapping. Non observance of these standards may result in the withdrawal of payment of the sixth and seventh advances.

(e) A smallholder already participating in Scheme No. 3 under Fund 'B' who prior to 1st January, 1962 replanted an area in excess of that for which he was eligible to receive grants, shall be entitled to receive instalments of grants in respect of such replanting as are appropriate, having regard to the provisions of the Scheme and the age on 1st January, 1962, of the stand so planted.

It is most probable that the release of additional replanting rights and an increase in the rate of grants paid per acre will act as a stimulus to replanting. The Smallholders Replanting Scheme has been firmly established on a

sound basis. The success achieved to date has been the subject of comment by visiting delegations to Malaya from overseas countries interested in the production of natural rubber. Moreover the Malayan Rubber Replanting Scheme is the model on which other rubber producing countries have set up similar schemes for the replanting of smallholders rubber.

Under the conditions of acceptance into the replanting scheme Smallholders obtain their supplies of fertiliser and planting material through the Rubber Industry (Replanting) Board. Fertiliser and Planting Material are supplied at cost and delivered to the smallholding for the convenience of the smallholder. Originally smallholders were content to accept Tj. 1 Clonal Stumps but of late are now becoming aware of the necessity of obtaining the highest possible yields from their holdings and are now turning to budding and using budwood of the highest yielding clones as advised by the Rubber Research Institute. Many others are purchasing seed from proprietary estates which specialise in the production of seed in isolated seed gardens, the yields obtained from the rubber trees established from such seed being comparable to that obtained from budgrafted rubber of the best clones.

The Board in addition to supplying fertiliser and planting material to smallholders carrying our replanting, provide other services among which are the supply of 2-4-5-T for tree killing, Dalapon for lalang eradication, cover crop seed, fencing material such as barbed wire and wire netting, and the loan of spraying equipment.

Compared with early replantings the standard of present day replantings compares favourably with that of well managed Estates. The methods adopted by the progressive smallholder and estates are now being studied and followed by smallholders generally. The high yields being obtained from smallholdings planted in the early years of the scheme are the subject of comment amongst smallholders. Many smallholders have seen proof that their friends whose replanted rubber is now in tapping are obtaining yields three to four times greater than they were obtaining from their old rubber prior to replanting. This has encouraged many hesitant smallholders to seek admission to the Scheme and to replant their old rubber.

"Self Conquest is the greatest of Victories."

— Plato —

COLLEGES AND UNIVERSITIES IN USA 1961—1962
CENTENNIAL CELEBRATION OF LAND-GRANT

The Centennial Celebrations of Land-Grant Colleges and Universities was officially launched with a convocation at Kansas City, Missouri, November 12-16, 1961. Distinguished Americans and foreign visitors participated. Discussions concerned an evaluation of the land-grant system and its work in various fields, and included reports of four special studies, sponsored by the Carnegie Foundation, on the role of the land-grant institutions in international elucation.

Other activities will be held throughout the academic year 1961-62 and will culminate with ceremonies in Washington on July 2, 1962, commemorating the signing of the Act.

The Act authorized the federal government to grant lands to each state "to promote the liberal and practical education of the industrial classes in several pursuits and professions in life." Funds from the sale of these lands formed an endowment for state colleges and universities that undertook to carry out the purposes of the Act.

The Land-Grant Act recognised the need to make higher education available not merely to an elite, in the classical European pattern, but to all Americans who wished and could profit by it, to prepare them for every kind of occupation useful to themselves and their country.

Today 68 colleges and universities, in every state of the union, are land-grant institutions. The Act of 1862 laid the basis for the great expansion of higher education in America; its ideas have been planted not only in these institutions, but widely in higher education throughout the United States and abroad.

Every year there were more than twice as many jobs open to agricultural college graduates as there are young people with the degrees needed to qualify for them. One reason for this severe shortage—and neglect of many excellent professional opportunities — may be the narrow and mistaken way in which modern agriculture is often defined.

Agriculture is frequently said to be "shrinking," but the reverse is actually the case. While the number of farmers and ranchers has declined in recent years, the broad field of agriculture has grown by leaps and bounds, and continues to grow.

Modern agriculture includes all of the scientific, technical, professional, and business occupations concerned with the production and distribution of farm products. This agricultural complex, indeed, is the nation's largest single industry.

Four of every ten people employed in the United States serve

agriculture—which accounts for an investment of more than 170 billions of dollars.

There are more than 500 different occupations in the broad field of agriculture. They include such diverse activities as motive-making and market analysis; production of beef cattle and basic research on the invisible but destructive nematode pest; wildlife management and development of new and economic uses for farm products; advertising of farm products and their inspection for quality control and consumer protection, and many others.

Higher education in agriculture in the U.S. is mainly in the land-grant colleges and state universities. They grant most of the nation's advanced degrees in agricultural subjects, and more than three in four of the bachelor's degrees.

It is not too important at the start for a student to know exactly which branch of agriculture he will finally follow. Courses in the first year or two are general and allow flexibility in final choices. Professional instruction in agriculture is based largely on the natural sciences such as chemistry, physics, botany, zoology, and geology.

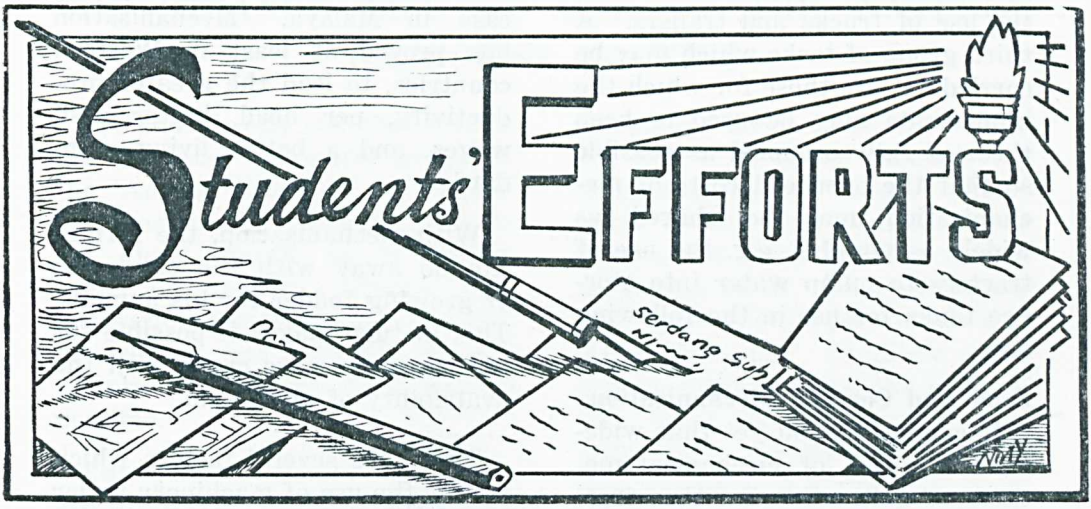
Four-year undergraduate courses are provided by the land-grant colleges in general agriculture, including agronomy, animal husbandry, dairy husbandry, poultry husbandry, horticulture, and wild game; in agricultural administration or economics; in agricultural engineering; in landscape art, and in other areas.

The land-grant colleges and universities seek to educate whole men and women for a full life and good citizenship. Courses of study are offered in arts and letters, medicine, the law, music, and many other subjects both within and outside the field of agriculture. Forty per-cent of doctorate degrees earned in all subjects in institutions of higher learning in the U.S. come from land-grant institutions.

The land-grant system of joint federal-state research and education in agriculture has resulted in many scientific discoveries of benefit to all people.

To stimulate their growth and contribute to their strength, all of the 68 land-grant institutions belong to the American Association of Land-Grant Colleges and State Universities. A list of members may be obtained from the association officers, 1786 Massachusetts Avenue, N.W., Washington 6, D.C., U.S.A.

It is through the Association, formed in 1887, that the land-grant colleges work with one another, and with the U.S. Department of Agriculture on national problems of extension education and of agricultural research. The association exercises no authority over its individual members, but is effective because its recommendations are based on study and review by representatives of the membership.



MECHANISATION IN MALAYAN AGRICULTURE

(By S. L. CHOA)—III)

The basis in one constant search for ways and means of raising our standards of living is the need to maintain, if not increase the amount of food produced per head of our population. With our growing population and limited land suitable for agriculture, we must make full use of all means of agricultural improvement so that we may initially maintain our present standards and then venture ahead into the sphere of steadily increasing production.

The means of improvement of agriculture can be classified mainly into the following categories with descending order of importance:—

(a) Better education.

(b) Better control of water—both irrigation and drainage.

(c) Wider use of fertilisers by the so-called "low-level" farmers.

(d) Better and more efficient crop processing facilities.

(e) Assistance to farmers—these may be in the form of financing their projects etc.

(f) Mechanisation.

Though I had placed 'Mechanisation' as the sixth point, it is nevertheless an important one.

Primary And Other Uses Of Machinery

The primary uses of machinery in Malayan agriculture are in the preparation of land for planting and on the processing of some of the major crops like rubber and oil palm. In both these spheres, production is checked either by the amount of lavour available—both human and animal—or by the ability of that labour to carry out certain skilful or handsome task. Other applications of machinery are aimed at achieving a wider cultivation of the land which has been prepared for cropping. Such secondary uses includes weed control, harvesting (if possible) and transport such as

the use of trucks and trailers. A third group of tasks which may be carried out are those for which the implements may be used to keep them as fully occupied as possible so that the overhead costs of mechanisation may be shared as widely as possible, e.g. the use of tractors to pump water into storage tanks for use in the following day.

Pros And Cons Of Mechanisation

It cannot be said yet that wide-scale adoption of mechanical methods of cultivation is either justified or desirable in Malaya because of the fact that many of the areas where machines are expected to work are far from both workshops and fuel supplies, and it is difficult to find people with mechanical skill or aptitude in such areas.

Considering in a very general way the advantages of mechanisation is can be said that machinery can render some jobs possible without which they would be impossible, for example, such as early ploughing in dry weather, green manuring in field scale. The use of machinery may reduce the necessity to resort to bad agricultural practices as husbandy methods are already in his knowledge, then the use of machinery may help him to bring more land under cultivation. Most important of all the point which all of us would admit is the mechanisation is a means of easing human toil, thus providing him with time for other activities. Mechanisation will ease the farmer of the fear of labour shortage in peak periods—though this doesn't seem to be the case in Malaya. Mechanisation has proved at least in Western countries, to lead the greater productivity, per head, better cash wages, and a better living standard.

With mechanisation, the farmer can do away with the extra job of growing fodder for his animals. This in turn makes it possible for him to grow more crops with the availability of more land.

There are several factors which favour the use of machinery under the Malayan type of climate such as even days, constant temperature and freedom from winter troubles as found in temperate countries. But unfortunately, most of the machines and implements are made in temperate zones for use in those areas. When these machines are used in this country they may meet soils which may be drier and harder or wetter and tickier than in those countries. Buried roots on newly opened land, ant hills, tough grass stools and decaying rubbish are common obstructions in Malayan fields. All these inhibit maximum efficiency.

On the other hand mechanisation may have little or no advantage in subsistence farming where the farmer has plenty of family labour or does not provide sufficient cash income to pay for machines, implements and finally fuels. This is the condition which exists among the majority of subsistence farmers in this country.

Thus before mechanising your land, it is advisable to weigh the pros and the cons.

THE STRANGE LIFE OF ONE OF THE NATURE'S GREEDIEST URCHINS

We know pretty well that insects are the most successful group in the 'Animal Kingdom' to wander the great world. However, we do not know exactly as to wether their exoskeleton, wings, size, adaptation, metamorphosis, height, hibernation, and fecundity etc. are factors that make this success possible.

Caterpillars as every one knows are the larvae stage of moths and butterflies-childhood of these insects. But what brats these children are! They eat and grow prodigiously and get into every thing and any thing and leave havoc behind them. The cabbage white butterflies, the tobacco horn-worms, the cutworms the larvae of the codling moths and the clothes moths alone cause millions of dollars of damage yearly. However from ancient time, a great commerce has been built upon the industry of the silk worm. All the 'Children' of nature are far more important than the older form of the same insects, most of which spend their time flitting from one nectar cocktail party to another, pollinating a flower here and there. A butterfly, like all other true insects, has six legs. A caterpillar goes to two or five better. With these it nipples along on its mighty war at home for it has a system of muscles which is in proportion to its size and weight. But some caterpillars, you will have noticed, move by bumping or looping. That is because the middle pairs of legs are missing or undeveloped. A caterpillar has a heart that keeps the yellow or green bloodmoving sluggishly but no lungs, instead pores on the their bodies connect with a net work of tubes and so aerate the blood. There is a crap, gut, jaw—the tireless jaws that move sideways. Primitive sense organs which become the adult of the insect, can distinguish light from dark. Apparently without ears caterpillars move in a silent world, deaf even to their constant munching. But they have delicate sense of touch all over the bodies. Concentration of nerve into a series of ganglia makes up the brain centres of the caterpillars. Here nerves of messages are received and other to mustcles dispatched.

To be born the caterpillar eats its way out throught the shell of its egg. Usually the egg has been laid on the caterpillars favourite food plant. So that the little gluttin can immediately fall to or with some species, if food is not at hand, the caterpillar quickly drops from its birth place by paying out a silken rope and crawls off to seek what it may evour.

Young caterpillars look a tempting titbit to many a bright bird's eye. So some wary kind of caterpillars feed underground or at night. Others are protected by a thick coating hairs many of which carry an irritant like that of nittles. Even the hairless caterpillars have their or them look like bare, way of swimming. Many dead twigs on the trees having the

same colour. Others have a flavour dis agreeable to the palates of their enemies. The puss moth larva can put on a false face by pulling down an extra folds of the skin forming a furious red 'fade' reary 'eyes' and a false fierce mouth. The silk-worm when fully grown is an little worker. In three days of constant reaving it spins a cocoon from which can be reeled off an unbroken filament. Skilled workers unreel these filaments and twist them into thread.

Within the privacy of the cocoon, the caterpillar changes from the larva, we know from the crawling childhood to pupa—a dormant stage. This has been likened to adolescense for now occur in the secretary the alteration from child to the adult. On the great day of emmergence the latent creature finally cuts or dissolves or unplugs an opening in its dull monastic retreat and crawls out. The wings crumpled like leaves in bud, slowly expand. Now the primitive sense organ of the caterpillars becomes the compound eyes of the adult and for the first time colour is perceived—orange, red, and yellow particularly delight the butterflies. The sense of smell in this winged animal is more exquisitely developed. The odour of the female vapour—moth will call the males from afar. Even a pot where she has been alighted is enough to sent there visitos fluttering around it in a frantic search for her. In the swallow tailed butterfly, males carry this allurement in their wings to attract the females.

Gone is the childhood greed of the caterpillar. These airy adults live only on nectar, reached even in the deep throated flowers by their long uncurling tongues. Some never eat or drink at all but live only to mate.

SHAFIE BIN AHMAD—III.

"These are genuine antiques and you won't find them cheaper anywhere—we get them direct from the manufacturer."

It's easy to lie with a straight face, but it's nicer to lie with a curved body.

"The passinate are like men standing on their heads; they see all things the wrong way" — Plato.

INSECT COLLECTION

A fascinating and Inexaustible Hobby

By NIK YUSSOF BIN ISMAIL—III.

It is generally considered that a skilled person or a qualified entomologist is needed to make a collection of insects. This is not so as any person who has some interest in the nature study pertaining to insects can make a start with only a few simple and inexpensive implements. Mounting equipment and supplies, storage boxes for insects. and a few reference books will no doubt require some monetry outlay but the amount will not be great.

Like a phiatelist he may start for the fun of it, for the joy found in the endless variety of forms, colours (as usually shown by the butterflies and moths), behaviours (e.g. that of ant and bees), and the universality of the distribution of insects—the number of species exceed of the whole of the animal kingdom. He may keep butterflies in glass topped boxes to display them or to decorate his house.

As has already been mentioned the equipments used in collecting insects are simple and inexpensive. The average collector usually need a few things: net killing bottles, tweezers, scissors, small brushes, insect pins, store boxes and setting boards. Most of these can be made by the collector himself.

Net:

The insect net is a cloth hung from a framework in the form of a loop attach to a handle. For general purposes, the net should have a loop twelve inches in diameter with a bag of fine netting cloth. The bag is topped with two inches of stout cloth to bear the wear of the frame. The bag should be tapering towards the closed end but not to a point. It should be long enough so that the tip may be flipped over the sim of the loop to form a pocket so as to prevent the imprisoned insects from escaping. The loop should be of light weight metal or ratton and the handle of bamboo or wood the whole length of frame measures about four feet six inches.

Killing Bottle:

A killing bottle should have a wide mouth. The collector should have bottle of various sizes. For the large bottle an empty pickle jar will do while for the smaller ones test tubes or medicine bottles are suitable.

Grasshoppers, bettles, butterflies and the like may be killed in the large bottles, while as usual the smaller insects are killed in the test.

Killing agents commonly used are chloroform and ethyl acetate. A wad of cotton wool soaked into the substance and placed at the bottom of the bottle suffices and discs of blotting paper used are calcium cyacan be placed on top.

Other killing agents used are calcium cyanide, potassium, cyanide and sodium cyanide. But these cyanides are deadly poison and should be handle with great care.

The above mentioned chemicals can be obtained from any chemist shop or pharmacy.

Tweezers, Brushes and Pins:

An assortment of tweezers or small forceps, small brushes and insect pins should be always available as an aid in collecting handling specimens. A few camel hair brushes sizes 0 to 2 are hands for handling insects that might be crushed if handled with tweezers. The brushes are first wetted with water or preservative so that the small insects will stick to it. Insects pins are used for mounting most of the insects, as ordinary pins are too thick and blunt.

Setting Board and Store Boxes:

To avoid the handling of the killed insects, they should NOT be left in the bottle for too long a time. They should be ting board immediately with their wings and legs arranged in the required posi tion permanently. The setting board with the insects are placed in a safe room to dry.

The collector should have several setting board of various sizes to suit the insects.

The board can be layers of cork and plywood. (as illustrated in fig. 3).

After the insects are dried on the setting board, they are trans fered into air tight store boxes. For ornamental purposes glass topped boxes are suitable.

Naphthalene, in the form of the ordinary moth ball or flakes may placed in the box as a pest repellent, but it does not serve its purpose once the pests have gained access onto the collection. In such cases, paracholorobenzene, as a fumigant, may be used to kill the pests.

Creosote may be used to prevent the growth of mould.

Pinning the Specimens:

Medium and large insects, moths, butterflies, and dragonflies should be pinned through the middle lineof the thorax and at the thickest point. Beetles and stinks bugs should be pinned near the base of the right wing cover and through the scutellum, respectively.

The height of the specimen on the pin will depend on the size of the insect. There should be enough room at the top of the pin so that the pin could be held without touching the specimen, but on the other hand, the specimen should not be too low so as to make labelling difficult. The normal procedure is to place the specimen about one third of the length of the pin from the pin head.

In making the necessary arrangement of the various parts of the insects on the setting board it is important to see that the varicus parts concerned are thoroughly relaxed, if otherwise the delicate parts will be damaged. The pin must be straight and the body of

the insects placed in the grooved of the correct size in the setting board. The wings are then spread with the aid of pins. The hind margin of the forewing should be at right angle to the body of the insect; the front margin of the hind wing being placed just under the hind margin of the forewing. Strip of papers are placed across the wing. The wings are thus kept in position by pinning the ends of the strip of papers.

Small insects that cannot be pinned directly through the body should be glued and mounted on small card-points.

Specimens should be lert on the spreading board until they are completely dry. Large insects like butterflies and moths take about two to three weeks to dry while small insects like beetles will dry in a shorter time.

Insects should be shored in pest proof boxes. To make this more spectacular and interesting they should be labeled with (a) place of capture (b) the date of collection (c) other informations regarding the insects such as their technical names etc.

Playground of Insects:

Insects are so numerous that they are found everywhere. Butterflies, moths, beetles and pests like grasshoppers, aphids, lady birds and mealy begs are to be found in almost in every garden. Paths, clearing, and streams in the jungle are the best collecting grounds for some species of butterflies.

Many insects are nocternal in habit. These insects can be caught at night when they swarm around street lamps etc.

"To reach our highest potential
we must begin by accepting ourselves
as we are and not as someone
expects or desires us to be."

"No man ever became great
or good except thro' many and great
mistakes."

VALENTINE DISPAIR

By J. B. CHAN—III

Dear . . . . .

Justice forbids me to seal things in my own way. Yesterday was Saint Valentine's Day. The day before I sent you a card with dedications also written in my heart. In the afternoon I expected to see you, and in the evening I wished (because it was impossible I know), you would call. I soon knew that my hopes were futile hopes. My waiting was in vain. It is immodest to tell you that I expected at least a thank you note. Valentine's Day came. I woke up from very swollen and misty eyes from a very bad dream. I went to school with my head in my heart. I desired so much to see you on that day. That was our day, Lover's Day.

I could do nothing but wish and burn my thoughts in hopes. The morning was done. Then came the afternoon—a dispairing one. Every time the phone rang your name also rang in my ears. Many times I ran for it and to my disappointment they were not fro me from you. The afternoon almost waned. I had not given up hope. It took the bravest of me to call you. It was your father who answered—telling me that you were in school. I resolved to go to the church where we usually met. You were not there.

I went home and asked for my mails. Yes—somebody remembered me, the one I did not expect to hear from. I ate no meals for I was upset—very upset. I lay tossing in my bed annihilating distance, time, and doubts, seeking my beloved. I tried to console myself by going to a movie so that I would forget this misery.

Then at last I found my joy. I saw you. You per adventure did not see me. Neither did she. I was already contented to see you even with another girl in your arms. That did not matter at the moment. Why did we have to meet here? It was fate that brought me drifting there and I had no way out.

You know I'd like to meet her someday. Yes, I know she is the one you have been talking about all the time. You taught me to believe that she is your cousin, and that there are no strings attached whatsoever. And I believed you.

You are blameless. Men are born to forget women who always remember them. Incidentally if intensionally, you belong to that group. Am I mad at you? No—forheaven's sake, I'm not! Have I ever been?

That night I was lonely—sitting alone and bathing myself with the silver moonbeams strained by the accasia tree leaves. I looked up and emptied my heart to the moon. My heartbeats were heartaches and every word—a relief, when I imagined your blushing eyes when ours meet. I was checked with bitterness when you waved your hands to me, then drove away with her. I envy you for you really can bear poise amidst adversities. that is manly and admire you

for it. So, congratulations. The winds have blown colder, the tide had ebbed out and the moon's drooping eyes now have lost its luster. Feeling like a coward I walked to and fro—trying to escape from the excruciating thought that went racing in the arena of my mind. Yet, strangely, I seem to welcome them. Two years ago . . . . . no, too long. Memories haunted me when we first moulded love, dreams, trust, confidence, faithfulness into our being. But then like a gypsy I was already aware of the rain clouds even on sunny days. That is my consolation Dispair will not drag me down to the core for I am already hard of it. But instinctively I am worn out. Our affair was sweet to recall yet painful to remember. The happy moments now dripped with stings. Unwanted sad thoughts came and went. In my deep musing the glitter of your diamond ring blinded my eyes which had known no tears before. On then did I cast aside thoughts and feelings that I used to cherish before.

Tommorow—if then I will live to see the bright sun of the morrows I'll come to meet you to talk things over. But if you can see me no more, don't think bad of it. I must have gone far away for I do not want to bring back live coals to dying embers. If I do it, it's for your own good. I will return your ring. And you must give it to the woman who eventually must own it. Away—there I will live of my own . . . . as I had none before.

This time I will not hear your explanation any longer. Always you find your way through them. It is obvious and what is there to say? I'll be seeing you in the years to come—positively a score hence. By then my dead dreams have already resurrected . So go now my dear—once. I have sold you out at the price of my joy. While I too shall pave my way and cast and kick out stones that come along my dark and thorny path where you lead my steps to.

'tis I,

Erla.

Adapted from the "Quill" of SWUP by John Bob.

"The way to draw the best out of
Others is to give them encouragement
Not by way of flattery but by sincere praise."

MY LOVE—ALL RUBBISH

(Being a philosophical yarn of the Freshman to his Seniors.)

By JOHN BOPE—III.

All rubbish! That's the whole trouble. Maybe what I am going to say on is all rubbish too. But, please, have patience. Read on and see what this cracko has got to say.

Well, actually I haven't much to say. Only a little that I know of. Now, what is it? Be out with it, man. Oh, all right, alright, Joe, here it comes. It's all about (shh . . h) LOVE and LOVERS' TALK.

Now that I have mentioned it, even before I continue further, I have a feeling that some 'authorities' are already pointing accusing fingers at me, quering, "Who the devil is he? Who does he think he is, anyway—trying to talk of love, as if he were a great Don Juan or Romeo!" And those who know me by sight, I sense, would be commenting, "Ha, this fatlum talking about such a wounderful thing like love. Look at his all-round face and barrel-shapped body! Wonder if he's ever known a girl in his life?"

To those quick critics, I would appeal, "Give me a chance. I am not actually going to *talk* as so much as to *ask* about love. So, please let me continue my little yarn, O. K?"

To begin with (I've not really begun on the subject yet, you know), let me half introduce meself. I go by the name of Atomic bay alias Clark Gabble alias John Bope. I am enviously gaurding and improving especially the middle with plenty of eggs, my Vital Statistics of 40-40-40. I've just turned major with a live-weight of 182 lbs. only. (Not much. Anyway, it does not hinder my romantic activities the least bit). But, I have already had 4 years of love-life, having fallen in and out of love, seriously that is, at least twice, I think. Of course, threre must have been inumerable number of not-so-serious affairs, so to say.

With that short introduction, I think I shall get down to brass tracks. What IS love? Now, I'M not talking about paternal or maternal love. Neither am I thinking about love of animals (like people of the R.S.P.C.A.) nor of abstract things. I'm refering to the REAL thing. The love between a boy and a girl—between a man and a woman. Though I profess to have 4 years (it's a long time, man) of experience of loving and being loved or so I believe, behind me, I am still not sure what this invisible thing we call love, is, Or, the radio, the newspapers, and everybody seem to allude to as love.

Was it love for a lady at the school that made me enrolled as a teacher in the same school, and

resigning from the profession after a few months, when the affair came to an unexpected end? Oh, I can recall, those were the days of bliss, the days of greatest expectations in life, the days which I had hoped would never end. But then, they were not to last. What a disappointment in life for me then!

Still I lived on. From the school, I switched to the Stock Exchange. Life there was hustle and bustle. But there was always time for short-talk. There I met another Sweet-little-thing. She was just 18. What beauty! At that time I had no knowledge of Extension yet, Nevertheless I got on terribly well with the 'thing'. In fact, almost too well! Movies, picnics, parties, dances and a host of other things young people 'in love' always dream of. Day in and day out we talked of love, of life, of the stars and the moon and even the bees. There was no worry, no heart-ache, and no frustration. I told her I loved her and she uttered the same for the umpteenth time to me that day. We told each other the world was never going to end for us, two.

It did not—until, of course, when I started to grow 'old'. Come to think of it, I am wondering if it was because of my love for her that made me stay so long at the Stock Exchange instead of going abroad for further studies. Life was fine then. I was a man in love. I did not want to leave her. So, I stayed on, until, as I said, I began to grow 'old' and to think of other things other than love.

I thought of other things. But I did not forget HER. As time went on, love began to appear to me to be something not 'so real'. And found myself amidst the educated tillers of the land! I wouldn't say I dislike my new environments. More and more I thought, and more and more I discovered, and older and older and rounder and rounder I became. All this time I was intent on knowing what it is like to think of love—as an outsider.

First, of course, I had to dissociate or disentangle myself from all current'love tendencies! That's not an easy matter, man. It took me time and a little heart-ache, too. Fortunately or unfortunately for me, I succeeded wounderfully; so much so that I can now discuss love without any bias. From then on, I began to analyse and to account for the many 'wonderful' times my girlfriend had together when we were young. I began to perceive the nonsensical things that lovers used to say to each other, even as the lovers themselves can see only sense in what they say.

Now, let's go through the analysis. Was I really in love, I mean in the actual accepted sense of the word? I wouldn't know for sure at this moment. I had no cause to believe otherwise then. In fact we were so sure about ourselves that we nearly got married (I am referring to the Sweet-young-Thing at the Stock Exchange here.) What in actual fact, made me love her and her me? Well, to tell you the truth, I don't know! Maybe, it wasn't really love. It would have been something else.

Never mind that. Let's proceed with the analysis. What did I say to my girlfriend and she to me, naturally, in our seemingly perpetual days of happiness? What was said? And what made us say those things? Things which appear to me so stupid, so meaningless, and so ridiculous, NOW??? As far as I can recall I said very, very little that was of any sense to her. And she to me? Oh, let's better not go into further details. Else, we might come to the logical conclusion that lovers are by way of their conversations, lunatics!! (I mean no offence, though.)

In the foregoing I have generalised on my last girlfriend. There was not much difference from the others. Whenever we got together floating in the sky with love, we t a l k e d RUBBISH—a b s o l u t e Rubbish!!!

So there you are, folks. That's the tale of my love. I'll tell you another yarn the next time we meet. Till then, an reviour.

"A slip of the foot you may soon recover, but a slip of the tongue you may never get over."

"Harrassed not by trouble, for trouble is the next best thing to enjoyment; there is no fate in the world so horrible as to have no share in either its joy or its sorrow."

EDUCATIONAL TOUR TO INDONESIA

By ROSLY BIN KASSIM—II.

The Muslim Students' Union of the College of Agriculture, Serdang had successfully arranged an Educational Tour to Indonesia during the final term vacation in April, 1962. The trip was solely educational and particular attention was given to Agriculture.

When the preparation of trip was still in progress, fifteen students were listed to participate, but later eight of them were chosen by the Federal Government to visit Medan for three weeks, the expenditure of which was incurred and subsidised by the Government.

During the visit, we were the guests of the Malayan Students and the Malayan Embassy at Djakarta. The visit was conducted by one of the Malayan Students in Djakarta. The places we visited were either of historical or of Agricultural interests such as Bandong, Bogor, Djakarta and Djoddjakarta. Due to the shortage of time we were unable to visit some other interesting places like Surabaya and Bali.

The journey started from Singapore at about 5.45 p.m. on the 15th April, 1962 and reached Djakarta at 7.15 p.m. On reaching the Airport, we were welcomed by the Malayan Students and also a Malayan Student from University of Malaya who arrived there a few days earlier. We stayed at the Overseas Students' Hostel and also at the house of the Malayan Ambassador's Staff in Djakarta. There are not many places of Agricultural interest at Djakarta and so we only visited the site of the coming Asian Games and the new stadium. We also attended the rehearsal for 'Tari Pendek'—a Balianese Dance at the Olaraga Stadium. President Soekarno was present and he gave a long and interesting speech. We also had the opportunity to visit the town including some of the historical and interesting places.

From Djakarta we went to Djogdjakarta. The journey was no doubt a strenous one, but each and every one of us enjoyed it. The scenery on the way was beautiful and for a very extensive area there was hardly any hilly land. There was not a piece of land that was not cultivated and as far as we could see, there were nothing else except padi fields with houses scattered all over the area. Unlike Malaya, the kampong houses are of tiled roof instead of attap.

At Djogdjakarta, we visited not only places of Agricultural Interest, but also places of historical interest such as the Chandi Parabanan and Chandi Borobodor. These places are famous for the temples which were built about a thousand years ago and these are the places that tourist could not afford to miss for they are really places of International fame.

Beside visiting the above places we also had the opportunity to visit

a padi field about ten miles away from the town and about two miles away from the Gunong Berapi—a volcano. The soil in the area is very fertile and on it padi is planted. The farmers still use human labour and animal power. The padi field according to one of the farmers and also from what we could see, are cultivated throughout the year. For instant, in one area the padi was just planted and in another it was nearing harvesting period. There were also places where the area had just been ploughed by means of plough drawn by buffallo. From these we could deduce that the farmers are working all the year round. During our short stay at Djogdjakarta we put up at Asrama Putera Malaya.

From Djogdjarkarta we proceeded to Bandong—a clean and beautiful town. It is situated on the top of a hill and is a well known holiday resort.

The trip to Bandong was interesting and on the way we saw facinating sceneries. Unlike Djogdjarkarta and Djakarta, Bandong is a very mountainous place and the temperature here is almost as low as Frasers' Hill in Malaya. The most interesting thing that we could get is the padi fields where even the hilly areas are cultivated by terracing. The cool temperature of Bandong and its Suburbs is most ideal for planting vegetables. We were also lucky to see some of the cinchona plantations.

I am glad to mention here that during our stay in Bandong we were introduced to the Thahir, the Ketua Front Pemuda (Leader of the Youth Organisation in Indonesia) and angot DPRGGRI (Member of Parliament). We were greatful to him and his family for their hospitality.

From Bandong we returned to Djakarta and later proceeded to Bogor where we stayed for two days. While in Bogor, we were the guests of the Indonesia Universities' Students from the Faculties of Agricultural Science and Fishery.

On the first day, we visited the Kebon Raya in which thousands of species of plants were grown. Some of the flowers, like the cacti and orchids are very rare and seldom found in Malaya. Every visitor to the Kebon Raya was charged a small sum of money for the entrance fee. We also visited the Universities and the Government Agricultural Experimental Station where various research are carried out.

At the Veterinary Science Department, we were shown the various sections and departments like the pathological section, artificial insimenation section and the parasites study section. We were also shown the places where they rear animals for research purposes. Explanations were given both in English and Indonesian by the Lecturers concerned.

From the Veterinary Science Department we departed to the Government Agricultural Experimental Station. At the Padi Research Station, explanations

were given by the various lecturers as regards their research works. It is good to mention here that the research is also based on padi grown in other parts of the world, such as the Russian and the American padi.

At the faculty of Agriculture of University Indonesia we had a discussion concerning Agriculture with one of the members of the Senate. He suggested that there should be an exchange of students especially agricultural students between Indonesia and Malaya. This is of course a good suggestion if it is agreeable to both sides. After we returned to Djakarta and stayed there for another three days during which we were able to visit Museum Negara and did some shopping around.

To mark the end of our tour, we were invited to a farewell dinner by members of the Malayan Embassy Staff.

VISIT BY THAI STUDENTS

On the 2nd October 1962, four students from the Chulalangkorn University made a goodwill visit to the Federation of Malaya. They were the guest of the Malayan University Students' Union in Kuala Lumpur.

The College of Agriculture Students' Union had the honour of welcoming the delegation on the 4th of October 1962. The delegation was headed by Mr. Pechnoi B. Cheep. President of the Chulalangkorn University Students' Union. Other members of the delegation were Miss Sumitra Angwanakul, Secretary General of CUSU, Miss S. Bruminhen and Miss Thounkul. Along with them were two members of the American Peace Corp in Malaya, and executive members of the Persatuan Kebangsaan Pelajar2 Persekutuan Tanah Melayu.

The delegation was conducted around the College Campus by the Councillors of the College of Agriculture Students' Union immediately after their arrival. Later they were entertained in the Common Room. Before the party left the Campus, the Chief of the delegate, Mr. Pechnoi B. Cheep presented to the Union a pennant of Chulalangkorn University to commemorate their visit.

The Publications Committee, on behalf of the Union thanks the delegation for their visit to the College.

AGRICULTURE — A CHALLENGE TO WOMEN

(MISS HOPE LAU—I)

The cultivation of fresh ideas and new hopes of challenge for equal rights and status among men and women has left this unerring world, a world greatly stupefied. Yes! It is a mere wasteless effort to say "I fight for my rights" if you are not prepared to accept the trial and challenge headed to you. But does any girl ever look to one angle for one moment what Agriculture means to her? Therefore if there is anything worth mentioning for girls, there is nothing more worthwhile than to voice the acception of Agriculture as a challenge.

The history in the study and wake of Agriculture in Malaya has always been a man's world until the year 1959, when the first recruitment of three girls as a maiden trial in the College of Agriculture started. Whether this is a success or failure in breeding feminine Agriculturalists is still left to be seen, but there is always a point that every girl must not overlook "Agriculture is a 'no go' for girls!" and if you are not prepared to play the first fiddle to throw down the gauntlet for the future generations, when will the goal of achievement start?

The age of Chivalry has long been passed and buried and the question of to be what we are and to become what we are capable of becoming is the only end of life. If there is no beginning, there is no ending, but for every beginning self-toleration, perseverence, patience and determiniation are the virtues of success.

The study of Agriculture has always been associated with God's Little Own Acre". The appreciation of nature's most wondrous creation, the complex structure of the soil and the art and techniques in the usage of various mechanisms are the essentials that are required to be known. If you are prepared to undertake to learn something new, to exhibit your persistency in your capability physically as well as mentally with the superior opposites, your call for equality has been strengthened by a point. Agriculture is not as terrifying as any girl would imagine it to be and as a student here, I dare say Agriculture can be accepted as a Challenge.

There is always an urgent need for good Agriculturalists, let alone the male. The prospect of having a promising future is left to you to establish and if you are the one who is prepared to take the initiative to accept the Challenge, to reflect to others the strong determination that radiates within you and to lay the first foundation stone as an intrepid pioneer, Agriculture will and always will be the light of success for women in the long run.

TO MEET, TO KNOW AND TO PART

By SHAHABUDDIN BIN SHAFIE

It was three years ago with happiness, fear and excitement that they left homes and parents to live new life; life in a new environment; a life that is totally different from what they had experienced—life in a College. But now the time has come; time of sadness and solemnity; time for them to leave the College for ever. They are going into the world with fresh hopes and determination to help their people. Those who are still in the College will have their turn and these places left vacant by the graduates will be filled by new faces. Students leave and students come. Thus is the cycle from year to year.

When they first came to this College three years ago they met a great variety of boys; boys from different places; of different creeds and races and of different characters. Many are noisy; a few are quite, while others are neither too quiet nor too noisy but there is one thing that is common in them all, that is, all of them are friendly. And with these students who came into the College first and likewise with those who came after them, they had lived together side by side and hand in hand regarding all as brothers.

And for three years they live here together with their fellow livestudents. Together they go to work, together they eat, together they sleep; together they play and together too they suffer and together they enjoy College life. Through this "living" together" they had established with their fellow students a strong bond of friendship; so strong that no superhuman effort or nothing can unite or loosen the friendship except the i nevitable factor—death. They live here like brothers. But alas.....

At last the time has come; time of sadness and solemnity; time for them to leave their beloved old College, their lecturers and their junior friends and never to come again. What unhappiness lies in their heart of hearths, what tears they may shed on this departing day we know not. But they have got to go out from their beloved College into the world to fulfil the various duties which are expected of them—to lear their nation and to teach the people, people whom they have never met, nor understood with what knowledge in agriculture they have.

It is doubtless that many of them in their effort to help their people and nation will meet with many difficulties and even failure which is never thought of. May God help them. We who are still in the College hope that they will do their utmost to encounter and overcome what difficulties they may come across. These are the people we admire, they are the leaders of the country, and indirectly the maintenaners of human life.

ABC OF FRUIT TREE PRUNING

(By CHRISTOPHER TEO—I)

Pruning as a cultural practice is still new and foreign to our peasant farmers. The main reason accounted to such an attitude is ignorance resulting in the fear of fatality being caused to trees. These farmers fail to realise the advantages of pruning in the long run.

Advantages of Pruning.

In general, pruning modifies the growth of the plant, thus adjusting it to the conditions that suit the environment and tastes of a farmer. In some plants, very little pruning is needed to achieve this purpose while others need heavy pruning.

Pruning also maintains the health of the plant. This is done by cutting out all dead, diseased or injured parts of the tree. If the diseased or injured ones are allowed to stay on the tree, it is likely that infection will spread to other healthy parts of the plant. Crossing branches should be removed to prevent 'rubbing', to increase light penetration and air circulation. Pruning off weak, worn-out or crowded branches also gives rise to better quality fruit-bearing wood.

Pruning reduces large trees to small, easily managed and suitable sizes, eg. durian. If these fruit trees are allowed to grow into their ordinary sizes, there is also the increased difficulty in harvesting.

Pruning improves quality of yield. In some fiuit trees especially citrus, more branches and shoots are given off then they can come into successful fruition. Thus, the pruning of such branches is obviously beneficial.

Pruning tools.

One important rule we must observe with regard to tools is that they should be sharp and clean—this would give a clean cut with minimum bruising. Bacteria, fungi and other diseases easily gain entry into the plants if wounds and bruises are left. In addition, a clean cut will hasten healing of the wound. Never twist or turn the tool while making a cut or else much destruction is made.

In this college, secateurs are commonly used for pruning. However, saws and parangs can also be used in cutting bigger branches.

Wound dressings should be applied to the cut surface if more than 2 cm. in diameter. This wound dressing prevents attack by diseases mainly fungi.

How to Prune.

There are 3 steps in fruit tree pruning, namely,

(i) *Formative pruning.*—This is done at the earliest opportunity when pruning for frame-work is easiest. Usually formative purning is done immediate after transplanting into the field. This

is the stage where the shape and size of the tree are determined. In Rambutans for example, a clear stem of about 3 feet above the ground is maintained. Branching is allowed after this height to ensure proper aeration and ventilation below the foliage. 4-5 main branches are then allowed to remain. Excess branches and shoots are cut off.

(ii) *Regulative Pruning.*—This is the pruning done after the formative pruning and when the trees have established themselves. This consists mainly of maintaining the frame-work and shape of the plants. Water-shoots should always be pruned off. Regulative pruning is necessary after a harvest. This is especially so in rambutans, which have not been properly harvested. It removes the remaining fruit-bearing stalk or "crows' feet" which are hindrance to the plants.

(iii) *Re-habilative pruning*—This is done in trees which have been neglected and have not been pruned. Re-habilative pruning requires severe pruning and its extent is dependent on various conditions. However this is more important in the re-habilitation of budwood nurseries.

The actual pruning should be done at the right time preferably after harvest. The cut should be made above an outward pointing bud. This is necessary to prevent branches growing inwards causing malformations of the branches. A perfectly clean cut about ⅛" above the bud and at an angle parallel to it is optimum.

Thus with some experience, pruning should not be too difficult a task. The precaution to take is that pruning should not be for the sake of pruning. It should always be pruned for some reason or other.

"Intelligence alone is not the whole thing in success. Moderate intelligence with high enthusiasm will often succeed where high intelligence with low enthusiasm fails."

"Enthusiasm alone may turn failure into success."

PROJECT WORK—EXPERIMENT ONE

By AHMAD BIN OTHMAN—III

Objective

To observe the effect of different levels of 4:1:2 mixture on the yield of guinea grass.

Introduction

The desirability of fodder grass has long been recognised in Malaya. From comparative tests conducted at the F. E. S. Serdang in 1924, it was known that guinea grass was the most desirable among the many fodder grasses found in Malaya. The yield of guinea grass was 40 tons per acre per annum on flat virgin soil.

Experimental Procedure

Soil & History of the Area

PH of soil is 6.8. Age of guinea grass—2½ months old. Prior to planting of guinea grass a basal dressing consisting of the following was given:

(a) Cow-dung (1 lb. sq. ft.)
(b) CIRP (6 oz. per sq. ft.)

Treatment

Fertilizer used—4:1:2 mixture.
This mixture comprises of the following:

4 parts of Sulphate of Ammonia
1 part of Christmas Island Rock Phosphate
2 part of Muriate of Potash.

Layout

TABLE I

(Distribution of treatments)

Sub-plot I—1½ oz. per running yard
Sub-plot II—2 oz. per running yard
Sub-plot III—½ oz. per runinng yard
Sub-plot IV—Control
Sub-plot V—1 oz. per running yard.

Plot A

V
IV
III
II
I

25′

15′

Plot B

15′

Sub-plot V—2 oz. per running yard	V
Sub-plot IV—1 oz. per running yard	IV
Sub-plot III—1½ oz. per running yarc	III
Sub-plot II—Control	II
Sub-plot I—½ oz. per running yard	I

25′

Planting Distance employed—3½′×1′ giving a total number of 25 stools in each sub-plot.

The rates of application as illustrated above are used once in a fortnight, applied soon after cutting.

The plots chosen are on two different strips of soil so as to reduce any heterogenity effects. Five rows of guinea grass are grown in each plot.

General Management

Occasional weeding is carried out by running a rotary hoe between the rows. Weeds growing along the rows of guinea grass are eradicated by tajak and hand-pulling. The grass is cut once in a fortnight low to the ground.

After cutting, different levels of mixture 4:1:2 is applied as shown in Table I. In broadcasting the mixture around and along the rows, great care is taken to ensure that each row in each sub-plot receives the same amount of fertilizer as the other.

Chivalry.

Chivalry has changed from the days of Sir Walter Releigh, but contrary to rumour, it has'nt died out altogether, a man will still lay his coat at the feet of a pretty girl; the difference is that nowadays it's intended to keep her back from getting dirty.

TABLE II

Average yields of guinea grass cut at fortnightly intervals under different rates of fertilizer application

Rate	1st cutting				2nd cutting				3rd cutting				4th cutting			
	Wet		Dry		Wet		Dry		Wet		Dry		Wet		Dry	
	lb.	oz.	lb.	oz.	lb.	oz.	lb.	-oz.	lb.	oz.	lb.	-oz.	lb.	oz.	lb.	oz.
Control	3	12	1	13	6	10	3	0	6	7	2	8	6	8	2	4
½ oz.	4	3	1	14	6	3	2	8	6	15	2	14	7	0	3	5
1 oz.	4	1	2	4	7	3	3	7	7	15	3	2	7	12	3	12
1½ oz.	4	12	2	0	7	12	3	14	8	3	3	11	8	5	3	14
2 oz.	4	8	1	15	7	3	3	10	7	15	3	5	7	10	3	8

From the results in Table II the most striking result is obtained at the application rate of 1½ oz/running yard. The table also shows that there is a different degree of response to the different levels of application of 4:1:2 mixture.

Conclusion

From the results of the trial, the following conclusions are drawn.

(a) Yield of guinea grass is increased with successive increase in the fertilizer mixture applied.

(b) But, the highest yield is obtained at application rate of 1½ oz/running yard. The table also shows that there is a different degree of response to the different levels of application of 4:1:2 mixture.

The greatest benefit one friend can confer upon another is to guide and excite and elevate his virtues.

SAMMUEL JOHNSON.

EXPERIMENT—II

Objective

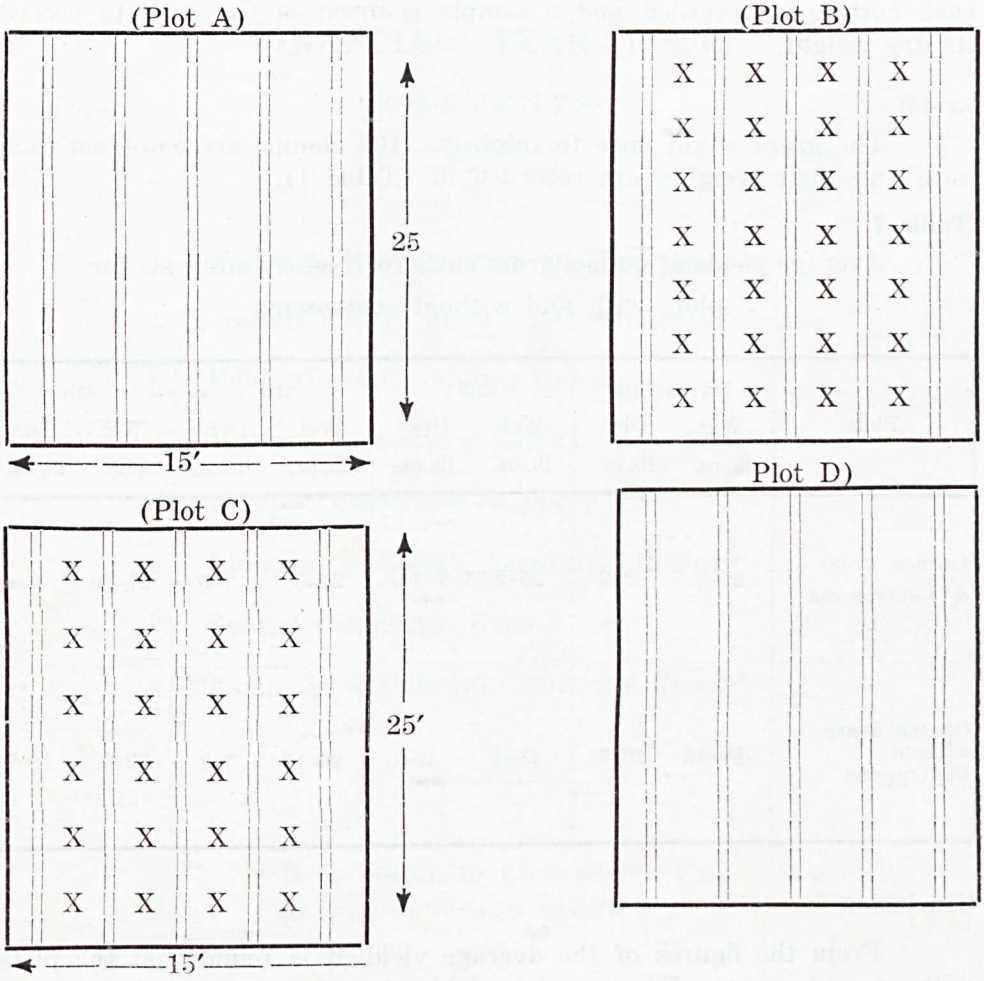
To observe the effect of centrosema on the yield of guinea grass.

Introduction

The idea of interplanting guinea grass with centrosema is still new in Malaya. The root nodules of centrosema harbour bacteria which can convert atmospheric nitrogen to a form available to plants. Rhizobium can fix as much as 210 lb. nitroben per acre per year. By interplanting legumious cover with rubber, the yield of rubber increases considerably. Thus, similar expectation is anticipated in the case of centrosema grown with Panicum Maximum.

Experimental Method

The layout of the plots is done as shown below:



Guinea grass ————————

Centrosema X X X X X

Planting Distance—3½′ x 1′.

The stand is about 2½ months old when the experiment is carried out. Basal dressing is given as follows:

(a) Cowdung (1 lb. per sq. ft.)

(b) CIRP (6 oz. per running yd.)

(c) Magnesium limestone (8 oz. per running yd.)

Two of the plots are grown with centrosema while the other two are not. Centrosema is planted from seeds, one week after the planting of grass. The centrosema seeds are sown in rows between the guinea grass. During the trial no weeding is done. All the four plots are given an application of CIRP at 3 oz. per running yard.

The grass is cut once in a fortnight by a sickle. The weight after each cutting is recorded and a sample is dried in the oven to record its dry weight.

Result

The grass is cut once fortnightly. 108 clumps are cut from each plot, and their weights are recorded in (Table I).

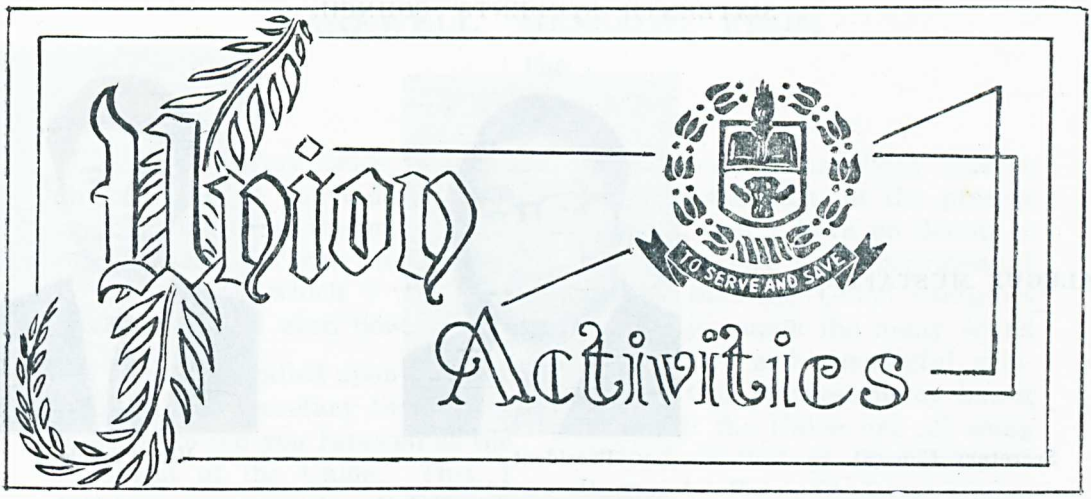
Table I

Average yields of guinea grass cut a fortnightly intervals for plots with and without centrosema

Plots	1st cutting		2nd		3rd		4th	
	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Guinea grass & Centrosema	27–5	9–2	25–2	7–12	26–5	7–0	27–10	9–8
Guinea grass without Centrosema	29–12	10–8	28–4	9–8	26–10	7–2	30–0	10–7

Conclusion

From the figures of the average yield, it is found that the plots without centrosema gives a better yield. In other words, grass grown with Centrosema does not make any progress in the yield.



FINANCIAL YEAR—1962/63

CONTENTS

It is easier to give advice than to bear sufferings manfully.

MALEGUE MUSTAFFA

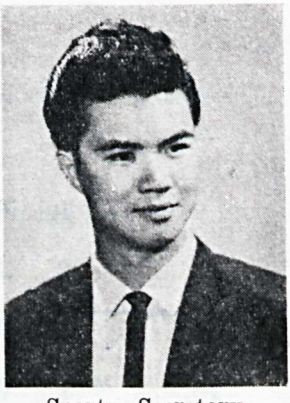
Secretary General

President

Vice-President

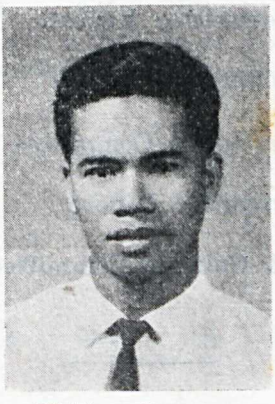
Assistant Secretary General

Finance Secretary



Sports Secretary

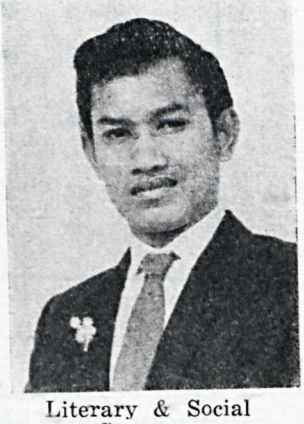
Muslim Union Representative



Welfare Secretary

ISMAIL SHAMSUDIN

Publications Secretary



Literary & Social Secretary

FAREWELL MESSAGE FROM the PRESIDENT

As I sit in my office to write this message to you today, I cannot help, but recall the many facets of my association with the Union—a Union with which I still feel closely attached even now.

I have been called upon by your Publications Secretary to write a message to bid you farewell as the President of the Union. This, I feel very happy to do. But it will not be only in that capacity that I am about to say these few words in parting with you. What I say would be the sum total of what I would normally say as an ordinary member, as a councillor, and also as the executive head of the Union. It is said in all sincerity and, I hope, received by you all in the spirit for which it was meant.

The College of Agriculture is now experiencing a period of active improvements. The College of Agriculture Students' Union must, likewise, progress further with considerable speed—not that it had been static in the past. Since my enrolment with the Union some three years ago, I have known it to be a Student Organisation in every sense of the word. As an association it can claim to have served all its members very well; especially in the fields of sports, welfare, and cultural activities. It has sought for and obtained many facilities for the convenience of its members. It has protected and preserved the rights of expression, action, and association of all its members since its inception.

All these, it has been able to fulfill in the past, at the present moment, and I have no doubt, in the future as well—provided of course, that the Union continues to function upon the many sound constructive and purposeful principles. One of these many bases, on which the Union has all along thrived, is that of the 'Unity of Purpose'. For a Students' Union, or for that matter, any other organisation, to succeed in its aims and objects there must be absolute solidarity among its members. Everything the Union does must be done with an absolute oneness. It is with considerable regrets that I come to know that 'who cares' and 'that is not my business' attitudes still prevail among a small section of CASU members. The Executive must, of necessity, find ways and means, to rid this section of the membership of such unworthy notions. In this connection I wish the Union every success.

So much having been said of the Union, let me now turn to something which concerns our purpose in the College and our future profession. We have all come to this Seat of Higher Learning for the express purpose of being trained for the job that we have to carry out for our livelihood on our graduation. Thus, not forsaking other extra-curricular activities, we must always bear in mind the objects of our studies in the College. In order not to fail our sponsors, we must not be too lack-

ing in our academics. I do not however, advocate the call for you to be bookworms! Neither do I wish any of you to desire that your name appear in big bold print in the daily papers—headlined such as "LUCY BEATS ALL IN AGRICULTURAL COLLEGE"! For such, my friends, are but empty noises—lasting only while the news is hot—and not actually a true reflection of the factual situation and the contribution of the individual concerned to our country's welfare.

For the 30 members who have just left the Union, on their graduation, the time had already come for them 'to think of what they can do for their country'. For you who have still one or two laps to cover, your turn will come one day. I have every confidence that you will all show the same spirit that has prevailed in all graduates of the College and members of the Union, when you move out into society to mingle with the crowd of the country.

Now, I must bid you all farewell. With all good wishes.

Sgd: J. B. CHAN,
President,
College of Agriculture
Students' Union 1962/63.

NATIONAL UNION FEDERATION STUDENTS (Persatuan Kebangsaan Pelajar2, P.T.M.)

The 5th Annual Conference of the P.K.P.P.T.M. was held at the University of Malaya on the 1st, 2nd and 3rd March 1963. The CASU delegation was as follows:—

1. Rosli bin Kassim (Leader)
2. Ho Dua Thiam
3. Aziz Kadir
4. Maleque' Mustaffa
5. Goh Ah Bah
6. Nga Nguk Sik

The following members of CASU were elected to the Executive Committee of the N.U.F.S. for the year 1963/64.

1. Rosli Kassim .... Social & Cultural Secretary
2. Maleque' Mustaffa .... Press Secretary

ANNUAL REPORT OF THE COLLEGE OF AGRICULTURE STUDENTS' UNION FOR THE FINANCIAL YEAR 1962/63

The Financial Year 1962/63 marks the 16th year of the birth of the College of Agriculture Students' Union—probably making it one of the oldest legally-constituted students' unions in the Federation.

The 16th Students' Council took over the administration of the Union of Friday and Saturday, 17th and 18th July, 1962, after a somewhat smooth Annual General Election.

The following members of the Union have been elected to serve in the Council:

President	....	Inche J. B. Chan
Vice-President	....	Inche Ahmad Othman
Secretary-General	....	Inche Maleque Mustaffa
Asst. Sec. General	....	Inche Loh Wai Choong
Financial Secretary	....	Inche Ibrahim b. Mohd Ghaus
Welfare Secretary	....	Inche Mohd. Isa b. Haji Sulaiman
Sports Secretary	....	Inche Lum Wee Meng
Lit. and Soc. Sec.	....	Inche Abdul Razak b. Abdullah

In accordance with the Constitution, a representative from an affiliated body will sit with Council in all its Meetings. He is the representative from the Muslim Union, Inche Abd. Azizz b.Sk. Kadir.

An additional member of the Council is the Publications Sec. who is appointed by the Council. This year, the post is held by Inche Ismail b. Shamsudin.

Membership

Till 22nd December, 1962, the membership stood 82 including 5 ladies and one honorary membber, Inche Wan Malek Mohd. The present membership is 55. Of these 53 are male members including one honorary membber and 3 female members.

The termination of the Financial Year 1962/63 saw tremendrous changes in the Union as well as the College Administration. This year the final-year students graduated in December, 1962 as opposed to the normal trend of tradition of graduation which is on April. This is abide to the academic terms of the University of Malaya. This unforseen circumstance summoned a Second General Election to take place on 18th January, 1963. The Council so formed shall be named 16th (Continuation) Students' Council which comprises the following:

President	....	Rosli Kassim
Vice-President	....	Ho Dua Tiam
Secretary-General	....	Loh Wai Choong
Asst. Sec. General	....	Wong Non Lin
Financial Secretary	....	Teoh Seng Loong
Welfare Secretary	....	Pawanthe Che Din
Sports Secretary	....	Goh Ah Bah
Lit. and Soc. Sec.	....	Nik Hassan b. Nik Sulaiman

The representative from the Muslim Union is Inche Radzwan Hussein. The post of Publications Secretary, appointed by the Council is held by Inche Ng Kim Foh.

Constitutional Changes

Keeping pace with the mode of change of time amendments were made to the Constitution of the Union at the first General Meeting early this year. The result of the amendments is a Constitution which is not only feasible and legally lawless, but also one which will justify any matters.

General Meetings

Keeping in pace with the Constitution, 2 Ordinary General Meetings will be held each Financial Year. The 1st General Meeting being held on Trurstday, 17th and Friday, 18th July, 1962. 2 Extra-ordinary General Meetings also took place as the course of events necessitated its occurrence. The 2nd Ordinary General Meeting was held on Monday, 11th February, 1963. With the new blood of the 16th (Contituation) Students' Council presiding.

Council Meetings

The Students' Council met in a pattern of irregularity every term to discuss and solve problems pertaining to students' activities and interests. 2 Extra-ordinary Council Meetings also took place as the events compelled.

A memorandum compiled in the National Language on Agricultural Education of this College was despatched to the Ministry of Agriculture and Co-operatives through the Principal.

Students' Maintenance Allowance

This feature is of common place occurrence year after year which seems to make it a malignant disease in every Council. After having gone through unaccountable and repeated discussions and reminders finally, the Ministry of Agriculture and Co-operatives has given a green light to the claims of the Union for an increase in the monthly maintenance allowance. Much of the credit should go to the past and also the present Councils. It is through the marathon and indefatigable struggle that this marvellous achievement has been made. The success owes in no small measure to the confidence of the students towards the Council.

Graduation Dinner

An annual affair of the Union, this year's Dinner was held at Kum Leng Restaurant on 18th

December, 1962. The occasion was to commemorate the graduation of the final-year students of the College. Alumni Association and the President of the Union addressed the congregation.

On Promoting Understanding Among Students

(i) *Visit by delegates of the Chulalongkorn University*

On Oct. 1962, 4 students including 3 ladies of the Chulalongkorn University Students' Union together with the accompance of representatives of the PKPPTM, paid an official visit to the College. The visit was also a goodwill gesture on their part to reciprocate our visit in 1961.

(ii) *Joint visit of Japanese Students of I.S.A. and students from NUAUA*

The above joint visit took place and Saturday, 23rd March, 1963. The Japanese delegation consists of 8 members in which 2 were females. The NUAUS delegation composes of 3 members. The delegations were escorted by EXCO members of the PKPPTM. There was interchanging of news and views among the students. Pennons of the Union were presented to the 2 delegations to commemorate that auspicious occasion.

It is evident that by the free intermingling of students regardless of race, culture and superstitions, much has been achieved in promoting friendship among students.

Sports-Cum-Sightseeing Northern Tour

During the Second Academic Term holidays. The Union organised a Northern Sports Tour. The motives behind that tour were manifold. It was a means of tightening the tie with students all over the Federation by way of games. It is with profound lament to record the case of theft in Taiping. However, with the generous donations by the students, needless to say the tour was a irrefutable success under the guidance of the Sports Secretary.

The 16th Students' Council, acting on behalf of the Union expresses its deepest sense of sincere gratitude and appreciation to:—

The Principal, Mr. G. I. M. Martin, for his unstinted and invaluable advice and indefatigable interests in the activities of the Union.

2. The various Committees for the administration of the Union.

3. The United States Information Service and PKPPTM for the constant supply of informative magazines and pamphalets ect.

4. Respective schools for their Annual Magazines.

However, it is impossible to mention in full, pardon is requested from those whom I have inadvertantly left out.

Retrospect And Prospect

It is glad to note that the Union is built on rocks and not on sand

by the past Councils. The traditions set up will be ensued by the present and (I hope) future Councils. However, the significant aspect is still the reluctance of members to participate wholeheartedly in any activities of the Union. It is my ardent hope that as time creeps, this will be replaced by man of perseverence, determination energy, integrity and zeal; man who are unwilling to diminish dividents for the sake of the Union. The Unions motto, 'To serve and save' should be inculcated in the minds of every member wherever they may be.

Report made by,
LOH WAI CHOONG,
Secretary-General,
16th (Continuation) CASU,
1962!63.

The Kiss of the Sun for pardon,

The Song of the birds for mirth,

You are nearer God's heart in a garden

Than anywhere else on earth.

If you haven't got charity in

Your heart you have the worst

Kind of heart trouble.

Bob Hope.

ANNUAL REPORT OF THE PUBLICATIONS COMMITTEE 1962/63

Due to the early graduation of the third year Students, the 16th Students' Union Council was dissolved at the end of 1962. As a result, a new council, the 16th Students' Union (Continuation) Council was formed at the beginning of February, 1963. Thus, with no exception, all the various committee members of the 16th Student Council, were replaced by new ones.

It is not surprising, therefore, to see two committee photographs appearing in this issue of the Serdang Sun.

Members of the Publication Committee—16th Students Council:—

Chairman (ex-officio)	....	J. B. Chan
Publications Secretary	....	Ismail Shamsuddin
Secretary Agricultural Affairs		Teoh Seng Loon
Editor (English Section)	....	Lam Sang
Editor (Malay Section)	....	Hassan Saidi
News Editors	....	Ooi Cheng Hock &
		Goh Ah Bah
Business Managers	....	Rosli Kassim
		Thomas Ooi
		Ng Kim Foh
Proof Readers	....	Mak Khong Hee
		Zainal Ariffin
Typists	....	Wong Tee Kia
		Yeoh Yee Hong

Members of the present Publications Committee—16th Students (Continuation) Council:—

Chairman (ex-officio)	....	Rosli Kassim
Publications Secretary	....	Ng Kim Foh
Secretary Agricultural Affairs		Chin Swee Joo
Editor (English Section)	....	Ooi Cheng Hock
Editor (Malay Section)	....	Wanteh bt. Musa
News Editors	....	Syed Barkat Ali
Business Managers	....	Thomas Ooi
		Chan Yew Cheong
		Alang Perang Abd. Rahman Zainuddin
		Makeswaran s/o Subramaniam
Proof Readers	....	Aziz Yusof
		Azman Molok
Typists	....	Wong Tee Kia
		Yeoh Yee Hong
Photographer	....	Christopher Teo

Committee Meetings:

Committee meetings were called when necessary. To date, four committee meetings have been held.

The Tembusu

The-year-old termly organ of CASU, the Tembusu, once again made its appearance in the first term of the Academic Year 1962/63. We must admit that a better organ would have been produced, had we taken more pains to proof-read the articles before sending them to the Printers. However, we shall try our best to see that no such mistake will be committed in the future publications.

We regret very much that due to insufficient funds at our disposal, we were unable to materialise the 2nd and 3rd Term issues of the Tembusu.

The Serdang Sun will be ready soon. This issue will see some changes especially in the reports by various secretaries, and the omission of the minor games photographs. We hope this time the reports will no longer be boring to the Students.

The omission of minor games photographs does not in the least indicate the non-existence of such games here. Minor games like table-tennis, volley-ball, basketballs, badminton, tennis etc., are still actively being participated by members.

Publications Secretary.

"The heights by great men reached and kept

Were not attained by sudden flight,

But they, while their companions slept,

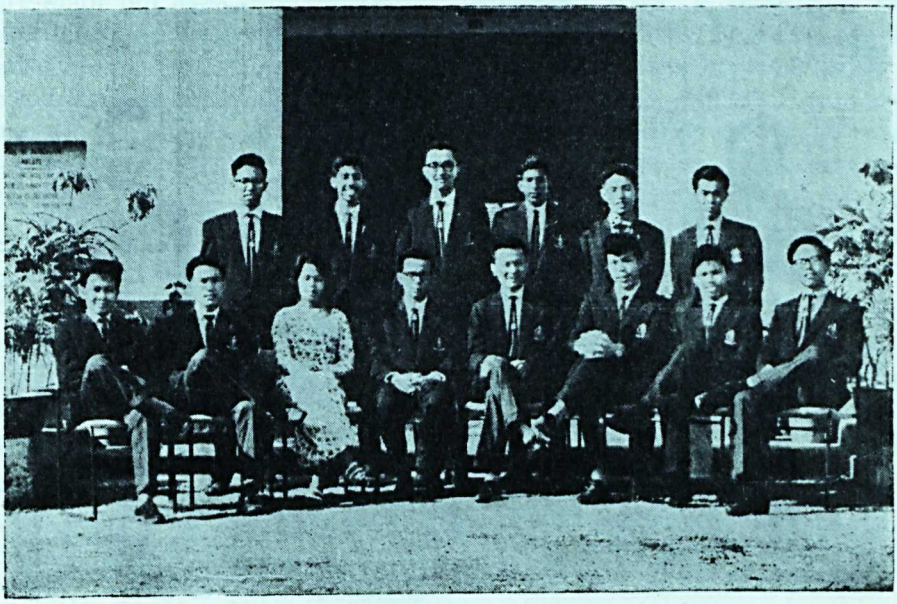
Were toiling upward in the night."

PUBLICATIONS COMMITTEE (16TH STUDENTS' COUNCIL)

Standing L to R:—Nik Yusof Ismail, Alang Perang, Thomas Ooi Tock Wang, Mak Kong Hee, Syed Bartat Ali, Wong Tee Kai, Yeoh Yee Hong, Rosli Kassim, Ng Kim Foh, Zainal Arifin.

Seated:—Goh Ah Bah, Hassan Saiidi, Ismail Shamsuddin, Chan Jook Boon, Teo Seng Loong, Lam Sang, Ooi Cheng Hock.

16TH STUDENTS' (CONTINUATION) COUNCIL



Standing L to R:—Yeoh Yee Hong, Syed Bakat Ali, Wong Tee Kai, Makeswaran, Christopher Teo, Alang Perang.

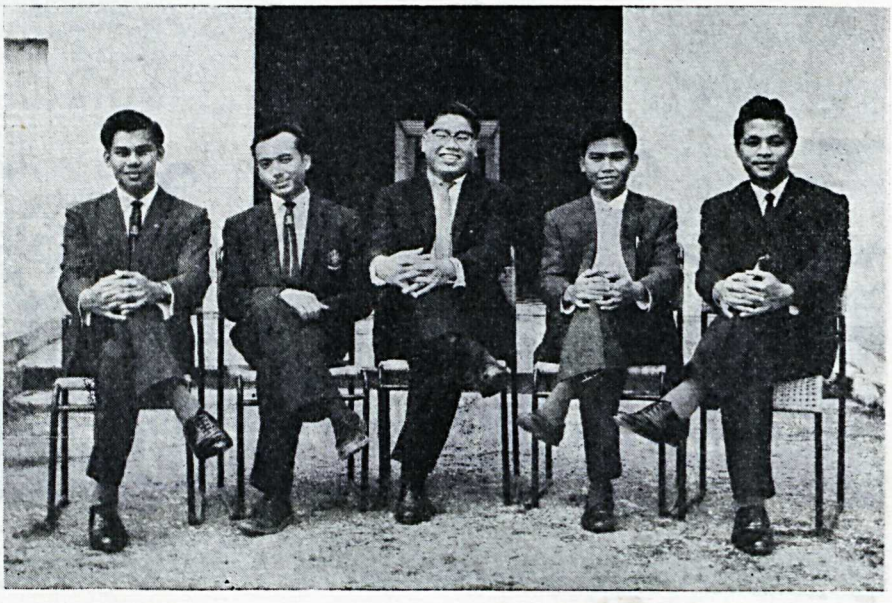
Seated:—Azman Molok, Chan Yew Cheong, Miss Wanteh, Rosli Kassim, Ng Kim Foh, Ooi Cheng Hock, Aziz Yusof, Chin Swee Joo.

WELFARE COMMITTEE—1962/63

Standing L to R.—Mohd Nur Ahmad, Pawanteh Che Din, Teo Seng Loong, D. T. Ho, Bajuvi Suhada.

Seated:—Mak Kong Hee, Isa Sulaiman, Chan Jook Boon, Daud Amin.

FINANCE COMMITTEE—1963



From L to R:—Ammad Shapie b. P. Ahmad, Jamlus Hashim, J. B. Chan, Ibrahim Ghaus, Dzulkifli Mohd. Nor.

REPORT OF THE WELFARE COMMITTEE 1962/63

Membership of the Committee.

Chairman	Inche Chan Jook Boon
Hon. Welfare Secretary	Inche Mohd. Isa bin Hj. Sulaiman
Hon. Hostel Secretary	Inche Mak Khong Hee
Hon. Asst. Hostel Secretary	Inche Daud bin Amin

Dormitory Representatives:—

Voelcker	Inche Bajuri bin Suhada
Belgrave	Inche Teoh Seng Loon
Tempany	Inche Pawanteh bin Che Din
Faulkner	Inche Ho Dua Tiam
Burnette	Inche Mohd. Nor bin Ahmad
Girls' Hostel Representative	Miss Lin Chon Moey

The Committee modestly refrain from claiming that it has had a very eventful year but can safely say that it has done what it could towards the welfare of the members.

Students Catering.

This is perhaps the most critical section which the committee had tried its level best to improve. Revision after revision of menues were made but each time the effect does not last very long. New items on the menu usually brought praise from sectors of the members only to be hotly criticised by another soon after.

The present kitchen is very lacking in modern installation. However, we have been assured of a modern kitchen when the new hostel is completed. We do sincerely hope that things will turn out for the better with the coming of the new hostel.

Students' Health.

There were a few hospital cases especially during the second term. The major part of these incidents were the result of injury at Rugger. The menace of flies is still a very hot subject during any Annual General Meeting. Much effort had been put up to eradicate them but the result is yet to come.

The Students' Co-operative Store.

As a continuation of what had been started last year. this year the same store appeared to serve members of the Union. With a loan of three hundred dollars from the Union Treasury, the Store started with a moderate stock. The store tried to make available most of the requirements of the students both on cash and credit. The establishment of this store has curtailed the inconvenience of Students in purchasing his daily necessities and other considerably.

Words of Thanks.

The committee wishes to record its thanks to all its members for their keen interest in doing duties to the members. Our thanks are also due to all those who contribute towards the welfare of the Union.

Prepared by Students' Welfare Secretary, 1962/63

MOHD. ISA BIN HJ. SULAIMAN.

REPORT OF THE FINANCIAL COMMITTEE 1962/63

The financial committee for 1962/63 stands as below:—

Chairman	....	Inche Chan Jook Boon
Hon. Secretary	....	Inche Ibrahim Mohd. Ghaus
Members	....	Inche Ahmad Shapiel b. P. Ahmad
		Inche Dzulkifli b. Md. Nor
		Inche Jamlus b. Abu Hashim

Council Subsidy:

The formation of the new Council of The College of Agriculture, presents a new face in the Budget of the Union. The Union is being subsidized with a sum of $3,500.00 of which a sum of $974.15 has been set aside for the expenditure incurred earlier this year, this making a sum of $2,525.85 available to the Union. This is the first time that subsidy from the College Authority is being incorporated direct into the Union's Account.

Transfer of Publications Committee Budget

The usual procedure of having a separate budget for the publication Committee is now terminated. The allocation to the said committee is now being done and finalized by the Financial Committee. This is thought to be imperative because the Union should have an overall picture as far as finance is concerned, and such step taken is a pre-requisite to a better functioning of the Union.

Loans

Loans are provided for the Literary and Social Committee for organizing the Re-orientation Dance and the Manager of the Students' Co-operative Store for the initial capital to run the store. The persons concerned are to meet the debit by deductions from the participating Students' Maintainance Allowance and from the sale and profits from the store respectively. Till the time of writing both the outstanding loans have been settled.

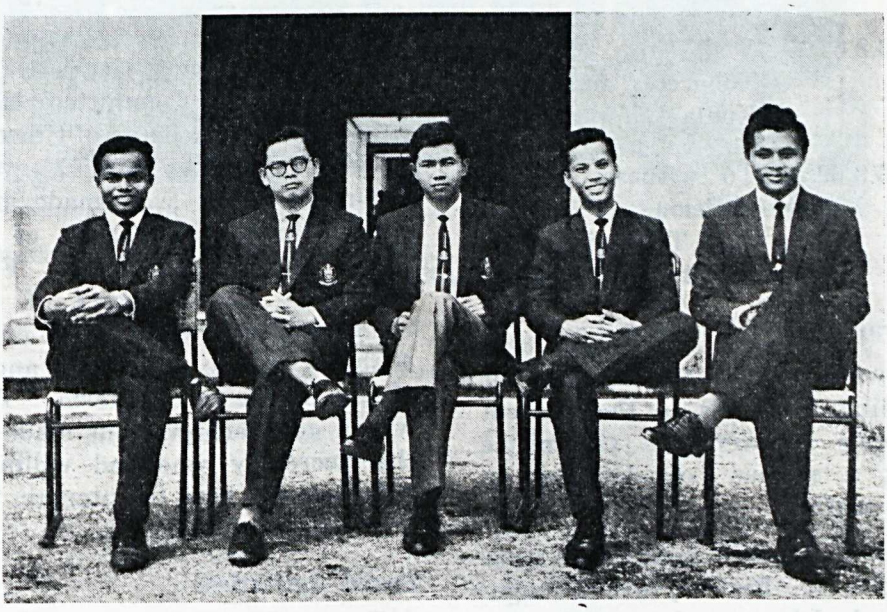
Prepared by
Financial Secretary 1962/63,
IBRAHIM BIN MOHD GHAUS.

LITERARY & SOCIAL COMMITTEE

Standing L to R:—Syed Barkat Ali, Chan Yew Cheong, Leong Kai Hoou.

Seated:—Miss Hope Lau, Ahmad Othman, Abdul Razak, Nik Hassan Sulaiman.

LANGUAGE & CULTURAL COMMITTEE 1962/63



From L to R:—Abdullah Chin, Nga Nguk Sik, Ahmad Othman, Hassan Saidi, Dzulkifli Md. Nor.

REPORTS OF THE LITERARY AND SOCIAL COMMITTEE FOR THE FINANCIAL YEAR 1962/63

I have now the honour to present the following members of the Students' Union, who have been approved by the Council at its First Council Meeting on the 24th of July 1962 to serve the above Committee for the Financial Year 1962/63.

Chairman	Che Ahmad Othman
Hon. Secretary	Che Ab. Razak Abdullah
Hon. Asst. Secretary	Che Nik Hassan Sulaiman
Film Secretary	Che Leong Kai Hoou
Librarian	Che Christopher Teo
Members	Che Syed Barkat
	Miss Hope Lau

Activities undertaken by theCommittee are as follows:—

Excursions:

The 1st Term had been a very busy term for the Committee. The Committee had successfully materialised three visits.

27.7.62 .... To Dewan Bahasa dan Pustaka, Kuala Lumpur.

3.8.62 .... Visit to Malayan Tobacco and Co., Kuala Lumpur.

3.9.62 .... To witness an Exposition of Radio and Television held in Stadium Negara.

Library:

Owing to the inadequacies of reading materials in the Student Union's Library, the Committee took a serious c onsideration on this matter.

All together 6 new books were purchased. Besides, several magazines had been made available for the purpose of leisure reading.

Records:

In order to keep the student members up to date with the continuous changeable musical fashion, several records were made available. Four long playing records and two short-playing records were bought.

Film Shows:

Perhaps the most active participations in the Committee's activities was the screening of Cinemascope Films. An almost every fort-night show was made possible. Under the charge of an active and enthusiastic Film Secretary, the members of the Students Union were able to enjoy 4 shows in the first term and 5 shows in the second term. This was a good achievement made by the Secretary who had willingly sacrifised his time to entertain the members of the Union.

Social Activities:

To welcome the intake of yet another batch of freshmen to the

College of Agriculture, a Re-orientation Dance was held on the 7th July 1962. On the 3rd October 1962, the Committee succeeded in holding another well attended dance. A farewell dinner for the 6 members of the College staff who left us at the end of 1962 was held in the Dining Room.

Prepared by
AB. RAZAK ABDULLAH,
Literary and Social Secretary.

SPORTS COMMITTEE

Standing L to R:—Azman Molok, Chan Yew Cheong, Nga Nguk Sik, Ani Saad, Chee Yan Kuan, Ng Kim Foh, Zainal Hamid.

Seated:—Zainal Arifin, Pawanteh Che' Din, Lum Wee Meng, Ahmad Othman, Dzulkifli, Mohd Nor, Abdul Ghani Ibrahim, Aziz Yusof.

SPORTS SECRETARY'S REPORT

Sports Round Up 1962/63

Formation and Set-up of the Committee

The Sports Committee for this academic year was formed after the election of the various games captains at the second session of the First General Meeting on the 20th July, 1962. The Set-up of the committee is as follows:

Chairman	Ahmad Othman
Secretary	Lum Wee Meng
Football Captain	Pawanteh Che Din
Rugby Captain	Abdul Ghani Ibrahim
Hockey Captain	Dzulkifli Md. Noor
Badminton Captain	Chan Yew Cheong
Table Tennis Captain	Ng Kim Foh
Tennis Captain	Zainal Arrifin Bahari
Volley Ball Captain	Nga Nguk Sik
Basket Ball Captain	Chee Yan Kuan
Sepak Raga Jaring	Aziz Yusof
Body-building	Asman Molok
Athletics	Ani Saad
Indoor Games	Zainol Hamid

This committee functioned till December 1962 after which a new committee was set up which comprised:

Chairman	Ho Dua Tiam
Secretary	Goh Ah Bah
Rugby Captain	Bajuri Suhada
Football Captain	Aziz Yusof
Hockey Captain	Ishak Saad
Badminton/Tennis & Table Tennis Captain	Ooi Cheng Hock
Sepak Raga/Volley Ball and Basketball Captain	Chee Yan Kuan
Indoor Games Captain	Chin Swee Joo

It was unanimously decided in the First General meeting that the union should concentrate on the three major games—viz. Rugby, Football and Hockey. This radical change was deemed necessary because of CASU meager financial status and the dimunitive number of students in this college. However, this did not mean that the other minor games are to be shelved entirely, for a limited portion of the budget was decided to be utilized on the minor games. This move was introduced also to help players attain a better standard of play in one or two of the major games listed, instead of

being a "Jack of all trade" and a master of none.

This year Netball was scratched owing to the lack of responses from the ladies of this college. It is hoped that future lady students would make better use of the facilities provided.

Because of the $1,500 allocated to the Sports Committee, it was able to purchase new sporting materials like jerseys, hockey sticks, balls etc. The Committee also took the burden of providing the players with a pair of white shorts each. However, this did not arouse great interest in participation as expected from non-sportsmen. Because of the lack of "fresh.blood" our standard of games was not markedly improved to any appreciable extent. It is the sincere hope and aspiration of the Sports Committee that more students could come forward and contribute their participation in the sporting activities.

Soccer

The achievement from this field was not very encouraging which might probably be attributed to the lack of practice and support given to it. It is hoped that with the advent of Che' Hamid Aroop, our new Hostel Steward who was also a Perak State football player, the standard of play would be raised.

Results

No. of games played	Won	Drew	Lost
8	4	1	3

Rugby

Rugby was and still is the most popular game in this college as evidenced by the good turnout during practices and the support given at matches. Our lack of a coach at the beginning of the season did speak for the failures encountered. However, later we were able to have the good fortune of entailing the help of two coaches; Dr. Colterjohn of the R.M.A.F. and Mr. H. J. Blake, the manager of Serdang Estate. Through their initiative and splendid coaching, the college team is able to enjoy better and more skilful rugby.

Results:

Games played	Won	Drew	Lost
16	5	2	9

Hockey

The hockey season commenced during the later part of the second term. At the commencement of the season the team was not a properly organised one and hence we lost a number of matches due to the lack of a coach. At the beginning of the third term, the college Hockey team was blessed with the appearance of Che' Hamid Aroop (previously a Perak state Hockey player) whose coaching has welded the team to a formidable standard.

Results

Games played	Won	Drew	Lost
12	6	1	5

We hope to do better during the next hockey season.

During the course of the year, other games like Tennis, Badmin-

ton, Basketball, Table-Tennis, Volleyball, Indor Games, Sepak Raga were also played.

Interdormitory Matches

As is the tradition of the Students' Union, interdormitory matches are held every year. Keen rivalry and loyalty for their own dormitories were exhibited by the participants. In fact, had all the college players shown such tenacity and keen rivalry during matches with other teams, we could have achieved wonders. One other inportant feature regarding the interdormitory matches was that non-sportmen at ordinary times suddenly turned sportmen over night and became heroes in the field. This only goes to show how much potentiality and latent sportsman-ability lie in some of us. With some effort and practices these qualities can be exploited and developed to the great advantage of not only the person or persons concerned but also to serve your Alma Mater in the field of sports.

Results of the Interdormitory Matches

Football	....	Burnette
Volley Ball	....	Burnette
Badminton	....	Tempany
Sepak Raga	....	Tempany
Basketball	....	Belgrave
Table-tennis	....	Belgrave
Rugby	....	Faulkner
Tennis	....	Faulkner
Indoor games (Carrom)	....	Faulkner

Belgrave and Tempany dormitories shared the honour of being champion.

Open Championship

Every year open championships for singles and doubles are held for Tennis, Table Tennis, Badminton, Carrom and Chess. Champions and runners-up in the various items were awarded gold and silver medals respectively.

Colour Awards

The colour awards were presented every year to outstanding players in the major games. The awards went to:—

Rugby	....	Nah Boon Yew Lum Wee Meng Ismail Shamsudin Bajuri Suhada
Football	....	Pawanteh Che Din Nik Yusof Ismail Abdul Aziz Yusof
Hockey	....	Abdul Aziz Kadir Zulkifli Md. Nor Pawanteh Che Din

Northen Sports Tour

The highlight of the sports activities of the union was the Northern Sports tour up to Penang, held during the December vacation. This tour was subsidised by the Union with a sum of $400 and the rest of the charge was born by players and supporters.

One most regretful thing which happened during the course of the tour was the robbery which occured in Taiping. A number of students were robbed of cash and valuables which amounted to over a thousand dollars. This included subsidy given by the union. The

tour could have ended then and there had not other students who were not robbed decided to contribute about ten dollars each to finance the tour. This spirit of self sacrifice and co-operation in time of stress should merit our highest praise and admiration.

Some of the players disappeared immediately they arrived at their home towns and left the team with a shortage of players. This attitude was indeed very unbecoming and deplorable. If members are not prepared to sacrifice a little of their vacation for the sake of sports and for the Union, they have no rights whatsoever to enjoy the priviledges given by the Union. It is by fervent hope and the hope of the Sports committee that no such things will ever occur again during any sports tour.

On the whole the tour was quite smoothly inspite of the various setback mentioned. Credits must be given to the new Rugby players who filled the gap left by some irresponsible players. Those new players deserved our thanks.

We lost all the Rugby matches played but with very narrow margins:

Against Kinta Asians	(3-13)
Against Taiping Tigers	(3-10)
Against Penang Island XV	(8-16)

Of the one Hockey and one football matches played we lost both.

We take this opportunity to express our heartfelt thanks to Mr. Tan Wooi Cheow of Penang for his invaluable assistance, the Principals of Sekolah Tunku Abdul Rahman Ipoh and t he King Edward VII school for granting us accomodation in their school hostels during the Northern Sports Tour. Mr. G. I. M. Martin our Principal must also be thanked for his permission to use the College bus and also for his keen interest and invaluable assistance both materially and advice which he has so unhesitatingly contributed to the success of sports in the College.

Sports Secretary,
C. A. S. U. 1962/63.

'What do we live for if not to make
life less difficult to each other'

George Eliot.

LANGUAGE AND CULTURAL COMMITTEE REPORT

The Language and Cultural Committee (Ad Hoc) for the Financial Year 1962/63 was formed as follows:—

Chairman	....	Inche Ahmad bin Othman
Hon. Secretary	....	Inche Nga Nguk Sik
Committee Members	....	Che Lin Choon Moey
		Inche Abdullah bin Chin (Muslim Union Rep.)
		Inche Hassan bin Saidi
		Inche Dzulkifli bin Md. Nor

The primary objectives of this Committee are to encourage all forms of cultural activities and to promote the use of our National Language as far as possible among the students of this College.

The following activities were organised by the Committee this year.

Malam Bahasa:

In conjunction with the Second phase of Bulan Bahasa, the Committee had successfully launched the "Malam Bahasa" with the generous co-operation of the College Muslim Union. Included in the programmes for the two successive nights on the 17th and 18th August, 1962, were the various competitions such as oratorical contests, Singing, Reading Sajak, Interdormitory quiz, sketch and debate. A remarkable performance which included cultural dances was staged by our guest artists (Mr. Kurup's Troupe). Inche Ali bin Hj. Ahmad from the Dewan Bahasa dan Pustaka gave a lengthy talk on various aspects of the National Language. On the second night, Radio Malaya's Recording staff was present to tape-record certain items during the Malam Bahasa.

National Language Class:

A National Language class was organised under the tutorship of two voluntary members, Inche Abdul Majid binKayat and Inche Abdul Aziz bin Sheikh Abdul Kadir. Owing to the pressure of other College activities, this noble project had failed.

Cultural Dance:

An instructress, Che Puteh binti Sa'ad, of the Information Department was engaged weekly on Tuesday night to teach the students on various cultural dances. The response from the members was most satisfactory.

INCHE NGA NGUK SIK,
Hon. Secretary.

Zainon bt. Hashim.
(Major Scholar)
1961/62—Girls' Hostel Representative.

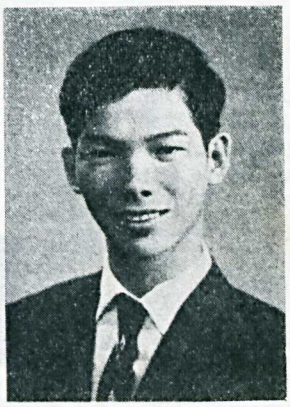
Lin Choon Moey.
(Major Scholar)
1960/61—Member of Literary & Social Committee.

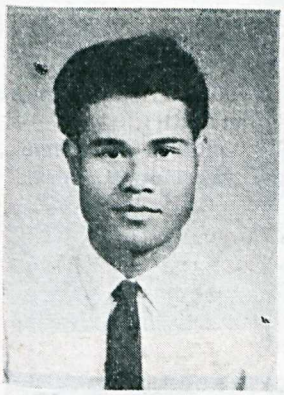
1962/63—Girls' Hostel Representative.

Julian Yeoh.
(Major Scholar)
1961/62—Proof Reader—Serdang Sun.

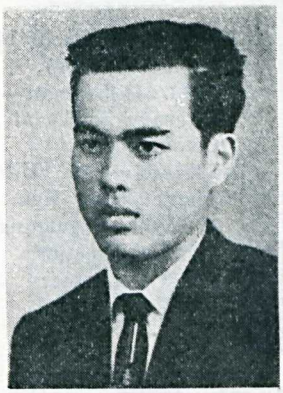
Lim Hang Hong.
(RIRB Scholar)
1960/61—Table-Tennis Captain.

1961/62—Table-Tennis Captain.



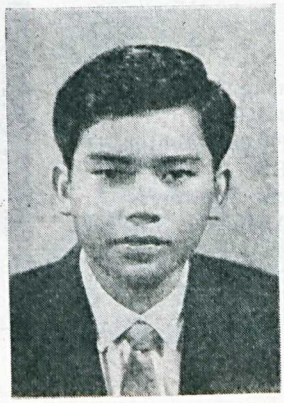


Zainal bin Hamid.
(RRI Scholar)
1962/63—Indoor-Game Captain.
CASU.



Nah Boon Yeow.
(Major Scholar)
1961/62—Volley-ball Captain.

Ibrahim bin Ghaus.
(Major Scholar)
1961/62—Assistant Secretary General.
PPMP.
Member of Financial Committee.
Member of National Union Council, PKP.
1962/63—Financial Secretary, CASU.



J. B. Chan (Major)
Member of 3rd National Students' Council.
PKP—1960/61.
Publications Secretary.
CASU.
President, CASU
1962/63.
Delegate to the 4th Annual Student Conference 1961/62.
Delegation Leader to the 5th National Students' Council.
PKP—1962/63.

Mohd Isa bin Hj. Sulaiman (RRI)
1961/62—Damitary Representative.
1962/63—Students' Welfare Secretary. CASU.

Lam Sang (RRI).
1962/63—Editor of Publications Committee (Tembusu & Serdang Sun).

Ahmad b. Othman (Major)
1961/62—Foot-ball Captain. CASU.
1962/63—Vice-Captain, CASU.

Abdul Ghani bin Ibrahim (RRI).
1962/63—Rugger Captain.

Nik Mohd Yusof bin Ismail (Major).
1960/61Librarian—Literary & Social Committee.
1961/62—Art Editor—The Serdang Sun.
1962/63—Returning Officer—Election Sub-Committee.

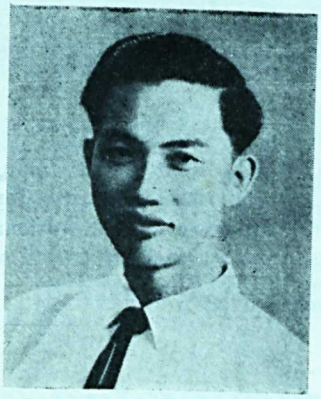
Mohd Abdan bin Abu (RIRB).
1961/62—Assistant Secretary General. CASU.

Abd. Wahid Hj. Azahari (RRI).
1960/61—Assistant Secretary General. PPMPTM.
1961/62—Treasurer & Secretary of Students Relief Fund.
1962/63—Secretary General—PPMPTM.

Chong Tong Soo (RIRB).
1960/61—Editor. ABS.
Hon. Auditor. CASU.

Zainol Arifin bin Bahari (RRI)
1960/61—Badminton Captain, CASU.
1962/63—Tennis Captain, CASU.
Member of Publication Committee.

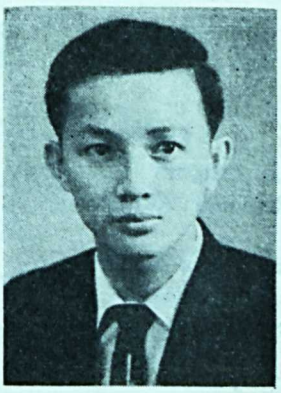
Hassan Saidi, (Major)
1961/62—Councillor Muslim Union.
Member of Cultural Committee.
1962/63—Editor—Serdang Sun. (Malay Section).



Long Siew Tow (RRI)
College Soccer Player.

Daud bin Amin (Major)
1961/62—Proof-reader.
1961/62—Proof-reader, The Serdang Sun.
Indoor Game Captain.
1962/63—Asst. Hostel Secretary.

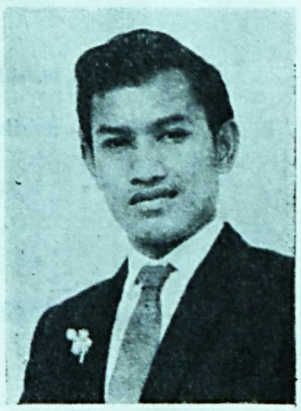
Choa Swee Lin (Major)
1960/61—Film Secretary.
Associate Editor, Serdang Sun.
1961/62—Literary & Social Secretary.

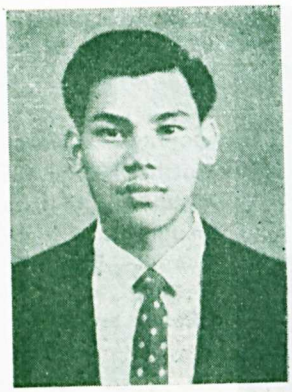


Soo Lip Tan (RRI)
1960/61—Typist—Publications Committee.
1961/62—Basket-ball Captain.

Lum Wee Ming (RIRB)
1960/61—Business Manager—Serdang Sun.
1961/62—Editor—Serdang Sun.
1962/63—Sports Secretary, CASU.

Razak bin Abdullah (Major)
1960/61—Film Secretary, Muslim Union.
1961/62—Literary & Social Secretary, PPIKP/PTM.
1962/63—Literary & Social Secretary, CASU.





Ahmad Shafie b. Panjang Ahmad
(RRI)
1960//61—Treasurer. Muslim Union.
1962/63—Member of Financial Committee.

Shafie Ahmad
(Major)
1961/62—Member of Welfare Committee.

Dzulkifli bin Nawawi
(RRI)
Member of Welfare Committee.
1961/62—Soccer player.

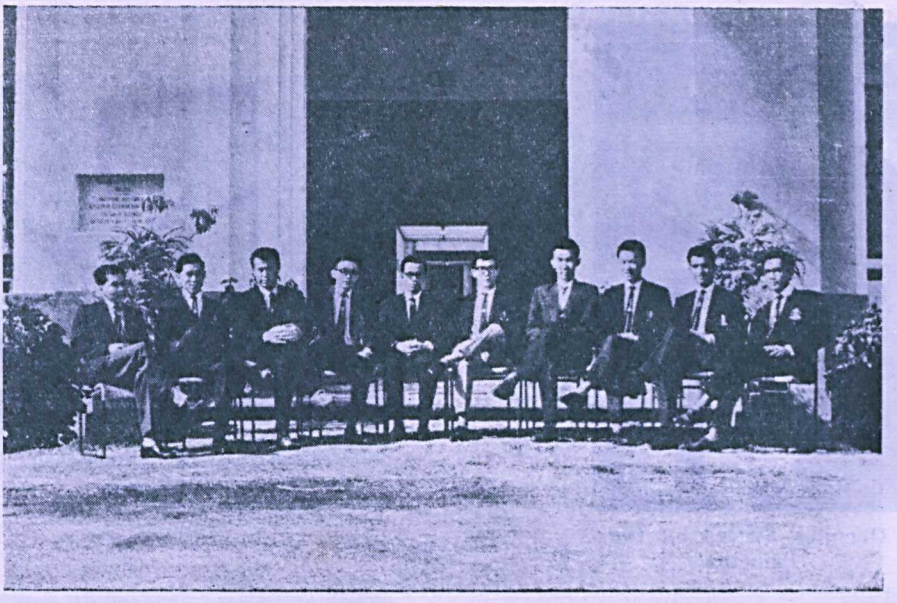
Tan Keat Leong, (Major)
1961/62—Secretary General, CASU.
Member of 3rd National Students' Council.
PKP—1960/61.

Abdul Majid bin Kayat (Major)
1960/61—Secretary, Regional Affairs, Muslim Union.
CAMSU delegate to S.E. Asia Muslim Students' Seminar.
1961/62—CAMSU Vice-President.

Mak Khong Hee (RRI)
1960/61—Business Manager, H.B.S.
Member of Literary & Social Committee, CASU.
Hon. Ouditor, CASU.
1961/62—Member of Welfare Committee.
1962/63—Hostel Secretary.

It is unfortunate that photographs of three members of the Class 1960/63 are not available.

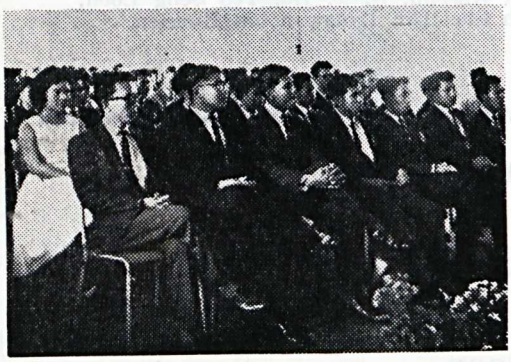
Editor.



From L to R:—Nik Hassan bin Sulaiman, Wong Non Lin, Goh Ah Bah, Loh Wai Choong, Rosli Kassim, D. T. Ho, Teo Seng Loon, Ng Kim Foh, Pawanteh Che' Din Radzwan bin Hussien.

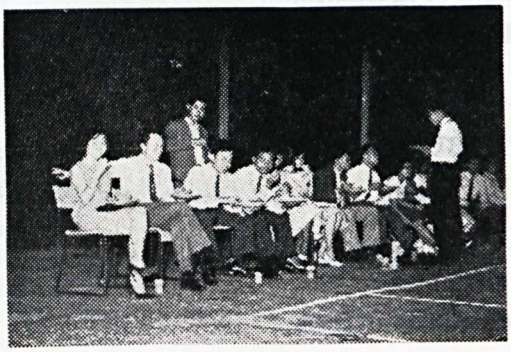
Opening Speech by the Principal.

Chairman of College Council Addresses.



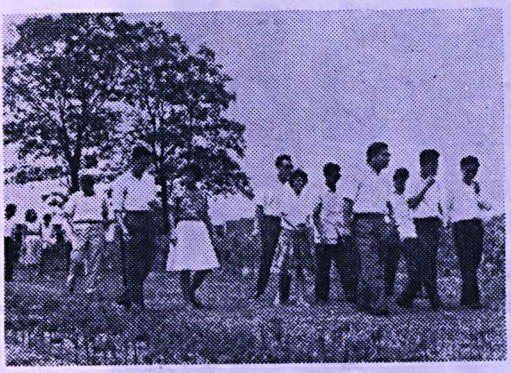
The Graduands listen.

In the Exhibition room.



At Last the Satay cum Sayonara dance party.

GOOD-WILL OVERSEAS DELEGATIONS TO
COLLEGE OF AGRICULTURE, MALAYA



The Thai Delegates being conducted round the Campus.

The Thai Delegation with the Members of CASU.

At the Hydroponimuc—Female Japanese Delegate, Miss Mikaru Ishihama admiring at a plant.

The head of the Australian delegation on the Fruit area.

A taste of the College lettuce .

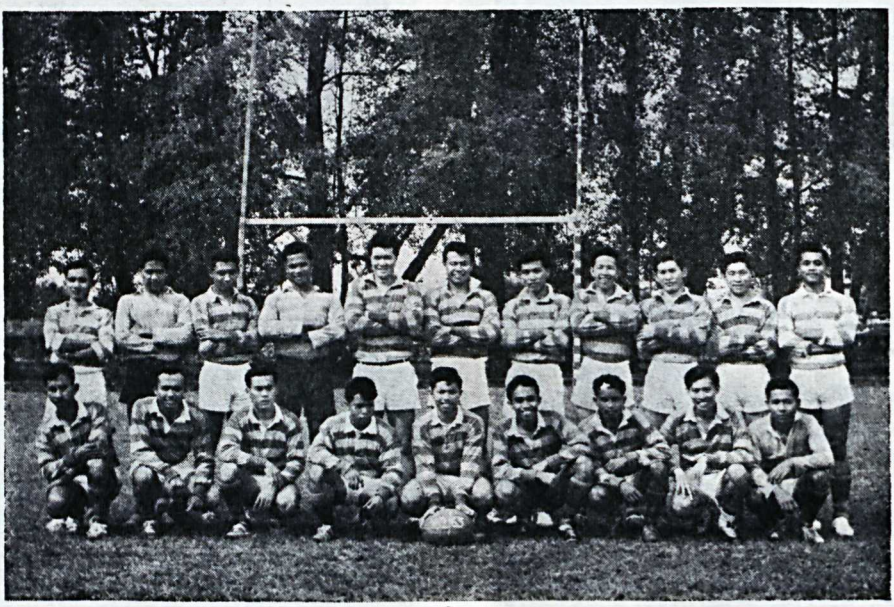
At the Botanical Garden—what a pleasant sight!

FOOTBALL

Back row from L to R:—Ishak, Shahabuddin, Jamlis, Aziz Kadir, Ooi Cheng Hock. Dzulkifli Nawawi, Nga Boon Yeow, Bajuri, Ghani.

Frontrow from L to R:—Azman Molok. Ahmad Othman, Pawanteh, Aziz Yusof, Nik Yusof.

RUGGER



Back row from L to R:—Radzwan, Ani Saad, Daud Amin, Esa Sulaiman, Lum Wee Meng, Goh Ah Bah, Chan Jenn Kwang, Lum Sang, Leong Kai Hoou, Wong Non Liri, Dzulkifli Md. Nor.

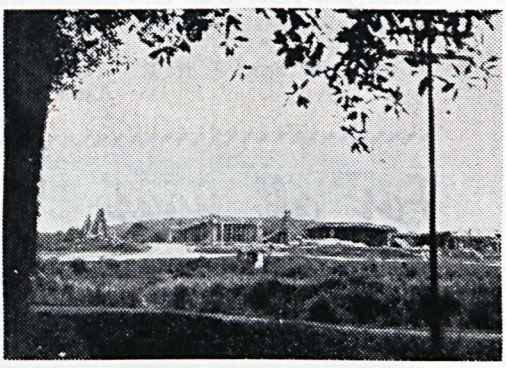
Front row from L to R:—Abdullah Ismail, Jamlus Abu Hashim, Nah Boon Yeow, Bajuri b. Suhada, Aziz Yusof, Dzulkifli Nawawi, Abdul Ghani Ibrahim, Mak Khong Hee, Ismail Samsuddin.

Back row from L to R;—Hassan Saidi, Shahabuddin Shafie, Radzwan, Chan Yew Cheong, Ibrahim Ghaus, Thomas Ooi, Hanafi Awang, Ishak, Dzulkifli.

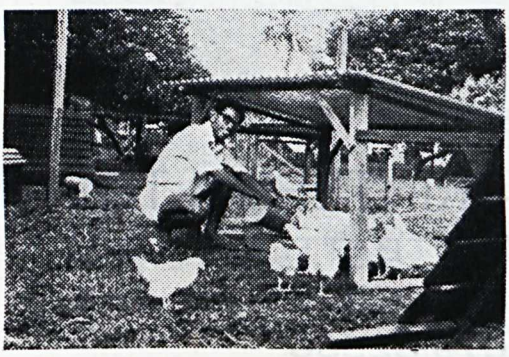
Front row from L to R:—Pawanteh bin Che' Din, Aziz Kadir, Aziz Yusof, AzmanMolok, Ismail Shamsuddin.

The First Years' Vegetable Garden—1962/63.

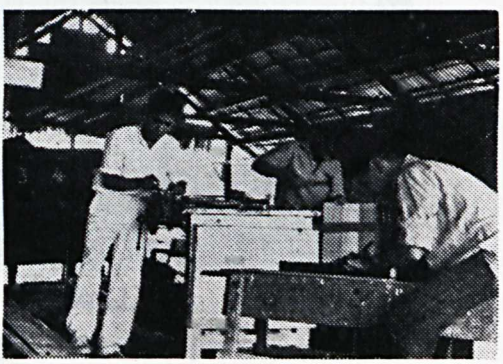
The happy "young farmers" eh! Is this your goal after S.C. .....!



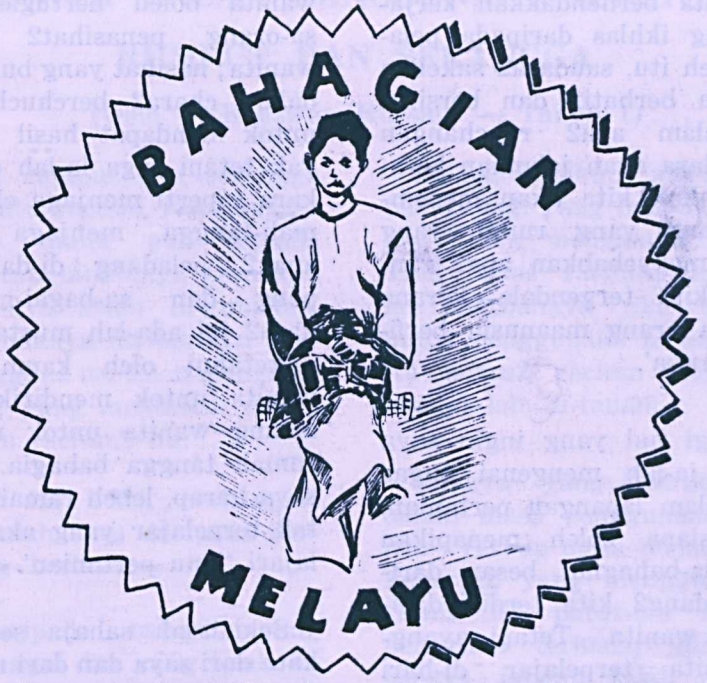
New hostel under construction—A dream comes true.



"Muthu" with his white Leghorn!



"Carpenters" at work.



Selamat bertemu kembail, si-dang pembacha sa-kalian di-dalam ruangan Bahagian Melayu Majallah 'Serdang Sun' keluaran kali ini.

Saperti biasa ruangan ini men-hidangkan beberapa buah karangan dan suntingan buah fikiran dari-pada Penuntut2 Kolej ini. Di-sini, bagi pehak penyunting saya men-guchapakan berbayak2 terima kaseh di-atas kerja-sama saudara2 untok menjayakan ruangan ini. Kita berharap lebeh banyak lagi penuntut2 di-sini termasok-lah penuntut2 yang bukan Melayu memberi sokongan dan kerja-sama mereka dalam berupa karangan dan sa-bagai-nya untok ruangan ini demi kepentingan diri sendiri dan masharakat umum. Di-ruan-gan ini-lah satu peluangan hagi penuntut2 yang bukan Melayu merasmi-kan diri mereka berba-hasa kebangsaan, ia-itu satu Baha-sa nilainan Bangsa, ra'ayat yang sudah mereka.

Kerajaan kita di-hari ini ada-lah berusaha dengan lebeh tekun untot menjayakan negeri kita dalam lapangan Pentadbiran, Perekono-nomian dan tidak ketinggalan juga dalam lapangan Pertanian. Maka dalam lapangan Pertanian-lah ter-letakn-ya tugas2 bagi penuntut2 di-kolej ini yang bakal menjadi pemimpin2 kaum tani pada besok hari.

Kemundoran peladang2 kita ia-lah terutana-nya kerana ke-kuran-gan pelajaran dalam hal pertanian. Maka ada-lah kewajipan kita untok menunjok ajar dan menasihati me-reka dalam pekerjaan mereka. Chara2 yang mudah kita meng-hadapi tugas ini ia-lah dengan menubohkan Persatuan2 peladang dalam kampong2. Ada-lah musta-hak sekali bagi kita membasmikan fahaman baharu kapada peladang2 ini ia-itu mereka mesti-lah sedia mengikut chara2 baharu dan buangkan fahaman lama. Dalam

hai ini kita berhendakkan kerjasama yang ikhlas daripada peladang2. Oleh itu, saudara2 sakelian hendak-lah berhati2 dan bersifat sabar dalam apa2 ranchangan yang saudara akan jalankan kerana kerap kali kita akan menempoh soalan2 yang rumit yang mungkin menyebabkan apa2 ranchangan kita tergendala—kerana 'tidak dua orang maanusia berfikiran sarupa'.

Satu lagi hal yang ingin saya sebutkan ia-lah mengenai tugas wanita dalam lapangan pertanian. Tidak sesiapa boleh menapikan bahawa sa-bahagian besar daripada peladang2 kita terdiri daripada kaum wanita. Tetapi sayangnya wanita terpelajar di-hari ini tidak hargakan 'Ilmu Pertanian. Fikiran mereka Bertani itu berma' ana mesti berlumor dengan lumpor dan kekotoran baik di-masa panas mahu pun di-masa hujan. Fahaman saperti ini ada-lah salah sama sekali. Dan lagi Bertani bukan-lah untok kaum lelaki sahaja, wanita juga mesti menunaikan peranan-nya dalam lapangan ini, umpama-nya: wanita boleh menjadi sa-orang penyiasat penyakit2 pokok (plant Pathologist). Dan wanita boleh bertugas sa-bagai sa-orang penasihat2 peladang2 wanita; nasihat yang bukan ha-nya dalam chara2 berchuchok tanam untok mendapat hasil yang banyak tetapi juga ia-lah dalam perkara saperti menjaga ekonomi rumah-tangga, menjaga kesihatan anak2 peladang di-dalam kampong dan sa-bagai-nya. PPerkara2 ini ada-lah mustahak sekali di-ketahui oleh kaum peladang wanita untok mendirikan rumah ladang wanita untok mendirikan rumah tangga bahagia. Oleh itu saya harap, lebeh ramai lagi wanita2 terpelajar yang akan mempelajari 'ilmu pertanian'.

Sekian-lah sahaja sepatah dua kata dari saya dan dari ruangan ini juga saya menguchapkan selamat maju jaya kapada sa-kalian penuntut2 dan penimpir2 kaum Tani dalam menjalankan tugas masing2.

'Tumboh enggerek di-tepi paya,

Tanam kapas tepi perigi;

Jangan serek kalam ta'jaya,

Beri-lah tugas menchuba lagi.

BAHAYA DALAM PENGGUNAAN RACHUN2 RUMPUT DAN SERANGGA

(Oleh — Radzwan Hussain — Tahun I)

Rachun2 rumput dan serangga ada-lah suatu rachun yang sangat merbahaya mahu pun kapada manusia atau binatang2 ternakan jikalau ia-nya salah di-gunakan. Biasa-nya bahaya ini berlaku apabila si-pengguna itu tidak mengikut peraturan2 yang mustahak dalam penggunaan rachun2 ini.

Bahaya2 ini boleh berbangkit daripada salah satu daripada perkara2 yang berikut:—

(i) Daripada bahan2 yang tinggal dan yang telah di-gunakan.

(ii) Daripada masa membanchoh bahan2 rachun itu.

(iii) Dalam masa penggunaan rachun2 itu.

Bahaya daripada bahan2 rachun yang tinggal dan yang telah di-gunakan ini selalu berlaku. Pekara sa-macham ini berlaku apabila si-pengguna itu tidak mementingkan penggunaan papan kenyatan untok memberi isharat2 kapada pendudok2 berdekatan dengan tempat yang di-rachun itu. Banyak kemalangan telah berlaku bersangkutan dengan hal saperti ini.

Biasa-nya binatang2 ternakan saperti kerbau, lembu dan kambing yang selalu menghidapi-nya. Ini ada-lah kesalahan tuan empunya binatang dan juga orang yang menggunakan rachun itu.

Bekas2 rachun ada-lah suatu pekara lagi yang banyak orang ramai tidak mengambil perhatian. Tin2 bekas rachun2 ini sangatlah merbahaya jika di-gunakan untok penggunaan sa-hari2. Oleh itu bekas2 rachun yang kosong hendak-lah di-tanam.

Bahaya yang berikut ia-lah dalam masa penggunaan rachun2 itu. Terlalu biasa terjadi bahawa. Pekerja2 yang menggunakan rachun2 ini patut-lah mengambil perhatian terhadap diri mereka supaya jangan salah menggunakan rachun2 ini. Di-negeri yang berhawa panas saperti negeri kita ini chepat menghilangkan tenaga kita. Oleh yang demikian pekerjaan sa-orang itu tidak-lah sabagitu chekap sa-bagai mula-nya, Apabila badan so-orang itu sudah lateh, maka ia pun tidak menghiraukan sangat pekerjaan-nya. Debu2 rachun2 ini apabila kena pada badan yang berpeloh akan meresap kedalam daging. Lama kelamaan rachun itu akan meresap sadikit demi sadikit ka-dalam tuboh badan, dan akan bertambah, akhir-nya mendatang kan bahaya kapada diri kita.

Kekurangan ilmu kesihatan akan juga membawa bahaya dalam penggunaan rachun2 ini. Jikalau tangan si-pengguna itu tidak di-chuchi dengan berseh-nya dengan sabun maka apabila dia-nya makan kelak rachun itu akan meresap

masok dalam makanan. Pakaian pekerjaan sa-hari2 jika tidak di-basoh dengan sertamerta akan menambahkan lagi kesan2 rachun2 yang di-gunakan tadi.

Untok mengelakkan perkara2 itu dari berlaku hendak-lah kita membasoh tangan dengan sabun sahingga berseh sa-belum menyentoh barang2 makanan. Hendak-lah mandi dan chuchi tuboh badan sa-berseh2-nya untok menjauhkan daripada bahaya2 ini.

Kita dapati juga banyak pengguna2 rachun2 ini tidak mengambil berat terhadap risalah2 yang ada tertulis di-bekas2 rachun2 itu. Jikalau rachun itu di-ambil dengan tangan dan tangan itu tidak di-chuchi dengan berseh-nya maka bahaya tidak-lah dapat di-elakkan.

Sabagai satu amalan, hendak-lah kita hati2 kan risalah2 yang di-beri untok penggunaan rachun2 itu. Bagitu juga bekas2 rachun yang bochor hendak-lah kita salinkan kadalam tempat lain dan bekas lama itu hendak-lah di-musnahkan.

Chara2 rachun2 ini mendatangkan bahaya.

(i) Kemasokkan yang banyak dengan sekali gus:—

Ini bermaksud rachun2 itu masok ka-dalam tuboh badan kita dengan banyak-nya di-suatu masa. Ini boleh terjadi jika rachun2 itu masok dalam barang makanan, saperti ayer minum. Biasa-nya rachun ini masok melalui mulut. Perkara ini bersabit dalam salah penggunaan dan kekurangan ilmu kesihatan.

(ii) Kemasokkan dalam masa yang berpanjangan:—

Ini bermaksud rachun2 ini masok sadikit demi sadikit melalui kulit badan dan juga masa menyedut udara yang mengandongi debu2 rachun itu. Patut-lah pengguna mengambil perhatian bahawa kemasokkan rachun ini kedalam badan kita sadikit demi sadikit itu akan membankitkan satu perkara yang burok kelak.

Chara2 untok menjauhkan bahaya2 ini.

1. Penggunaan pakaian yang memberi perlindongan daripada rachun2 ini saperti sarong tangan, dan baju hujan.

2. Rasmikan-lah diri kita dalam hal ilmu kesihatan supaya kita dapat menjaga kesihatan tuboh badan dengan baik-nya. Ini termasok-lah penggunaan sabun untok membasoh tangan sa-lepas menguna rachun2 ini.

3. Rachun2 ini hendak-lah di-tempatkan di-tempat yang selamat daripada manusia dan binatang2 ternakan, bilek simpanan itu mestilah di-kunchi supaya kanak2 tidak dapat mengambil-nya.

4. Bekas2 yang kosong itu hendak-lah di-musnahkan dan di-tanam supaya orang lain tidak tertipu oleh-nya.

5. Berhati2-lah dalam masa menggunakan rachun tersebut, kerana jika tersilap dalam penggunaan-nya akan mendatangkan bahaya kapada binatang2 ternakan dan juga pada masharakat umum.

Sekian-lah sadikit sa-banyak penjelasan terhadap bahaya dan chara2 menjauhkan bahaya penggunaan rachun2 rumput dan serangga.

CHARA2 MEMAJUKAN PERTANIAN DI-PERSEKUTUAN TANAH MELAYU

(NGA NGUK SIK)

Kedudokan pertanian di-Persekutuan Tanah Melayu setakat ini ada-lah maju dan terus maju—sangat maju terutama sekali dalam lapangan Perusahan Getah. Tetapi jika di-tinjau pada perusahan tanam2-an lain, maju-nya tidak-lah sa-begitu elok atau memuaskan umpama-nya dalam perjuangan kita untok menchapai chita2 hendak bersendirian dalam bekalan bahan beras yang maseh di-bawah masok dari negeri2 jiran kita pada tiap2 tahun. Demikian juga keadaan-nya dalam persusahan ternakan yang sa-patut-nya di-berikan sa-penoh2 perhatian dan penyelidekan.

Dalam lapangan Persusahan Getah, Pusat Penyelidekan Getah Persekutuan anah Melayu (R.R.I. M.) dan Lembaga Perusahaan Menanam Semula Getah (R.I.R.B.) dengan sokongan dari Jabatan Pertanian telah menchapai kejayaan yang chukup memuaskan. Kesemua-nya hendak-lah bergiat lagi bekerja dengan satu tujuan, yaitu menebang pokok2 getah yang telah tua dan ditanam semula dengan mengunakan beneh2 getah yang baik sahaja. Dengan jalan ini pengeluaran hasil getah asli akan bertambah lagi dimasa hadapandan ini ada-lah satu chara yang baik untok mengatasi anchaman "Getah iruan" yang dari dulu lagi telah mengancham Perusahaan ini.

Berkenaan dengan tanaman padi pula, langkah untok meluaskan lagi sawah2 padi dan menaanam jenis padi dua kali sa-tahun telah digalakkan dengan bertujuan supaya dapat negeri ini mengeluarkan lebeh banyak lagi bahan beras dimasa hadapan dn sa-terus-nya dapat negeri ini bersendirian didalam bahan ini. Untok menchapai chita2 tersebut di-atas, sangat-lah mustahak di-adakan kemudahan2 saperti mengadakan tali2 ayer yang chukop sempurna, memberi nasehat2 berkenaan dengan sukatan ayer, menentukan tarikh2 dan chara2 yang sesuai seuntok menyemai dan menanam, merumput, menggunakan jenis2 baja, memeraka dan menchegah serangga2 serta penyakit dan sebagai-nya. Dan juga pegawai2 berkenaan yang terlateh hendak-lah dengan saboleh2 nya berikhtiar menasehat dan menolong kaum tani berkenaan dengan butir2 yang tersebut agar dapat mereka menambahkan lagi hasil dan keuntongan mereka.

Sa-lain daripada tanaman2 getah dan padi, langkah2 untok memperluaskan perusahaan menanam kelapa sawit, nanas dan buah-buahan maseh belom lagi di-lancharkan sa-chara besar-besaran. Dan juga tanaman2 lin sa-perti teh, kopi dan koko maseh lagi di-dalam perchubaan dan harus kita akan mengambil berat untok menanam lebeh manyak lagi di-masa hadapan, moga2 perusahaan tanaman2 tersebut di-atas itu dapat menguntongkan kaum2 tani kita serta menambahkan lagi ekonomi negara kita ini.

Satu chara lagi untok memajukan pertanian di-negeri ini ia-lah dengan menumpukan perhatian kita pada perusahaan ternakan. Perusahaan ini bukan-lah merupakan sebagai satu perusahaan yang bahru, chuma perusahaan ternakan. Perrusahaan ini bukanlah merupakan sebagai satu perusahaan yang baharu, chuma perusahaan ini telah tidak begitu maju sabagai mana yang sa-patut-nya. Ternakan2 ayam dan lain2 binatang ternakan hendak-lah di-usahakan sechara besar-besaran di-negeri ini. Ini akan menambahkan enonomi negara yang berbetulan pula denganmeninggikan taraf hidup kaum2 tani kita. Penyelidekan bagi meluaskan telah pun di-jalankan dan dengan ini perhatian berat pukan pada perusahaan ini yang dari kaum2 tani hendak-lah di-tumsa-harus-nya tidak-lah boleh dipisahkan dari lapangan pertanian kita.

Demikian-lah sadikit sa-banyaknya menganai chara2 memajukan pertanian de-negeri ini dan saya yakin bahawa kemajuan negeri ini ada-lah tergantong pada pertatanian saperti yang di-ta'arifkan oleh James A. Garfield ia-itu "Diatas segala kemajuan sains dan Sastera, segala perusahaan yang tamadun dan berkamajuan, kita dapati bahawa pertanian la-lah puncha segala perusahaan dan penghidupan manusia— bukan-nya kekutuan tentera yang memusnahkan dan bukan-nya peragangan yang mengumpulkan."

RIWAYAT LALANG

Oleh Radzwan bin Hussein

"Aku-lah maharaja rumput dalam
negeri,
Bermastautin di-ladang2 pa'tani;
Aku gagah, aku juga berani,
Akar-ku tajam saperti duri,
Daun-ku kasar dan tegak berdiri.
Aku menghalang kemajuan pa'tani,
Yang mengasah tulang sa-tiap hari
Sunggoh kasehan rasa di-hati,
Tetapi... ah ... siapa peduli!
Bunga-ku puteh saperti perak,
Bayu meniup merupai ombak,
Sunggoh indah di-waktu pagi,
Masa sang suria memnunjokkan
diri"

.....kata lalang.
Hai lalang, jangan kau berbesar
hati,
Di-satumasa nanti kau akan di-
hapusi;
Ingat-lah kau sa-belum itu,
Berjaga2lah dengan kata-mu
Suatu hari, si-peladang datang,
Membawa alat memanchut di-be-
lakang;
Menyembor lalang dengan siang,
"Amboi...sejok rasa daun-ku,
Baik sunggoh peladang terhadap-
ku,"
Tetapi apabila sang suria meman-
chor.
"adoh! — sakit-nya rasa badan-ku,
Haipeladang, apa yang kau sem-
boritu?
Lemah rasa akar-ku,
Begegar rasa segala anggotu ku"
Wahai peladang apakah itu?

Yang menyakitkan rasa.....
anggota ku?

.....tanya lalang.
" Ha . . Ha " kata si-peladang,
Masakau sudah pun datang,
Sekarang terima-lah wahai lalang,
Rachun untok-kau pergi menghi-
lang"
Suria terek lalang pun kechut,
Daun layu di-tiup pun kechut,
Daun layu di-tiup ribut,
Maka hilang-lah lalang di-ladang,
Gumbira dan mewah hidup pela-
dang.

— P E R T A N I A N —

Di-kemunchak segala sains dan sastra,
di-kemunchak segala tamaddun;
Bukan-lah tempat untok ketentraan . . . . satu science
yang menpahanam,
Dan bukan juga perdagangan, satu sains yang menimbun2,
Tetapi PERTANIAN, ia-lah ibunda kapada segala perusahaan,
dan Penjaga kehidupan manusia.

— *J. A. Garfield.*

Sajak

DESA YANG PERMAI

Aku.....hidup di-Desa,
Aku.....di-lahirkan di-Desa,
Aku.....di-besarkan di-Desa,
Ah!.....semua insan pun
berasal dari Desa!

Nun.....jauh di-atas gunong ganang memunchak tinggi,
sayup.....
Nun.....di-sana banjaran sawah2 padi kelihatan menghijau lebat;
Nun.....di-seberang sana saluran ayer sungai mengalir lambat,
jerneh.....
Nun.....di-sudut sana anak2 bermain2, gelak ketawa, menanggis,
Nun.....di-sana rumah2 berderat panjang, terator berseh,
chantek.....
Nun.....di-angkasa burong2 sedang berdendang sayang;
Ah.....semua-nya chukup indah di-pandang.

Bumi yang berseh di-atapi dek daun2 menghijau,
Lambaian daun2 menyegarkan sa-tiap insan,
Tiupan sang bayu membangkitkan rasa mesra.....
Sinaran sang matahari memberi rahmat pada si-peladang;
Ah.....segala2-nya berguna di-Desa Yang Permai.

Oh.....betapa indah-nya hidup di-Desa,
.....kesenangan, kemewahan, ketenteraman,
dapat di-rasai,
Tapi.....adakah semua insan chintakan
Desa ? ? ? ? ? ? ? ?
Ah!.....tidak, munkin tidak semua insan
chintakan Desa;
Kerana.....

Tapi.....tapi aku,.....aku!
Pendudok Desa,
tetap menchintai, dan mengasehi kau,
Kerana.....kau, kau ada-lah DESA YANG PERMAI,
Ya.....Desa yang akam memberi segala
ka-insafan kapada sekelian Insan.....

Sajian :— "ROSKIAH."

29th March, 63,

MAJLIS PELAJAR-PELAJAR ISLAM 1962/63

Setia Usaha Agong

Majid Kayaat

Yang di-Pertua

Naib Yang di-Pertua

Penolong Setia Usaha Agong

Bendahari

Setia Usaha Persuratan dan Kebudayaan

Setia Usaha Rencham

Setia Usaha Penerbitan

Setia Usaha Agama

PERSATUAN PELAJAR2 ISLAM KOLEJ PERTANIAN PERSEKUTUAN TANAH MELAYU

PENYATA TAHUNAN 1962/63.

Dengan tiba-nya Tahun Pengajian 1962/63 pada 1 hb. Jun 1962 Persatuan ini telah memasokki umor-nya yang kedua belas tahun dan menjadikan Persatuan ini salah satu Persatuan Pelajar2 Islam yang tertua terdaftar di-negeri ini.

Ahli2

Pada tahun ini seramai 15 orang penuntut baharu masok menjadi ahli mengambil tempat yang di-kosongkan oleh ahli2 yang telah keluar, menjadikan jumalah besar ahli2 Persatuan ini kapada 49 orang.

Kewangan

Tabong kewangan Persatuan di-isi dengan wang yuran penggalan dari ahli2 Persataan.

Pentadbiran

Pentadbiran Persatuan ini di-jalankan oleh Majlis Pelajar2 Islam yang di-pileh dalam Meshuarat Agong Tahunan. Ahli2 Majlis Pelajar2 Islam ini ia-lah satu badan kerja yang mentadbirkan perjalanan Persatuan sesudah Meshuarat Agong Tahunan dan berkuasa untok menyelangarakan segala keputusan dan ranchangan2 Persatuan ini.

Ahli2 yang telah di-pileh untok mendudoki kerusi2 dalam Majlis Pelajar2 Islam bagi Tahun Pengajian 1962/63 ia-lah saperti berikut:—

Yang Di-Pertua	...	Sdr. Abdul Majid b. Kayat.
Naib Yang Di-Pertua	...	Sdr. Abd. Ghani b. Ibrahim.
S/U Agong	...	Sdr. Abd. Wahid b. Hj. Azahari.
Pen. S/U Agong	...	Sdr. Sh. Abd. Aziz b. Sh. Abd. Kadir.
Bendahari ...	...	Sdr. Jamlus b. Abu Hashim.
S/U Rencham	...	Sdr. Abd. Aziz b. Yusoff.
S/U Ugama	...	Sdr. Md. Nor b. Ahmad.
S/U Persuratan dan Kebudayaan	...	Sdr. Abdullah b. Chin.
S/U Penerbitan	...	Sdr. Radzwan b. Hussien.

Di-dalam Meshuarat itu juga telah di-lantek dua orang Pemereksa Kira2 dan dua orang Penasehat Kehormat.

Pemereksa Kira2 terdiri daripada:

(1) Sdr. Azman bin Abd. Molok

(2) Sdr. Bajuri bin Shuhada.

Penasehat2 Kehormat pula terdiri daripada:—

(1) Tuan Hj. Mohd. Din bin Ali P.J.K....S/U Majlis Pen-bandaran Kuala Lumpur.
(Barrister at Law Lincoln's Inn)
(Diploma Of Arts Raffles College)

(2) Inche Ahmad bin Baba...Pensharah Kanan, Kolej Pertanian PTM, (M.Sc)

Oleh kerana Pelajar2 Tahun III, telah menerima Diploma mereka dan keluar daripada Kolej ini pada akhir Penggal II, maka pentadbiran Persatuan ini pada Penggal III dan waktu sementara dalam permulaan Tahun Pengajian 1963/64 di-peggang oleh Majlis Pelajar2 Islam Sementara. Ahli2 Majlis Pelajar2 Islam Sementara ada-lah di-pileh oleh Majlis Pelajar2 Islam tetap. Mereka ada-lah terdiri daripada:—

Yang Di-Pertua	...	Sdr. Sh. Abd. Aziz b. Sh. Abd. Kadir.
Naib Yang Di-Pertua	...	Sdr. Dzulkifli b. Mohd. Nor.
S/U Agong	...	Sdr. Abdullah b. Chin.
Pen. S/U Agong	...	Sdr. Bunsu b. Shamsudin.
Bendahari ...	...	Sdr. Jamlus b. Abu. Hashim.
S/U Rencham	...	Sdr. Abd. Aziz b. Yusoff.
S/U Ugama	...	Sdr. Md. Nor b. Ahmad.
S/U Persuratan dan Kebudayaan	...	Sdr. Abdullah b. Ismail.
S/U Penerbitan	...	Sdr. Radzwan b. Hussien.

Meshuarat

Sa-hingga penyata ini di-tulis ha-nya satu Meshuarat Agong sa-haja yang telah di-adakan ia-itu Meshuarat Agong Tahunan.

Meshuarat bagi Majlis Pelajar2 Islam telah di-adakan sa-bulan sa-kali.

Jawatan Kuasa Tadbir PPIKPPTM Tahun Pengagian 1962/63.

Oleh kerana Pelajar2 Tahun III keluar daripada Kolej ini pada akhir Penggal II maka Jawatan-Kuasa2 Tadbir pada Penggal III dan waktu sementara permulaan Tahun Pengajian 1963/64 di-gantikan dengan Jawatan-Kuasa2 Tadbir Sementara.

1. **Jawatan Kuasa Tadbir Rencham.**

Ahli2 Jawatan Kuasa Tadbir Rencham terdiri dari:—

Pengurusi ...	...	Sdr. Abd. Ghani b. Ibrahim.
Setia Usaha	...	Sdr. Abd. Aziz b. Yusoff.
		Sdr. Alang Perang Abd. Rahman b. Zainuddin.
Ketua Film	...	Sdr. Ishak b. Saad.
Ketua Sokan	...	Sdr. Dzulkifli b. Md. Nor.
Ahli2 ...	...	Sdr. Ahmad Shapiei b. Panjang Ahmad.

Ahli2 Jawatan Kuasa Tadbir Rencham Sementara pula terdiri dari:—

Pengurusi	...	Sdr. Dzulkifli b. Md. Nor.
Setia Usaha	...	Sdr. Abd. Aziz b. Yusoff.
Ketua Sokan	...	Sdr. Ishak b. Saad.
Ketua Film	...	Sdr. Alang Perang Abd. Rahman b. Zainuddin.
Ahli2	...	Sdr. Ramli b. Abd. Rahman.
		Sdr. Shahbuddin b. Shafei.

Ranchangan2 yang telah di-jalankan:—

Penggal I :- (1) Menyambut Pelajar2 dan ahli2 baharu dengan mengadakan satu jamuan teh.

(2) Menyambut Hari Keputraan Nabi Muhammad S.A.W. dengan mengadakan Majlis Forum dengan Pensharah2 dari K.L.

Penggal II :- (i) Membuat satu lawatan muhibaah ka-Kolej Islam di-Klang serta mengadakan satu perlawanan bola sepak sechara persahabatan dengan penuntut2 Kolej itu.

(ii) Memungut derma untok kebajikan.

(iii) Mengadakan satu jamuan selamat berpisah untok Penasehat Kehormat kita, Che Ahmad bin Baba dan juga Pelajar2 Tahun Akhir.

Penggal III :- Mengadakan satu jamuan teh untok menyambut kedatangan Bulan Puasa.

Jawatan Kuasa Tadbir Rencham juga ada mengadakan pertunjokkan wayang gambar sa-bagai hoboran dan pelajaran untok ahli2 sekalian.

2. **Jawatan Kuasa Tadbir Ugama.**

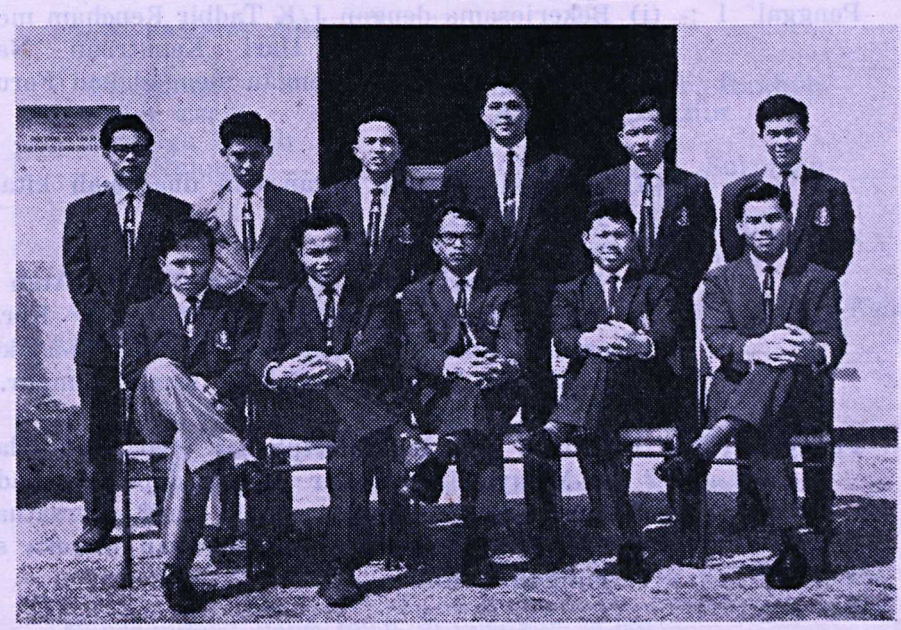
Ahli2 Jawatan Kuasa Tadbir Ugama terdiri dari:—

Pengurusi	...	Sdr. Abd. Majid b. Kayat.
Setia Usaha	...	Sdr. Md. Nor b. Ahmad.
Ahli2	...	Sdr. Hanafi b. Awang.
		Sdr. Atan b. Abu Bakar.
		Sdr. Zainal Ariffin b. Bahari.
		Sdr. Shafie b. Hashim.

Ahli2 Jawatan Kuasa Tadbir Sementara Ugama pula terdiri dari:—

Pengurusi	...	Sdr. Sh. Abd. Aziz b. Sh. Abd. Kadir.
Setia Usaha	...	Sdr. Md. Nor b. Ahmad.
Ahli2	...	Sdr. Hanafi b. Awang.
		Sdr. Atan b. Abu Bakar.
		Sdr. Shafie b. Hashim.
		Sdr. Abu Bakar b. Tambi.

AHLI2 JAWATAN-KUASA2 TADBIR PERSURATAN DAN KEBUDAYAAN DAN RENCHAM



Dudok (Dari kiri): Sdr2. Azman Abdullah, Abd. Ghani, Abd. Aziz dan Ahmad Shape.

Bediri (Dari kiri): Sdr2. Abd. Malek, Shahbuddin, Bun Su, Dzulkifli, Ishak dan Alang Perang.

AHLI2 JAWATAN-KUASA,2 TADBIR PENERBITAN DAN AGAMA

Dudok (Dari kiri): Sdr. Shukri, Sdr. Wan Teh, Sdr2. Radzwan Abd. Majid, Mohd. Nor, Shafie dan Zainal Ariffin.

Berdiri (Dari kiri): Sdr2. Bun Su, Nshak, Abdullah, Abd. Rahaman Atem dan Hanafi.

Ranchangan2 yang telah di-jalankan.

Penggal I :- (i) Bekerjosama dengan J/K Tadbir Rencham mengadakan sambutan Hari Keputraan Nabi Muhammad S.A.W. dengan mengadakan Forum Ugama.

(ii) Membeli sa-buah Koran dan dua buah kitab2 suchi.

(iii) Menghantarkan sa-orang wakil Sdr. Atan b. Abu Bakar ka-Peraduan Membacha Koran antara Maktab2. Peraduan ini telah di-adakan di-Maktab Perguruan Bahasa Kuala Lumpur.

Penggal II :- (i) Dengan jasa baik Pertubohan Kebajikan Islam sa-Malaya J/K Tadbir Ugama dapat mengadakan Kelas2 Ugama untok ahli2 Persatuan. Pensharah2 mengadakan sharahan mereka saminggu sa-kali.

(ii) Mengadakan Forum Ugama yang bertajok "Mengapa Ugama Islam kurang papular di-kalangan Bangsa Asing di-negeri ini" Ahli2 yang mengambil bahagian dalam Forum ini ia-lah:—

(1) Tuan Hj. Mohd. Din b. Ali PJK.

S/U Majlis Perbandaran Kuala Lumpur.

(2) Tuan Dr. Mohd. Zaki bin Badawi
Pensharah dari University Malaya.

(iii) Mengadakan serie perkelilingam pelajaran Ugama.

(iv) Membeli dua sejadah untok bilek sembahayang.

(v) Mengutip derma daripada ahli2 Persatuan untok membeli Koran dan kitab2 suchi.

Penggal III :- (i) Menyambongkan Kelas2 Ugama dari Penggal II.

(ii) Mengadakan serie perkelilingam pelajaran ugama.

(iii) Membeli kitab2 suchi.

3. Jawatan Kuasa Tadbir Persuratan Dan Kebudayaan.

Ahli2 Jawatan Kuasa Tadbir ini ia-lah:—

Pengurusi ...	...	Sdr. Abdul Ghani b. Ibrahim.
Setia Usaha	...	Sdr. Abdullah b. Chin.
Penjaga Kutub Khanah	...	Sdr. Abd. Malak b. Sulaiman.
Ahli2 ...	...	Sdr. Azman b. Molok.
		Sdr. Bunsu b. Shamsudin.
		Sdr. Shahbudin b. Shafie.

Ahli2 Jawatan Kuasa Tadbir Sementara Persuratan dan Kebudayaan ia-lah:—

Pengurusi ...	...	Sdr. Dzulkifli b. Md. Nor.
Setia Usaha	...	Sdr. Abdullah b. Ismail.
Penjaga Kutub Khanah	...	Sdr. Shahbudin b. Shafei.
Ahli2 ...	...	Sdr. Azman b. Molok.
		Sdr. Abd. Malek b. Sulaiman.
		Sdr. Zainol Rashid b. Md. Daud.

Ranchangan2 yang telah di-jalankan ia-lah:—

Penggal I :- (i) Membeli buku2 cherita untok Kutub Khanah. Sa-banyak 6 buah cherita telah di-beli untok penggal ini.

(ii) Membeli pirang2 hitam untok hiboran ahli2 Persatuan Tiga buah piring hitam mempunyai 6 buah lagu telah di-beli.

(iii) Dengan kerjasama pehak Persatuan Pelajar2 Kolej Pertanian J/K Tadbir Persuratan dan Kebudayaan telah berjaya membuat perayaan bagi menyambut Bulan Bahasa Kebangsaan pada dua malam berturut2.

Penggal II :- (i) Membeli buku2 cherita untok Kutub Khanah. Enam buah buku cherita telah di-beli.

(ii) Membeli piring2 hitam. Sa-banyak 2 buah piring hitam yang mengandongi 8 buah lagu telah di-beli.

(iii) Dengan ikhsan Jabatan Penerangan PTM pehak J/K Tadbir ini dapat mengadakan Kelas2 Tarian Nasional untok ahli2. Kelas2 ini di-adakan saminggu sa-kali di-bawah anjoran Che Puteh binte Sa'ad dari Jabatan Penerangan PTM.

Penggal III :- Oleh kerana kekurangan wang J/K ini tidak dapat membeli buku2 cherita dan menyambongi Kelas Tarian Nasional. J/K ini dapat membeli 2 buah piring hitam mengandongi 6 buah lagu untok Penggal ini.

Sa-lain daripada rachangan2 yang di-atas pehak J/K ini juga ada membeli surat khabar "Utusan" dan majallah2 bulanan saperti Mestika, Dewan Bahasa, Muslim News dan Majallah Filem untok bachaan ahli2 Persatuan. Pehak Jawatan Kuasa ini ada juga menerima bantuan buku2 untok Kutub Khanah daripada pehak Penguasa Kolej dan ahli2 dermawan. J/K ini juga telah memberi pinjaman buku2 cherita dari pada Kutub Khanah kapada ahli2 sa-minggu sa-kali.

4. **Jawatan Kuasa Tadbir Penerbitan.**

Ahli2 Jawatan Kuasa ini terdiri daripada:—

Pengurusi ...	...	Sdr. Abd. Majid b. Kayat.
Setia Usaha (pengarang)	...	Sdr. Radzwan b. Hussien.
Penolong Pengarang	...	Sdri. Wan Teh binti Musa.
	...	Sdri. Wan Teh binti Musa.
Pengurus ...	...	Sdr. Ishak b. Saad.
Juru Taip ...	...	Sdr. Bunsu b. Shamsudin.
Juru Lukis ...	...	Sdr. Shukri b. Ismail.
Pembacha Peruf	...	Sdr. Abdullah b. Ismail.
		Sdr. Abd. Rahman b. Md. Nor.

Ahli2 Jawatan Kuasa Tadbir Sementara Penerbitan pula terdiri daripada:—

Pengurusi ...	...	Sdr. Sh. Abd. Aziz b. Sh. Abd. Kadir.
Setia Usaha (Pengarang)	...	Sdr. Radzwan b. Hussien.
Penolong Pengarang	...	Sdri. Wan Teh binti Musa.
Pengurus ...	...	Sdr. Ishak b. Saad.
Juru Taip ...	...	Sdr. Alang Perang Abd. Rahman b. Zainuddin.
Pembacha Peruf	...	Sdr. Abd. Rahman b. Md. Nor.
		Sdr. Zainal Abidin b. Mohammad.

Jawatan Kuasa ini telah berjaya dalam chita2-nya untok memperbaikki mutu pengeluaran lidah rasmi Persatuan ini ia-itu "Agraria". Penerbitan "Agraria" pada tahun ini ada-lah berbentok saperti surat khabar dan mengandongi 12 muka. J/K ini telah dapat membuat satu pengeluaran sahaja ia-itu pada Pengga II.

Lain2 Perkara.

(i) Siaran Radio: Sdr. Naib Yang Di-Pertua telah di-bergi tugas untok menyelanggarakan segala kerja dan urusan Persatuan ini dengan pehak Radio Malaya. Karangan2 dan skrip2 telah di-hantar untok Siaran Radio.

(ii) Kelas Perchuma: Pada tahun ini Persatuan ini telah menjalankan dua Kelas Perchoma untok penuntut2 yang mengambil Peperiksaan masok ka-sekolah menengah. Kelas Perchoma ini di-jalankan dalam Bahasa Melayu dan Inggeris. Sa-ramai lebeh kurang 70 penuntut2 daripada kawasan sa-keliling Kolej telah mengikuti Kelas Perchoma ini. Kelas ini telah di-selanggarakan oleh Sdr. Setia Usaha Agong dan guru2 nya terdiri daripada ahli2 Persatuan sendiri.

(iii) Lawatan-Sambil-Belajar Ka-Bangkok: Persatuan ini sakali lagi menganjorkan satu lawatan-sambil-belajar ka-luar negeri dan kali ini mutalamat yang di-tujui ia-lah Bangkok. Untok menguruskan lawatan ini Sdr. Pen. Setia Usaha Agong telah di-beri tugas sa-bagai Pegawai Perhubongan Luar dan Sdr. Setia Usaha Ugama menjadi Bendahari untok lawatan yang akan di-adakan pada bulan April 1963. Saramai 12 pelajar2 akan mengikuti rombongan itu.

(iv) Kad Selamat Hari Raya: Sdr. Setia Usaha Agong telah ditugaskan untok membuat kad2 selamat hari raya untok di-jual kapada ahli2 Persatuan.

(v) PPIKP dan PKPIPTM: Sa-hingga report ini di-tulis PKPI belum lagi mengadakan Meshuarat Agong-nya. PPIKP menghantar wakil2-nya ka-Meshuarat Badan Peranchang Seminar Pelajar Islam sadunia anjoran PKPIPTM. Pehak PPIKP menyokong penoh akan chita2 PKPI itu.

Penhargaan

Persatuan ini menguchapkan sa-tinggi2 terima kaseh kapada penasehat2 kami yang telah sudi memberi nasehat dan pertolongan mereka yang tidak berbelah bagi untok kebaikan Persatuan ini. Persatuan ini juga menguchapkan ribuan terima kaseh kapada Jabatan Penerangan PTM yang telah memberi sa-orang juru tari tarian nasional untok mengajar ahli2 Persatuan ini juga dan juga kapada Pertubohan Kebajikan Islam sa-Malaya yang telah menghantar pensharah2 untok Kelas Ugama kami. Kapada Tuan Pengetua Kolej Pertanian, PPIKP menguchapkan terima kaseh atas segala pertolongan-nya dan juga kerana memberi kebenaran kapada Persatuan ini menggunakan Bilek2 Sharahan untok menjalankan Kelas2 Perchoma Persatuan. Kapada sekalian ahli2 yang telah memberi pertolongan sadikit sa-banyak untok kebaikkan Persatuanini PPIKP juga menguchapkan terima kaseh.

Sekian-lah dan terima kaseh.

BERTANI UNTOK BERBAKTI!

Kolej Pertanian PTM,
Serdang,
Selangor.
10hb. Mach, 1963

Di-susun oleh:
ABDULLAH BIN CHIN
Setia Usaha Agong Sementara
PPIKPPTM 1962/1963.

NAME AND ADDRESSES OF 1ST YEAR STUDENTS

1. Zainal Abidin bin Mohammad,
626, Jalan Raub,
Transit Quarters, Kuantan,
Pahang.

2. Shafie bin Hashim,
Kampong Pulau Berangan,
Labu, Seremban.

3. Makeswaran s/o Subramaniam,
No. 7, Lot 7, Section 48,
Jalan Kolam Ayer,
Sentul, Kuala Lumpur.

4. Leong Kai Hoou,
189, Jalan Incinerator,
Telok Anson, Perak.

5. Abdul Malek bin Sulaiman,
Padang Sebang, Alor Gajah,
Melaka.

6. Alang Perang Abdul Rahman bin Zainuddin,
119A Bukit China Road,
Melaka.

7. Ramli bin Abdul Rahman,
6 Kg. Wan Abdullah,
Kangsar, Perlis.

8. Loh Wai Choong,
440 Chulia Street,
Penang.

9 Chee Yan Kuan,
16 Jalan Ismail,
Segamat, Johore.

10. Abdullah bin Ismail,
101 Kedai Manir,
Kuala Trengganu,
Trengganu.

11. Radzwan bin Hussain,
2¼ Kuala Pilah Road,
Ampngan, Seremban,
Negri Sembilan.

12. Chan Yew Cheong,
5 Fair Park,
Ipoh, Perak.

13. Hanafi bin Awang,
237 Tanjong Che' Mas,
Tumpat, Kelantan.

14. Atan bin Abu Bakar,
Seri Bukit Batu,
Bakri, Muar,
Johore.

15. Yeoh Yee Hong,
75 Murray Street,
Seremban,
Negri Sembilan.

16. Wong Tee Kia,
32 Jalan Bahru,
New Village 2,
Tangkak, Johore.

17. Ishak bin Mohd. Saad,
10 M/S Rumbia,
Alor Gajah,
Malaka.

18. Wong Non Lin,
c/o Jasin English School,
Jasin, Melaka.

19. Abdul Rahman bin Mohd. Nor,
Kampong Tengah,
Parit, Perak.

20. Thomas OOi Teck Wang,
7 Nervara Terrace,
Penang.

21. Bunsu bin Shamsuddin,
85 Jalan Dagang,
Batu Pahat,
Johore.

22. Miss Hope Lau,
187 Jalan Salleh,
Muar, Johore.

23. Shahabudin bin Shafie,
Langgar, Alor Star,
Kedah.

24. Mohd. Shukri bin Ismail,
49 Batu 2, Jalan Kuala Kedah,
Alor Star, Kedah.

25. Abu Bakar bin Tambi,
T. S. 29, Jalan Lama,
Muar, Johore.

26. Zainol Rashid bin Mohd. Daud,
Kampong Alor Terang,
Batu 3½, Jalan Sungei Korok,
Alor Star, Kedah.

27. Christopher Teo Kheng Hoe,
179 Wakaf Bharu,
Kelantan.

SECOND YEAR STUDENTS

1. Ng Kim Foh,
   56, Road 14/1,
   Petaling Jaya,
   Kuala Lumpur.

2. Abdullah b Chin,
   181, Jelempok,
   Arau, Perlis.

3. Ani b Saad,

   Kg. Kota Jalan Hospital,
   Kangar, Perlis.

4. Azman b Molok,
   8, Kiernan Crescent,
   Rahang Square,
   Seremban. N. S.

5. Pawanteh b Che Din,
   132-B, Bagan Luar Road,
   Butterworth,
   P. Wellesley.

6. Chan Jenn Kwang,
   4, Cochrane Road,
   Kuala Lumpur.

7. Syed Barkat b Syed Ali,
   398, Bukit Alwi,
   Kulim, Kedah.

8. Teoh Seng Loon,
   31, Irrawaddy Road,
   Penang.

9. Goh Ah Bah,
   24, Jalan Ungku Ahmad,
   Merdeka Estate,
   Batu Pahat, Johore.

10. Chin Swee Joo,
    2215-C, Prigg it Road,
    Melaka.

11. Mohd. Nor Ahmad,
    17½, M. S. Masjid Tanah,
    Melaka.

12. Ismail b Shamsuddin,
    Kampong Bahru,
    Rembau,
    Negri Sembilan.

13. Nik Hasan b Nik Sulaiman,
    1660, Jalan Merbau,
    Kota Bahru, Kelantan.

14. Ooi Cheng Hock,
    50, Irrawaddy Road,
    Penang.

15. Abdul Malik b Mustapha,
    33, Jalan Sulaiman,
    Muar, Johore.

16. Jamlus b Abu Hashim,
    Kampong Bahru,
    Ampangan, Seremban.

17. Gajuri b Suhada,
    Batu 35, Jalan Johore,
    Pontian, Johore.

18. Nga Nguk Sik,
    No. 170, Kampong Koh Road,
    Sitiawan, Perak.

19. Abdul Aziz b Sheikh Abdul Kadir,
    Rasah Road, Seremban,
    Negri Sembilan.

20. Abdul Aziz b Yusof,
    287, Balek Pulau,
    Penang.

21. Dzulkifli b Mohd. Nor,
    Kampong Kuala Klawang,
    Jelebu, Negri Sembilan.

22. Rosli b Kassim,
    Kampong Sungei Machang Ulu
    P. A.Lenggeng,
    Negri Sembilan.

23. Ho Dua Tiam,
    4, Padang Temu,
    Malacca.

24. Miss Wan Teh bt Musa.

THIRD YEAR STUDENTS

1. Lum Wee Meng,
K115, Kepayang,
Fair Park,
Ipoh, Perak.
2. Lim Han Hong,
45, Main Road,
Triang, Pahang.
3. Ibrahim b Mohd. Ghaus,
C/o Penghulu Mohd. Ghaus,
27th Mile, Kuala Sg. Bahru,
Melaka.
4. Abdul Razak b Abdullah,
22, Rahang Square,
Seremban, Negri Sembilan.
5. Mohd. Isa b Haji Sulaiman,
Parit 8, Chikus,
Telok Anson, Perak.
6 Daud Amin,
Trengganu.
7. J. B. Chan,
74, Tanjong Tokong Road,
Penang.
8 Zainon bt Hashim,
22¼ Milestone, Kg. Pulau,
Sebang,
Tampin, Negri Sembilan.
9. Tan Keat Leong,
19Q, Zoo Road,
Penang.
10. Lin Choon Moey,
27, Jalan Teng Tuee,
Pekan, Pahang.
11. Lam Sang,
25, Main Road,
Lahat, Perak.
12. Mak Khong Hee,
8, Jalan Tanjong,
5/11, Petaling Jaya,
Kuala Lumpur.
13. Choa Swee Lin,
201, Bukit Koman,
Raub, Pahang.
14. Jullan Yeoh,
29, Kebun Nyor Road,
Penang.
15. Shafi Ahmad,
19th Mile, Ayer Tawar,
Perak.
16. Nik Mohd Yusof b Ismail,
4661A, Jalan Pasir Puteh,
Kelantan.
17. Abdul Wahid b Haji Azahari,
5-8, Jalan Kluang,
18. Zainol b Hamid,
c/o 778, Kampong Raja,
SungaiPatani,
Kedah.
19. Long Siew Tow,
6B, 4¼ Mile, Ipoh Road,
Kuala Lumpur.
20. 20. Abdul Majid b Kayat,
1359, Jalan Temenggong
Ahmad,
Johore Bahru, Johore.
21. Dzulkifli b Nawawi,
148, Kampong Dong,
Raub, Pahang.
22. Hassan b Saidi,
13¼ Mile, Cheras Road,
Kajang, Selangor.
23. Nah Boon Yeow,
78C, Batu Lanchang Road,
Penang.
24. Soo Lip Tan,
10, Wall Strret,
Kuantan, Pahang.
25. Zainal Ariffin b Bahari,
274, Mk. F. Balik Pulau,
Penang.
26. Abdul Ghani b Ibrahim,
44128, Kebun Sultan,
Kota Bahru, Kelantan.
27. Ahmad Shapiei b Panjang
Ahmad,
Kampong Talang Masjid,
Kuala Kangsar,
Perak.
28. Ahmad b Othman,
Police Barracks,
Serdang, Kedah.
29. Chong Tong Soo,
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