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The Madras Forest College Magazine.

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THE

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"Some aspects of my work and experiences in the first few years after I joined the Forest Department of my Province on completion of my training at the Madras Forest College".

Prize essay for the "Indian Forester" prize 1939, for past students (First Prize).

By P. S. Sivaramakrishnan, B. A., M. R. H.,
(1934–36 Dn.)
Trained Forester, Palghat Division,
Madras .

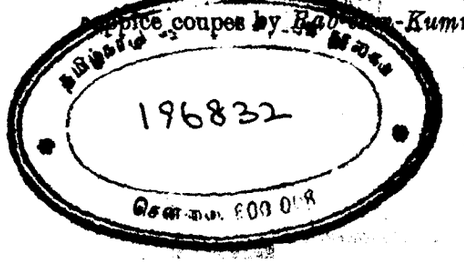
When I left the College I was put in charge of sandalwood extraction from Gundri Felling Series in North Coimbatore Division. During a short stay at Kadambur and Gundri villages I was greatly impressed at the way in which the Forest Department is helping the poor villagers by providing them with work in enumeration, tending and extraction of Sandalwood. We engage them too in opening out new extraction paths and on repair of the existing roads. The sums so spent go to augment the income of the rural population whose main occupation is agriculture. Besides, many cartmen are employed in carting

the rough cleaned sandalwood from the Forest Depot to the Sale Depot at Satyamangalam at handsome rates. At the Sale Depot, the skilled workmen earn good wages by attending to the final cleaning billeting and classification of sandalwood.

Within a couple of months, I found myself in a different sphere of activities in Palghat Range. There my main duty was tending of Teak in Elival Plantations. The fact that Teak is exceptionally easy to raise artificially has resulted in Teak being planted wherever possible in order to meet the ever increasing demand for Teak which still remains one of the best all round timbers of the world.

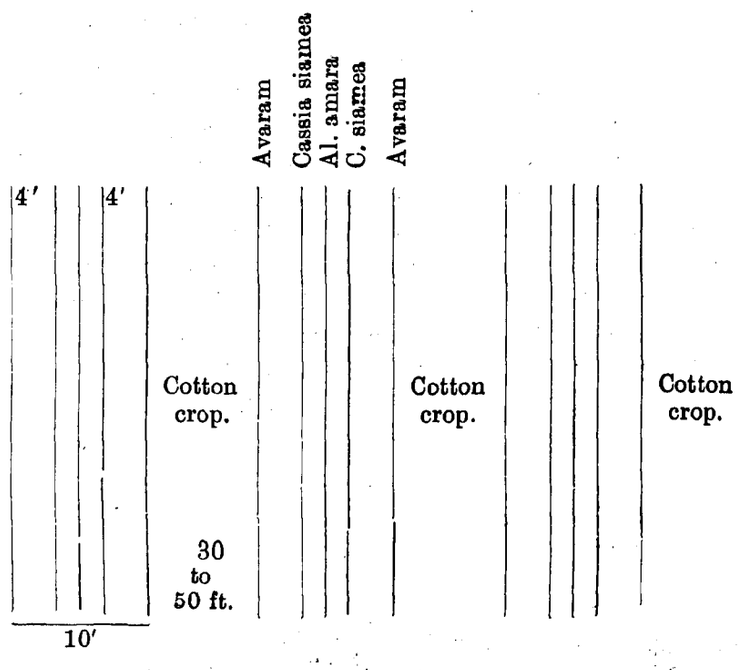
Leaving Palghat Range after two months I had the chance to put into practice the engineering side of M.F.C. training. The old Rest House at Poochipara in Silent Valley had collapsed. It had to be reconstructed urgently and the work was given to me. Poochipara is 16 miles from the nearest village and the whole of this distance is inaccessible by wheeled traffic. I had the building facing North East to get maximum protection from monsoon. The Rest House consisted of a sitting room 16′ by 12′, a bed room 14′ by 12′ 2 bath rooms near the bed room, 10′ by 6′ and a matey room 10′ by 12′ with a covered passage 8′ by 4′ leading to it from outside. It was not the usual serambi type. It was built over 18 Mesua ferrea pillars 9″ square over a plinth of 3′ high built of rough stone in clay. The whole building with a three-roomed outhouse in rough stone in clay roofed with Mangalore tiles cost Rs. 2, 218/- against the estimated amount of Rs. 2,200. This construction gave work and wages among skilled and unskilled labour of the country round Mannarghat to a radius of 10 miles.

June 1937 found me in an entirely different sphere of activities in Bolampatty valley. In 1933 regeneration of [illegible] coupes by *Rab-cum-Kumri method* was tried successfully



in Ayyalur Range, Madura Division and the Chief Conservator of Forests ordered to extend the method widely and so I had to introduce it in the fuel coupes of Bolampatty valley. This method is a very significant development in forestry. The ancient and terribly destructive and wasteful practice of shifting cultivation has been adapted to establish highly productive fuel coupes in place of forest which contained only a small proportion of useful timber and fuel tree species. The advantage of this method is that we get our coupes regenerated free as the villager who raises the agricultural crop has to look after the regeneration and tending of the forest tree crop as part of his obligation. It gives more leisure to the Beat subordinates who now regard the recent Rab regeneration as a nuisance, *and it helps in establishing a sense of responsibility for forest growth among the ryots* who are proud to show the inspecting officers that they have done a good year's work for themselves and for the Department.

I started Rab-cum-Kumri method in Mullangadu coupe XII and Iruttupallam coupe I in July 1937. Being the first year, the coupe lessee heaped the felling debris in lines (not patches) with half chain intervals. The width of a line was 10′ and the height of debris 4′ when closely packed after beating with heavy sticks. My care and attention in getting the stuff closely packed was rewarded by the successful establishment of seedlings and the comparative absence of weed growth later. The burn was done departmentally. Besides this method, I had instructions to raise a crop of Avaram (Cassia auriculata) also in the fuel coupes. Both these works were done in one operation. The regeneration area was divided among Kumridars at the rate of one rab line with avaram on both sides for each Kumridar. The intervals between regeneration lines varied from 30 to 50 feet according to the lay out of the rab piling to which the amount of felling debris available was the limiting factor. The Kumridar's obligation was to work up the soil in five furrows to a depth of 9″ as shown below.



Ploughing the area was tried. The plough did not work well due to lack of moisture in the soil and obstruction of numerous stumps and roots. Therefore the ash got from the good burn was mixed with the soil with the tool called mamatti. Untreated seeds of Cassia siamea, Acacia ferruginea, Acacia leucophloea, Albizzia lebbek, Albizzia amara, Azadirachta indica, Tamarindus indica and Cassia auriculata were dibbled in the prepared seed beds and covered to their own depth. The arrangement of beds was as shown in the diagram. The avaram lines were kept 4 to 5 feet away from Cassia siamea lines *as avaram will not stand a drip.* In 1938 area Teak stumps one year old were tried in lines 6′ apart from one another and have now (April 1939) grown to a height of 1 to 2 feet as seen in the photograph * enclosed. After completing the work of

* Not printed.

these lines the Kumridars worked up the soil in between and raised a crop of cotton. My superior officers reproved me however for allowing a cotton crop inside the forest. In Iruttu-pallam coupe "Varagu" was sown with good success and though several elephants visited the coupe none ate it. After all that was said and done I am glad to say the cotton crop raised in Mullangadu was acknowledged to be the best crop in those parts. Forty acres of crop gave a net return of Rs. 1,350/- to the Kumridars. The regeneration area was kept clean weeded, Lantana was kept down and fuel species and avaram looked quite healthy. (There was no insect attack in Mullangadu coupe XXII although in a non-kumri coupe in Thenkaradu series near Walayar Avaram was attacked by an insect. The caterpillars have been sent to the Government entomologist at Coimbatore for investigation). The Cotton crop did no harm to the tree species while it filled the ryots' pockets with money.

When I visited the area in April 1939 Cassia siamea had shot up to an average height of 9 to 10 feet; Neem 6′, Albizzia lebbek and amara, Acacia ferruginea and leucophloea, each 4′ Tamarind 2 to 3 feet and Avaram 4′. Avaram has come up very well and the Conservator has encouraged us to continue "*the excellent work*" in this direction. Avaram is now in flower.

My short experience with the Rab.cum-Kumri method shows that a good burn and careful soil preparation give success. From an economic point of view this method is to our best advantage. The regeneration work is done by villagers under our close supervision and this means saving of money to Government under the regeneration estimates for fuel coupes. In the agreements entered into with Kumridars we make it obligatory on them to help us in our departmental works within 8 miles radius of the regeneration area at local rates. Thus *our labour force is strengthened for protecting and improving the forests which is our national asset.* Above all a close

contact is being maintained between the ryots and the Department and this will surely be to mutual advantage

August 1938 found me in Kanavara Shola in search of Poon (*Calophyllum elatum*) poles for use as electric posts at Coimbatore and short length logs of Poon to meet an order from the G. I. P. Railway. Wooden electric posts in place of iron posts are under investigation. I was followed by a wild elephant once in the year 1936 and my experiences with wild elephants may form the subject of another essay. In the same period I detected† four persons in the act of cooking the flesh of black monkey and jungle fowls inside the Reserved Forest.

In December 1939, I constructed a Rest House in Kanavara Shola with a varandah and a bath room on the model of Poochipara and was congratulated by my District Forest Officer. The building cost Rs. 638/- and again I was able to relieve unemployment among the labouring classes of the locality to the extent covered by this amount.

January of the current year 1938 saw me re-aligning a portion of a cart track which is to tap the Forests of Konamalai valley. My orders were to eliminate two zig-zags which found place in the alignment made by the Working Plans Party in 1935. The Conservator of Forests, Ooty Circle, inspected the alignment. Earth work was taken up by me at the end of February on the lines which I had estimated for. When the road is completed in April the village coupes can be worked and this will be to the great advantage of the villagers in Mathipalayam belt. The opening of village coupes is one of the ways in which the Forest Department is helping the rural population. Village coupes provide the villages near the Reserved Forests with timber, fuel and agricultural implements. The contractors of these coupes are required to sell their produce within 6 miles radius of the coupes at the rate of one anna per head load and

† Details of the sequel are withheld as the case is now *sub judice* in the Joint Magistrate's Court, Coimbatore. — *Ed.*

one Rupee per cart load. The regeneration of these coupes is by the Rab-cum-Kumri method preference being given to Hill tribes and depressed class people as Kumridars.

The various ways in which the Forest Department helps to solve the problems of unemployment and of improvements of cottage industries have greatly impressed me. There is no part of the year in which a Forest subordinate is at leisure and this means that he is always on some job or other. It may be a demarcation of boundary, an enumeration of growing stock or a tending, felling and logging timber; transport of timber, fuel or bamboos; fire line clearing or burning; making or repairing roads, paths, bridges, or buildings; often in out of the way and unhealthy localities. These works are being executed through the local labour and thus the labouring section of the rural population around the Reserved Forests is kept employed for a good part of the year. This year 1939 is a famine year in Coimbatore District. It is interesting to note that *the effect of famine is not felt in villages adjacent to the Reserved Forests whereas in Palladam and Dharapuram Taluks which are away from Reserved Forests the effects of famine are felt very keenly due to failure of crops and want of employment.*

The camp that appealed to me most: Nedungayam.

By X. M. Fernando, Student of the M. F. C. 1937–39 Division.

The very situation of Nedungayam camp, the interesting forest work carried on round about, the wild life and the absence of population all go to make it an ideal camp. Even to a layman the beauty of it would appeal immensely.

Nedungayam is in Nilambur Forest Division in South Malabar, at the western foot of the Nilgiri hills. Owing to the heavy rainfall the country is perpetually garbed in luxuriant green. The total area of government forest in this Division is about 80,000 acres divided into two ranges the Amarampalam and Nilambur Ranges.

Our camp is situated in the Amarapalam Range about 9 miles from Nilambur Railway Station. It is on the bank of the Karumpuzha river overlooked by Mukurti, Nilgiri and Wapshare peaks–which soar over 8000 feet–and it nestles within the teak plantation of 1906 in the vicinity of the 1933 girder bridge. Vegetation is luxuriant owing to the presence of alluvium, the heavy and well distributed rainfall of 125 inches and the climate which is equable throughout the year. The alluvial deposits vary in extent: in some places it is several miles long and it may be as deep as 70 feet. It was washed down long ago by the rivers from the Nilgiri hills above which geologically speaking are very ancient mountains and in their youth perhaps as high as 20,000 feet they stood above sea level. Their present diminished state is due to subaerial denudation. Elsewhere so much erosion would justly be viewed with alarm. But here we have the beneficent results of a rich forest now thriving on the soil brought down.

A forester expecting as he naturally would under such conditions, a beautiful evergreen forest with tall clean boled trees, would be rudely disappointed. The forest is of a moist deciduous type with a few struggling evergreens like *Hydnocarpus wightiana*, *Cinnamomum* and *Macaranga*. This phenomenon must be the outcome of frequent forest fires in the past. A change like this arouses speculation as to whether it is for good or otherwise. Indubitably such a change would not be desirable in places where water supply from perennial streams cannot be depended upon, but in a place like this where the water supply is abundant one should rather consider it beneficial.

The valuable teak area owes its existence to this change. Instead of a multitude of soft-wooded ever-green species of little commercial value there is a rich forest composed of valuable trees like *Tectona grandis*, *Dalbergia latifolia*, *Terminalia tomentosa*, *Terminalia paniculata*, *Anogeissus latifolia*, *Lagerstroemia lanceolata*, *Lagerstroemia flos-reginae*, *Xylia xylocarpa*.

In the 18th and the early part of the 19th century teak was in great demand for ship building. But the authorities realized that teak was fast becoming extinct, owing to this heavy demand. The Revenue Department in whose charge the forests were, opened their eyes to the dangerous situation, and devised a scheme to plant up areas with teak. Under Mr. H. V. Conolly, Collector of Malabar, pioneer of this enterprise, the first 1500 acres of Nilambur plantations were formed between 1841–1855. Mr. Conolly would hardly have realized what a great service he was rendering to India. But the present generation realizes it and has prepetuated the memory of it by reserving 15 acres of the 1846 plantation, at Elenjeri on the bank of Chaliarpuzha, unfelled. This plantation is the oldest in India and besides being a monument it affords the chance to study the later stages of plantation teak. Planting of this timber tree progressed despite occasional floods and to-day 8000 acres of teak plantation contribute to the revenue of the country at the rate of Rs. 15 or so per acre per annum. At present planting is confined to particular places which are suitable for teak. It has been found that teak thrives best on ground with drained sandy loam.

The older plantations are being felled on reaching 70 years of age and being replanted with teak. One cannot be wholly optimistic about second rotation teak until experience shall show it to be of the same quality as the first. Fears have been expressed of soil deterioration. But by ploughing, draining swampy places and planting green manure plants like *Tephrosia candida* they are improving the soil. It is therefore considered that the difference if there be any, in quality between first and second rotation teak at Nilambur is not very pronounced. On ground which is considered unsuitable for teak other valuable timber species are planted. *Dalbergia latifolia*, and *Xylia xylocarpa* are assigned to laterite soil, *Terminalia* to marshy areas and other species like *Swietenia macrophylla* (Mahogany), *Lagerstroemia*, *Pterocarpus dalbergioides* (Anda-

mans Padauk), *Hopea parviflora*, *Anacardium occidentale* (cashew nut), are also planted extensively. Many interesting experiments including a demonstration area of Dr. Craib's theory of thinnings, stump planting with various species, the All India teak seed experiment and underplanting teak with mahogany and *Hopea* were shown to us.

Dr. Craib's theory is that an early and heavy thinning is very beneficial in the case of all light demanding and fast growing tree species. He has based his theory on his experiments with wattle (*Acacia decurrens* and *A. mollissima*). The idea is to free those trees which will form the final crop from all interference and to allow them to grow freely, developing their crown and bole without having to struggle and compete in a close canopy. The old practice of late thinnings rests on the expectation that the fittest will survive. In putting Dr. Craib's theory into practice the stems are not *selected* for the final crop but a mechanical thinning is done by removing alternative diagonal rows, then alternate rows and so on commencing from the fourth year. He is also of opinion that the trees left will be windfirm unlike larger trees which are suddenly isolated and that they will increase wonderfully in girth. This form of thinnings is adopted in the Hardwood Eucalyptus plantations on the hills and in teak plantations at the discretion of the D.F.O.

Swietenia macrophylla (Mahogany) a species from Central America, has been very successfully introduced here and it is steadily spreading. It is subject to an attack by a shoot borer known as *Hypsophylla robusta.* Various ways are tried of averting this menace. The spread of this species is rather interesting. In 1872 an avenue of Mahogany was planted along the road to Chaliarmukku and some of these tower above as high as 100 feet with clean straight boles, the winged seeds have been dispersed by the wind with the result that natural regeneration is profuse and is of many age gradations. The regeneration seemed to be more extensive on the right as we

walked down to the river rather than the left. This phenomenon is explained by the strong wind in one direction when the fruits are ripe.

The overwood in this area, composed of other species, is gradually removed (technically known as canopy manipulation) to enable the young mahogany to grow up and thrive.

The other variety of mahogany, the small leaved one, *S. mahogani*, has also been planted in Nilambur Division here and there but they are not a success, as they look small and unhealthy and have failed to reproduce.

The College camp at Nedungayam is in very close proximity to that part of the river Karumpuzha where the depth permits floating of timber. Above the camp the river is shallow and rocky, consequently the timber is carted down near the camp from the various felling areas and then is made into rafts which are floated down to the places where they can be sold. It is through the medium of this river that the timber is transported without much drain on the pocket of the Government or of contractors, as it is the cheapest form of transport. But for the existence of this river the timber would be of little or no value to the Government.

The river is also an unfailing source of pure unpolluted water for our camp. Nor could any one feign to ignore the delight of a cool dip after a hard day's work. The river contains a variety of fish and affords plenty of entertainment to those with the Chamberlain predilection—not political though —for angling.

At Kanhirakadavu a rather peculiar design is being adopted in building the new bridge and it was of some interest to us. We expect a bridge to be at right angles to the direction of stream flow and to meet its approach road straight. But this bridge takes a bend in the middle at an angle of 153 degrees and it meets the cart road on the right bank at an angle of 90 degrees. The bridge is about 300 ft. long with 12 spans of

varying length. The existing rocks in the bed of the river were utilised for foundations and so the spans had to vary in length. The masonry pillars support cross beams which are huge *Xylia* squares (24 inch squares). On these rest three longitutional beams of *T. paniculata* (30 inch squares). The decking is 3 inch planks of *T. paniculata* and over that are wearing planks 2½ inches thick of the same timber. Each span is independent, so if a high flood washes one away it will not pull the adjoining ones with it.

The charm of a forest is greatly enhanced by the presence of wild living creatures. Unfortunately wherever we went, the disturbances caused by the various operations frightened them out of sight but this camp provided us with some interest in this direction. The ubiquitous crow cawing lustily seemed to be darker and larger than his cousins in inhabited areas. Like his cousins he obviated the necessity of scavengers especially around the kitchens. The paradise tail carrier, whose long tail tradition humorously attributes to the fact that it surreptitiously carried away a piece of cloth put to dry, was much in evidence. The black headed oriole with its golden plumage strutted on the branches. Green pigeons and imperial pigeons camouflaged under the thick green foliage were cooing sometimes. King fishers of bright hues perched dreamily and waited patiently for their prey. Woodpeckers pecked assiduously. Hill mynas, Egrets, Swifts, Bee-eaters, Horn Bills, Honey Suckers, Jungle Fowls—whose presence we learnt of by their regular crowing both at dawn and sunset,—Jungle Babblers, and Ash Doves were numerous. The monkeys up above on the trees were eternally swinging and jumping from branch to branch and causing great damage to exotic trees and in young teak plantations. Malabar squirrels which are protected because of the fear of their becoming extinct were numerous. The jungle brown mice were our unwelcome guests in our camp sheds and were not in any way overscrupulous in their treatment of our woollens and our linen. The shy sambur and spotted deer were there

because we heard their calls occasionally. Extensive working of the soil made it obvious to us that the wild boar existed there. There was an elephant camp near us.

The majority of the local population is composed of Moplas, a hardy muslim community without whom the forest works would suffer greatly, and could hardly be carried on. They seem to have been born for hard work but they must replenish their lost energy with a cup of tea (or "Saya" as they call it) consequently there must necessarily be a tea-shop even in the remotest part of the forest. For the Mopla, life without tea is a blank. Individually they are likeable and harmless but as the Mopla Rebellion of 1921–22 shows us they are a dangerous lot collectively.

The Madras Forest College Students' Club Accounts
For the Year 1937–38 (ending June 30th 1938)

Receipts.	Amount. Rs.	A.	P.	Expenditure.	Amount. Rs.	A.	P.
Opening balance on 1-7-37:				By paid:-			
				Pay of Club peon ...	128	0	0
In Savings Bank Pass Book 1563-11-8				Electric current ...	13	6	0
Cash with the Hon. Secretary 79-8-3 ...	1643	3	11	Repairs to furniture etc. ...	15	0	0
				Club day expenses ..	258	7	9
Subscription from Students etc. ..	457	9	3	Sundries such as cart hire, stationery etc. ...	12	7	0
From S.P. M. R. for rent of club house in July 1937 ..	28	0	0	Other Supdries ...	13	2	9
Cash withdrawn from the Savings Bank ...	40	0	0	Games articles ...	9	3	0
				News papers ('Hindu' 'Times of India' etc)....	56	9	6
Interest on G.P. notes...	20	8	0				
By sale of a G.P. note...	100	0	0	Musical entertainment ...	30	0	0
				Paid for the purchase of G.P. notes...	1676	9	2
				Closing balance:			
				Cash ...	31	7	0
				In pass book ...	45	1	0
Grand Total Rs...	2289	5	2	Grand Total Rs...	2289	5	2

Hockey Matches

Forest College Club v Central Recruits School, Coimbatore.
Won 5–3.

Played on our ground on Thursday March 2nd, 1939. The ground was in splendid condition. K. K. Somayya and R. Nilakantan Nair stood down due to injuries. C. R. S. began with a flourish, hitting hard and after 4 minutes their right inner took a pass from his centre forward and scored with a terrific shot (0–1). The College had no match since 17th Oct 1938 and took time to settle down. We managed to equalise from a breakaway about the 15th minute (1–1), but the Police soon scored again and were leading at half time (1–2). A change came over the game, after half time. The College set up repeated attacks and despite several brilliant saves by the C. R. S. custodian the heavy pressure resulted in 4 goals (5–2). In the last few minutes C. R. S. scored the last goal (5–3). The game was played at a fast pace throughout and was good to watch.

M. F. C. Club XI :—

Goal :- J. P. D. Cunha (Capt.)
Backs :- N. V. Dacha and T. Dawson.
Halves :- V. D. Mehendale, E. Ellery and Mukandan.
Forwards :- L. C. Baktani, F. B. Nazareth, M. Golding, M. D'Monte and J. Doss.
Umpires :- H. I. Shaikh and Sergt. Cooke.

Forest College versus Madukkarai Cement Factory ;
Saturday 11th March 1939.
Won 3—1.

Our captain made his first appearance in the team since his operation for appendicitis on October 14th. He played a very good game at left back, which is less strenuous than his usual place at centre forward. The game was played on our ground. At the start the Forest College stormed their opponents'

goal and forced two penalty corners but on each occasion the Madukkarai goalie saved well. For the next 15 minutes the play was in mid-field mostly and in the 20th minute the College centre forward opened our account from a long pass (1–0). Madukkarai retaliated, but were unable to drive home their advantage the College backs clearing first time and defending well In the opening stages of the second half Madukkarai exerted pressure and our defenders had a gruelling time. Madukkarai scored the equaliser, their right inner swerved past the only defender in his way to run in and beat the College goalie (1–1). The College forwards now got going and after some clever passing the left inner sent in a terrific shot, and the ball glanced off a defender's stick into the net (2–1). After ten minutes play Madukkarai had 3 penalty corners in quick succession but on each occasion their efforts were intercepted. Then the College right inner (Nazareth) ran down and reached a good position in the circle but instead of taking a shot at the goal he played with the ball until he was robbed by a defender. Our opponents now resorted to a rough and hard-hitting game and often tackled on the wrong side. The College had the better of the game to the end but sturdy defence saved Madukkarai until in the last 5 minutes there was an exciting scrimmage in front of their goal-mouth. The ball was flashed from player to player until our centre forward netted it (3—1).

M. F. C.

Goal	:–	Md. Ibrahim Ali.
Backs	:–	J. P. D'Cunha (capt.) and A. G. Netto.
Half backs	:–	R. Nilakantan Nair, N. V. Dacha and V. D. Mehendale.
Forwards	:–	M. D'Monte, E. Ellery, M. Golding, F. B. Nazareth and L. R. C. B. Baktani.
Umpires	:–	H. I. Shaikh and another,

M. F. C. versus Stanes School, Thursday, 16th March 1939. Won 6–0.

Played on Stanes ground following a heavy shower of rain (·25 inch) at 4'O clock which brought the temperature down to a pleasant coolness and improved the School ground. Stanes were not supposed to be a weak team by any means. They included 2 masters. From start to finish all our team played a wonderful game and after half time we took control of the match.

Play in the first half was even, although one or other of our inside trio cut through 3 or 4 times and we scored (1–0). Although the Stanes boys pressed quite a lot they never got far owing to the sound defensive work by the College and Ibrahim Ali was not tested.

In the second half exchanges were keen for the first ten minutes with Stanes having slightly the better of it. But then our left inner (Ellery) scored from a corner hit (2–0) and this was the turning point in the match. Our inside trio and especially the inside left was brilliant. They added four more goals (6–0). Every man in our team did well. Dacha was excellent, Mehendale has never played so well and Nilankantan Nair rarely.

D'Cunha, after a slightly shaky start was very good in his new place at back. It must be years since Stanes suffered such a heavy defeat at our hands, if indeed they ever have in the last 25 years. For Stanes the Captain (one of the Joseph brothers) worked hard but he could not hold our inside forwards. The two masters Mr. Axford and Mr. Pharoah both seemed to have an "off" day but as has been said already our players rose to wonderful heights, individually and collectively. Hardly a pass went astray.

M. F. C.

Goal :- Md. Ibrahim Ali.
Backs :- J. P. D'Cunha (capt) & A. G. Netto.
Half Backs :- V. D. Mehendale, N. V. Dacha & R. Nilakantan Nair.
Forwards :- L. R. B. C. Baktani, F. B. Nazareth, M. Golding, E. Ellery & S. V. Halbhavi.
Umpires :- H. I. Shaikh & A. Keir.

M. F. C. Hockey Club versus Coimbatore United H.C.
Thursday 30th March 1939. Won 4–3.

This, the last game of the term, before we go to Nilgiri camp, was played on our ground in warm weather. The ground was perfect and the game extremely fast. It was the best exhibition of hockey seen here for a long time. The visitors brought up a very strong team of picked players and we were enabled to win chiefly because the pace was so hot that the visitors could not stand it and they cracked in the second half. The start was at 5. 20 p.m. The visitors exerted prolonged pressure, relieved only by two breakaways by our forwards and after 15 minutes Moses scored for C U. C. (0—1.) They continued to press, continually threatening danger to us and H. Dalley scored twice from the right extreme position before half-time (0–3). Ali in our goal should use his pads and he should learn when to come out from his goal. Dacha at centre half had been playing beautifully. The wing halves were good too and they both have learned to play hockey since they joined the College. Both have since been awarded their hockey colours for their play in this and in the previous match. At half time one heard the opinion expressed that if the pace continued fast as before, the College might produce some fireworks and perhaps pull the game round against tired opponents. And that is what happaned. But not immediately; it took some time Nearly ten minutes of the second half elapsed before F.B. Nazareth scored from a push shot from 3

feet distance (1–3). Pressure on the C.U.C. defenders now became very heavy, but Dorabji (said to be a famous goalie) was safe. Exactly 13 minutes later, at 8 minutes past six O'clock Nazareth scored again (2–3) and after 2 minutes more a beautiful movement by our forwards enabled the same player to fire a shot as from a gun into an empty goal (3–3), Dorabji being out of his place. By this time the C.UC. players were hopelessly beaten by the pace of the game and at 6. 14 p.m. from another fast passing movement Ellery cut through on the left and swerving outwards towards the corner flag he hit a lovely goal from a very narrow angle (4–3) and that was the end.

Forest College XI.

Goal :- Md. Ibrahim Ali.
Backs :- J. P. D'Cunha (Capt.) and A. Sladen.
Halves :- R. Nilakantan Nair, N. V. Dacha and V. D. Mehendale.
Forwards :- M. D'Monte, E. Ellery, M. Golding, F. B. Nazareth, and L.R.B.C. Baktani.

C U. C. XI.

Goal :- Dorabji.
Backs :- M. Dias and Dr. K. Narayanan.
Halves :- Pichimuthu, J. Dalley, Chinnakutti.
Forwards :- H. Dalley, Moses, A. Suri Sastri, D. Lee and S. Francis.
Umpires :- H. I. Shaikh and K. K. Somayya.

Marathon Race, 1939.

This annual cross-country race of 7 miles was run on Saturday 25th March. It had been looked forward to with interest. The runners who, in last year's race, came 2nd (K. K. Somayya) and 7th (R. Nilakantan Nair) were still in residence. There were others too, who intended to make a bid for victory. F.B. Nazareth was a non-starter in 1938 as he had not fully recovered from a bad attack of typhoid fever but this year he had been training specially for the Marathon since mid-January in Aiyur camp. L R.B. Baktani also a non-starter in 1938 was known to be a distance runner and he also was in training. Some of these were believed to have made fast times over the course in practice, and there was talk of breaking the College record of 44' 25." Besides the question of the individual winner there was the team contest and as there is only one division of students here at present it was decided to make this an inter-Provincial, State or Colony affair in which Bombay, Sind, Travancore, Hyderabad and Ceylon would be represented by a minimum of two runners each. In the actual race our hopes of exciting sport were disappointed. The start was at 6-30 a.m. At the long bridge over the Sanganurpallam on the Mettupalayam road (2½ miles) Nilakantan Nair was leading and Ramakrishnan Nair running last. At the first control station (3½ miles) the order was Nazareth, Nilakantan Nair, Baktani ten yards between each with Halbhavi one furlong behind, followed by Mahendale and Khan. Soon after this Nilakantan Nair broke down due to a leg injury (he jarred a muscle badly) and at the second control he was walking. He was then in the fourth place. Soon afterwards he was overtaken by Mahendale and then by Khan and he finished 9th, still at a walk. Nazareth won easily but his time was poor and this is accounted for by a nasty blow on the left shin bone which he got at hockey practice on February 23rd and also he was not hard pressed in the race. Baktani was 2nd and he had the satisfaction along with N.A.N. Khan of securing the team trophy for Sind. Khan

was 5th and his place did him credit as he is not a natural runner and it was by determination and through training himself for the event that he beat so many others. S.V. Halbhavi ran well and he was 3rd.

Order.	Name.	Province, State or Colony.	Time.
1.	F. B. Nazareth (wins Moopil Nair Cup.)	Bombay.	49' 37"
2.	L. R. B. Chandumal Baktani (wins Silver medal.)	Sind.	51' 5"
3.	S. V. Halbhavi	Bombay.	
4.	V. D. Mehendale	Bombay,	
5.	N. A. N. Khan	Sind.	
6.	M. Ibrahim Ali, N. V Dacha	Hyderabad.	
8.	X. M. Fernando	Ceylon.	
9.	R. Nilakantan Nair	Travancore	
10.	S.Ramakrishnan Nair	Travancore.	
11.	P. W. Ratnam	Ceylon.	
12.	S. H. Korlhalli	Bombay.	

Sind	average	3.5	winners Inter-Provincial trophy.
Bombay	,,	5	
Hydrabad	,,	6	

Bombay who provided the first third and fourth men home was for that reason rather unlucky not to win.

Cricket Matches.

Forest College C. C. v. Scouts Recreation Club.
Friday, 17th February 1939:
Match drawn.

Playing on our ground we had to take the field without Shaikh our fast bowler who had his appendix out on November 28th, and Ratnam our slow left hand bowler. The Scouts won the toss and sent in Suri and Ramakrishnan to bat at 2-20 p. m.

They were kept quiet for the first half hour, Nazareth in particular bowling very steadily. Korlhalli gets loose after a few overs and gave way to Mr. Potts who could not however find a length at first and 11 runs were hit off his first over. He continued rather expensive all through, although he sent down a number of good ones without much luck. Mr. Murray let slip several stumping chances off him and he also deserved one, if not two, l.b.w decisions in his favour. One catch in the slips was dropped off Haywood. Suri (62) played bright cricket and always attacked the loose ball, B. S. Krishnamurthi (37) the big left hander made nice clean strokes with great power and he included a 6 to mid-on and five 4s in his score. At the tea interval at 4 O'clock our opponents had made 158 in exactly 160 minutes at the rate of 95 runs an hour. This represented a very good performance aided by slices of luck against good bowling which was never mastered. At tea the visitors declared their innings closed but they took half an hour for their tea, instead of 20 minutes and so the time left for play was reduced to 90 minutes as we draw stumps at 6 p.m. This delay looked to be an advantage to the College who were believed to be weak in batting. That was before we saw the Scouts' bowling. Ali and Ahmad opened for us and were in no difficulty. At 39 Ali was given out l.b.w. Ahmad batted beautifully and the second wicket fell at 74. At 81 Ahmad played a ball to square leg and ran but his partner sent him back and he was run out. Nazareth was out to a weak forward stroke. The Principal was soon joined by Haywood and this pair would have hit off the runs if the light had held good, but by 5–50 it became impossible to see a man bowling round the wicket from the north end and the rate of scoring fell sharply. The Principal hit six 4s and his partner two. B.S. Krishnamurthi seemed to be the only bowler in the visiting team and we were glad to see him put on pads after bowling only 3 overs. He kept wicket very well. The game seemed to indicate that a team (like the Scouts) with batsmen but no bowling will lose to a team with bowlers but no batting.

Scouts XI.

A. Suri Sastri	b Potts		62
S. R. Ramakrishnan	c Haywood	b Potts	32
G. Ramanathan	not out		17
B. S. Krishnamurthi	b Haywood		37
K. S. Laxmanan	not out		2
Extras			8
		Total	158 for 3 (dec).

T. B. Gopalachari, S. R. Sundaram, C. G. Krishnamurthi, K. S. Narasimham, N. Bole Reddi and A. R. Rangan did not bat.

Bowler.	Overs.	Runs.	Wickets.
Nazareth	10	29	Nil.
Korlhalli	4	17	Nil.
Potts	11	69	2
Haywood	8	25	1
Ahmad	2	10	Nil.

Forest College C. C.

Md. Ibrahim Ali	l. b. w. b. C. G. K. Murthi	14
P. K. Ahamad	run out	47
H. P. Murray	c. Rangan b C. G. K. Murthi	9
J. H. Longrigg	not out	43
F. B. Nazareth (Capt.)	b. Gopalachari	5
C. R. Potts	St. B. S. K. Murthi b Gopalachari	2
J. W. Haywood	not out	23
Extras		3
	Total	146 for 5

N. V. Dacha, S. H. Korlhali, K. K. Sommayya, and S. V. Halbhavi did not bat.

Bowler.	Overs.	Runs.	Wickets.
B. S. K .Murthi	3	20	Nil
C. G. K. Murthi	6	44	2
Narasimham	2	16	Nil
Ramakrishnan	6	18	Nil
Bole Reddi	4	19	Nil
Gopalachari	4	11	2
Laxmanan	3	9	Nil
Sundram	1	6	Nil

Forest College C.C. v. Tellicherry Muslim C.C.
Sunday 19th February 1939.
Lost by 62 runs.

We received a welcome visit from this team who put up in our hostel block No. 5 during their stay in Coimbatore. On February 17th they just failed to force a win over a Combined Coimbatore XI on Stanes' ground. (Scores: T.M. C.C. 124, Combined XI 94 for 9.)

Our match began at 10.20 on February 19th, the College batting first. Ali left at 17. Sharply run singles were the feature of the early play. Krishnamurthi (34) had 25 singles and only one 4 in his score, being restrained by accurate bowling. He was caught at the wicket (67 for 3). The principal (20) had meanwhile been unexpectedly served with three short ones which he despatched to the square leg boundary. He fell at the same total (67 for 4) to a bailer from K. Abdul Kadir which turned slightly and just brushed the outside of the off stump or bail. At lunch (12–30) the score was 101 for 9. Resuming at 2–30 Haywood added a few more, the innings closing for 106. In bowling the best work was done by K. Abdul Khader despite a wound in his foot which must have reduced his pace a good deal. We had heard of the cleverly flighted high dropping deliveries of their skipper, C.P. Pocker and had been warned to wait for them and play them off the ground and in consequence

he was found harmless. The Muslims started to bat at 2–57 O'clock. Nazareth and Potts opened the bowling. The latter hit the stumps in his first over (1 for 7). After 6 overs Patel relieved Nazareth and in his second over he bowled Ibrahim (2 for 33). At 36, with 3 batsmen out Hassan joined Mahmoo who was concentrating on defence and neither of them seemed likely to make a long stay at the wicket. Hassan's method is to walk out and take a blind swipe. Momentarily we expected to see him bowled, stumped or caught but his luck held and this pair went on to win the match. At last they both fell at the same total (116). Hassan had six 4s, Mahmoo none. It was at about this time that Patel fielding too close in at slip was hit by the ball full in the face, over the right cheek bone and had to be taken to hospital. The skipper C. P. Pocker and Hamid put on 52 runs and then at a quarter past 5 O' clock the former declared the innings closed at 168 for 5 and gave the College half an hour's batting. The visitors left for Tellicherry the same night and from a letter received later it seems they much enjoyed the match, as we did. The College fielding was better than in the last game. Somayya was energetic; he is the only fieldsman who runs to meet the ball. Others wait for it to come to them which is quite wrong. Krishnamurthi kept wicket very well, although he did let Hassan off a chance of stumping.

Forest College C. C.

Md. Ibrahim Ali	l. b. w. b. K. Abdul Khader	9	run out	5
B. S. Krishnamurthi	c. Hamid b. Mahmoo	34		
K. Patel	b. Pockuma	3	did not bat	
J. H. Longrigg	b. K. Abdul Khader	20		
H. P. Murray	l. b. w., b. Mahmoo	9	run out	7
F. B. Nazareth (Capt.)	b. K. Abdul Khader	5	not out	13
C. R. Potts	b. Pockuma	14	c. Hamid. b. Ahmad	1
J. W. Haywood	not out	7	c. Hassan b. Abdul Khader	16
N. G. Dacha	b Pockuma	0	not out	1
K. K. Somayya	c C. P. Pocker b. K. Abdul Khader	0	did not bat.	
S. H. Korlhalli	b. Pockuma	0		
Extras		5	...	0
		106		43 for 4

Bowler.	1st innings.			2nd innings.		
	Overs.	Runs.	Wickets.	Overs.	Runs.	Wickets.
K. Abdul Khader	16	26	4	1	6	1
Ibrahim	7	22	Nil.	did not bowl.		
Pockuma	7	15	4	Do.		
Pocker	3	14	Nil.	2	5	Nil.
Mahmoo	7	24	2	did not bowl.		
Hamid	did not bowl.			3	4	Nil.
Ahmad	Do.			2	17	1
Hassan	Do.			2	11	Nil.

Tellicherry Muslim C. C.

Ibrahim	b Patel	8
A. Abdul Khader	b Potts	6
P. K. Ahmad	l. b. w., b Potts	15
K. Mahmoo	c & b Potts	25
Hassan	c Dacha b Potts	58
C. P. Pocker (Capt.)	not out	28
Hamid	not out	20
Extras	...	8
	Total.	168 for 5 (dec.)

K. Abdul Khader, Kunhamed, Hamsa and V. B. Pockuma did not bat.

Bowler.	Overs.	Runs.	Wickets.
Nazareth	8	44	Nil.
Potts	17	68	4
Patel	6	22	1
Haywood	1	7	Nil.
Krishnamurthi	5	13	Nil.
Korlhalli	1	6	Nil.

Forest College C. C. v. Imperial Bank of India, Ootacamund.
9th April 1939 : lost by 78 runs.

This was the first game of our hill tour and was played on the Hobart Park ground, on a matting wicket. F. B. Nazareth captained our side as H. I. Shaikh is not fit yet after his operation. J. Naidu the Bank captain won the toss and took in with him Ramakrishna Sarma of the O. C. C. of which club he (Sarma) was elected captain last month. Strange to say the previous captain died suddenly during a match in February, as did *his* predecessor in the O. C. C. match against us last year. Naidu adopts a peculiar stance at the wicket. He takes guard so as to cover the stumps with his bat and then he places both his legs exactly behind his bat. He rarely moves a foot in making a stroke. It follows that when the ball raps him on the pads he is out l. b. w. Nazareth did rap him 3 or 4 times on the pads when he was plainly obstructing but every time it was "not out". The field were mystified and one of our players mildly asked the umpire, between overs, how he figured that a batsman taking up that stance could be "not out" on appeal for l. b. w. The reply is not known, but we now realised this umpire to be the same person whose shocking incompetence, to put it no worse, was remarked upon in this magazine in the account of the O. C. C. match last year. Later in the innings there was a comic incident when one of the home batsmen was run out by several feet at the north end and this umpire involuntarily raised his hand as far as the level of his face, but then recovered himself, lowered his hand and ruled "not out". The first wicket fell at 2 runs. Then Narayan (18) was out at 33. He batted well for his 18 runs. At last Naidu was clean bowled, the score being 39 for 3 wickets. A long stand followed. For a long time Keir (49) the old 'Stanes' boy who is now at College in Madras was hopelessly at sea; either missing the ball or connecting with the extreme edge of the bat until Venku's slows, short of a length gave him the chance to make some big

hits. If he is lucky enough to stay 6 or 7 overs Keir is a dangerous bat after that. The innings closed for 143 at 20 minutes past one O'clock. Play was resumed after lunch at at 2–30 P.M., but five of our team by a mishap were unable to get back to the ground until 3.15 and this upset our batting order. In fact it spoiled the match. Ali was out in the first over and Nazareth in the fifth over (2 for 10). Krishnamurthi (32) the left-hander and Ratnam put on 16 for the fourth wicket. The former defended splendidly. He was 9th out, with the score at 64 and for some time before that it had been too dark to see the ball properly. Jivaratnam and Keir made the ball bump a bit but otherwise did not look difficult and our score was disappointing, even after allowing for the upset referred to.

Imperial Bank C. C.

J. N. Naidu (Capt.)	b Ramaswami	9
R. K. Sarma	c Ali b Nazareth	1
P. K. Narayan	1. b. w. b Krishnamurthi	18
N. Sambandam	b Venku	20
A. W. Keir	b Krishnamurthi	49
T. D. Jivaratnam	b Venku	0
A. Marimuthu	b Venku	5
K. M. Kesavan	run out	2
A. Rukman	c Krishnamurthi b Ramaswami	24
K. Sukumaran	c Griffith b Ramaswami	1
K. C. Annaya	not out	3
Extras		11
	Total	143

Bowler.	Overs.	Runs.	Wickets.
Nazareth	6	28	1
Krishnamurthi	12	37	2
Ramaswami	12	31	3
Venku	10	47	3

Forest College C. C.

Md. Ibrahim Ali	c Narayan b Jivaratnam	2
B. S. Krishnamurthi	b Jivaratnam	32
F. B. Nazareth (Capt.)	c Sambandam b Jivaratnam	2
T. S. Venku	1. b. w. b Jivaratnam	3
P. W. Ratnam	b Keir	8
H. P. Murray	c Sambandam b Keir	11
C. Ramaswami	run out	0
A. L. Griffith	c Naidu b Keir	0
J. H. Longrigg	run out	2
E. Lefevre	not out	0
S. H. Korlhalli	e Narayan b Kesavan	1
Extras		4
	Total	65

Bowler.	Overs.	Runs.	Wickets.
Jivaratnam	12	22	4
Rukman	14	21	–
Keir	7	13	3
Sambandam	3	4	–
Kesavan	1	1	1

Umpires :– H. I. Shaikh and Thiaburaj.

Forest College C. C. versus St. Joseph's College.
15th April 1939; Won by 17 runs.

Played on our opponents' ground at Wellington. We made the trip from our camp at Arambishcla, Ooty, some by rail and some by road. Soon after 10–30 a m. Shaikh, making a welcome re-appearance after his long absence from the team, won the toss and our opening pair put on 37, playing confidently. One of them appeared to be run out easily but luckily for him the wicket keeper, Bro. Bergin had dropped the ball. Ali (12) was the first to go and Ratnam, coming in first wicket down, failed to trouble the scorer so Venku joined Lefevre and they took the score to 50 for 3. Venku was batting beautifully and he found useful partners in the Principal (19) and Mr. Griffith

(39 not out) each of whom hit a 6. Thirty eight runs were added with the former and thirty nine with the latter before Venku's innings (42) was ended by a good catch. The score was then 127 (for 5 wickets). Mr. Griffith made a few more big hits but found no one to stay with him for very long and our innings closed for 156. Under the old mode of scoring on this ground the score would have been much bigger, but it has been wisely changed and now unless a ball is hit right out of the ground nearly everything has to be run out even if it hits the bank with a bang. Shaikh opened our bowling, at a medium pace and he hit the stumps. in his second over. The St. Joseph's players were intent on defence. Bro. Cummins (39) and Bro. Bergin (8) added 23 runs to the score, for the third wicket, both showing great patience. The former with Mr. Napier added a further 24 for the seventh wicket and they hoisted the 100, with only 6 men out. But we got the needed wicket at 101 and nine men were out for 111. The last wicket realised 28 runs, both boys hitting out merrily and Shaikh tried a variety of bowlers before the last wicket fell at 139. So we won by 17 runs. Several easy catches were dropped by those two or three members of our side who seem quite unable to catch a ball. D'Cunha did well behind the wicket. Then each side had 30 minutes batting to see which could knock the most runs in that time. We made 67 for 9 in the half hour and they made 65 for 9 so we won by 2 runs amid excitement. Venku's second innings has a good look about it in the score book, 2, 4, 4, 4, 4, 3 = 21. Nazareth, bowling far better than in the first innings took 6 for 30 in 8 overs.

Forest College C. C.

Md. Ibrahim Ali	l. b. w.	b McCready	12
E. Lefevre		b McCready	26
P. W. Ratnam		b Irani	0
T. S. Venku		c Netto b McCready	42
J. H. Longrigg		c Napier b McCready	19
A. L. Griffith		not out	39
F. B. Nazareth	l. b. w.	b McCready	0
H. I. Shaikh (Capt.)	l. b. w.	b Netto	1
S. H. Korlhalli		b Navin	5
L. C. Baktani		b Irani	1
J. P. D'Cunha		b Napier	0
Extras ...	...	... ...	11
		Total	156

Bowler.	Overs.	Runs.	Wickets.
Reporter	12	51	Nil
McCready	17	52	5
Irani	3	6	2
Barclay	2	10	Nil
Napier	3.2	15	1
Netto	2	5	1
Navin	1	6	1

St. Joseph's College C. C.

A. Netto	b Shaikh	3
Bro. Cummins	c Ali b Venku	39
Br. Fleming	b Nazareth	6
Bro. Bergin (Capt.)	b Lefevre	8
O. McCready	st. D'Cunha b Griffith	7
Mr. Napier	c Ali b Venku	16
P. Reporter	c Griffith b Nazareth	0
N. Barclay	b Venku	16
T. Sweeny	c Lefevre c Griffith	5
N. Navin	b Venku	10
R. Irani	not out	17
Extras	... ...	12
	Total	139

Bowler.	Overs.	Runs.	Wickets.
Shaikh	8	18	1
Korlhalli	4	9	Nil
Nazareth	13	19	2
Venku	10.2	26	4
Lefevre	2	4	1
Ratnam	1	6	Nil
Griffith	6	45	2

Forest College C. C. v. Lawrence Memorial Royal Military School, Lovedale.

29th April 1939. Lost by 126 runs.

Played at Lovedale, on the pleasant ground of our oppnents. We included Mr. Griffith and Forester Ramakrishnan (both of the Silviculture Research Branch) but on the whole ours was a weak side particularly in bowling and fielding. The school won the toss and went in to bat at 10.45 a. m. Unfortunately there was much wind, blowing in gusts across the ground and bringing with it clouds of dust. So much so that the cricket was extremely uncomfortable all the morning. The opening pair were shaky against Nazareth and Korlhalli. The former had two l. b. w. victims in his second over (2 for 4) while the latter as usual bowled well for the first four overs, conceding only 7 runs: later he became expensive. Ratnam for Nazareth was the first change but he could not get a length and 14 runs were hit off his first over. However, he got Mr. Patient stumped off the last ball of the over, a valuable wicket. The fielding both on the ground and in the air was very bad: and it is doubtful whether the school should have made more than *half* of their total of 127. One of the boys, A. Smith, stepped back and forced a ball very hard to the boundary, where it got through the wire fencing and was lost. In doing so he touched the leg

stump with his heel and a bail fell. D'Cunha appealed but nobody heard him* and the attention of everyone was upon the ball. The umpire was unaware of any appeal or of any possible cause for one and when, many minutes later, after the ball had been found he was asked for a decision he, having no idea at what stage or in what manner the bail had come off had no option but to say "not out." An immediate loud appeal by the wicket keeper must, one supposes, have been successful. The school were all out at 12.20. We had 33 minutes batting before lunch and lost 3 wickets for 47, Mr. Griffith falling to the last ball bowled. Lunch was served in the School hall. It is very large and is completely panelled in Teakwood. After lunch Ratnam was run out without scoring but then Nazareth (26) and D'Cunha (13) added 21 runs for the sixth wicket and plainly showed how simple the bowling really was. The tail end batsmen were nervous (although Sommayya made two good hits) and the innings closed for 32. Except Mr. Green (medium pace) the bowlers were all slow and none had any guile. The Lawrence School went in to bat for the second time at 2.45 p.m. and they showed much better form than they had in the morning when their batting had been definitely very bad. Mr. Patient (60) and D. Cooke (47 not out) were not in difficulty. Both hit hard and the weakness of our attack was thoroughly exposed. The innings was declared closed at tea time (4. 15) at 154 for 3. After tea we set about our task of making 200 runs to win but again we failed badly against the same easy bowling and were all out at 6 O'clock for 73.

*Mr Griffith was fielding at slip. He writes "*as soon as the leg bail fell off* and almost as the ball was hit the wicket keeper appealed – but in a rather weak voice. This I both saw and heard. *The reason why I appealed* in a loud voice as soon as the ball was retrieved and the umpire's attention again on the game was because the umpire had upto then *given no decision* on the wicket keeper's appeal. The wicket keeper appealed at once and the only blame on him is that he did not appeal loud enough to attract the bowler's umpire whose attention was on the stroke ! I only appealed to make the umpire give a decision.

A curious incident and one such as I have not met before.

Lawrence M. R. M. School.

Mr. Hunt	l. b. w. b. Nazareth	2	b Griffith	19
Mr. Patient	st. D'Cunha b Ratnam	19	l. b. w. b. Korlhalli	60
Mr. J. D. Green	l. b. w. Nazareth	0	st. D'Cunha b. Ramakrishnan	17
D. Cooke	b Griffith	12	Not out	47
Mr. Murcutt (Capt.)	b Nazareth	38	Not out	2
Mr. Barfoot	c Griffith b Nazareth	4	did not bat	
L. Wells	b Korlhalli	0		
Mr. Nicholls	l. b. w. b Nazareth	20		
A. Smith	c D'Cunha b Ratnam	22		
T. Mumford	c Ramakrishnan b Ratnam	2		
A. Hackett	Not out	1		
Extra ...	... ...	7	...	... 9
	Totals ...	127		154 (for 3 dec.)

Bowler.	1st innings.			2nd innings.		
	Overs.	Runs.	Wickets.	Overs.	Runs.	Wickets.
Nazareth	8	22	5	9	29	Nil.
Korlhalli	8	28	1	8	32	1
Ratnam	5	42	3	7	36	Nil.
Griffith	4	30	1	6	43	1
Ramakrishnan	did not bowl.			2	5	1

M. F. C.

Md. Ibrahim Ali	c Green b Murcutt	7	c Mumford b Murcutt	6
Ramakrishnan	c Green b Murcutt	0	Run out	5
J. H. Longrigg	st. Cooke b Murcutt	13	b Barfoot	13
F. B. Nazareth	b Hunt	26	c Hackett b Green	8
A. L. Griffith	b Hunt	11	c Cooke b Barfoot	24
P. W. Ratnam	Run out	0	b Hunt	0
J. P. D'Cunha	b Hunt	13	Wells b Hunt	7
N. V. Dacha	l. b. w. b Hunt	0	b Barfoot	6
S. H. Korlhalli	c Murcutt b Hunt	0	c and b Hunt	2
K. K. Somayya	l. b. w. b Barfoot	5	c Green b Hunt	0
L. C. Baktani	Not out	2	Not out	0
Extras ...	... ...	5	... ...	2
	Totals.	82		73

Bowler.	1st innings.			2nd innings.		
	Overs.	Runs.	Wickets.	Overs.	Runs.	Wickets.
Murcutt	9	25	3	5	20	1
Green	5	19	Nil.	5	12	1
Hunt	6	25	5	5–3	19	4
Barfoot	3	13	1	6	21	3

The College Tennis Tournament 1939.

This was played off between the 20th and 29th March on the College courts. The Singles drew eight entries and either S. H. Korlhalli, the Tennis captain or P. W. Rutnam was expected to win but the former was overcome in the semifinal by F. B. Nazareth (8—6, 9—7) in what was the best match of the competition. It was a surprise also when Baktani beat Rutnam in the other semi-final. The final, played on March 29th, was not very interesting as it proved to be one-sided. Nazareth had no difficulty in winning in forty minutes in straight sets.

Singles.

P. W. Rutnam beat S. V. Halbhavi — Rutnam 6–1, 6–2.

L. R. B. C. Baktani w. o. Md. Ibrahim Ali — Baktani w. o.

Baktani 7–5, 6–1.

F. B. Nazareth beat J. P. D'Cunha — Nazareth 6–8, 6–3, 6–2.

S. H. Korlhalli beat N. V. Dacha — Korlhalli 6–4, 6–4.

Nazareth 8–6, 9–7.

Nazareth 6–2, 6–3, 6–0. wins Fischer Cup

Doubles.

S. H. Korlhalli & F. B. Nazareth beat P. W. Rutnam & N. V. Dacha 6–8, 6–3, 6–2.

J. P. D'Cunha & M. Ibrahim Ali beat L. R. B. C. Baktani & S. V. Halbhavi 4–6, 6–3, 7–5.

Final

Korlhalli & Nazareth beat D'Cunha & Ibrahim Ali 3-6, 6–2, 6–1, 6–2.

The Doubles Final.

The Doubles Final was played on Monday, 27th March, a perfect evening, cool with a light breeze blowing from the east. Korlhalli started to serve at 4–50 p,m. He lost the first game. His partner also dropped his first service game and this pair were quickly at 0–4. Korlhalli won the next on his service (1–4) and Nazareth also took his (2–5). Ali who had been playing well then dropped his service (3–5) but Korlhalli did the same after deuce had been called twice and lost the set, 3–6. Play was rather scrambling in the first set; no one had settled down. Korlhalli had been very weak, Nazareth purely defensive

and playing a colourless sort of game, while their opponents went all out to force the pace and win points. D'Cunha although no stylist showed effective placing, while Ali served hard and intercepted well at the net and was playing as well as anyone in the court at this stage if not better. The second set went the other way. D'Cunha opened and lost his service game. He and his partner also lost the next to Nazareth's service (2–0). Korlhalli, serving, made it 3–1. D'Cunha pulled up to 3–2. Nazareth won his service (4–2) and then Ali after leading 30–Love and 40–15 lost the next game on his service, a critical game (5–2). Korlhalli then won his service, after two deuces, for the set at 6–2. Each of these sets occupied 20 minutes and it was now 5–30 p.m. In the third set D'Cunha and Ali were quickly four down and could only get one game, on the former's service (4–1). Nazareth then took a love game (5–1) and Ali although serving hard lost his service once again 6–1. This set also took 20 minutes.

The fourth set stood at 3–2 (both Ali and Korlhalli having dropped service game) and it looked to be anyone's set but D'Cunha followed the bad example in the critical sixth game, after deuce had been called three times (4–2) and the end soon came (6–2).

The standard of play was decidedly low and it is difficult to say that any one player was better or worse than the others. The actual winners had been expected to win and they were, no doubt, the better pair. In the match they were always cool and collected, kept their places better than their opponents and they have a better style. D'Cunha and Ali forced the pace but made too many mistakes.

N. V. Dacha umpired the match.

M. F. C. Students' Club Day 1939.

About 200 guests responded to our invitation on Saturday, March 25th, including some old and valued friends of the club. Mr. C. Ramasawami of the Agricultural College presided. Others present were Messrs. R.C. Broadfoot, M.C. Cherian (and his little girl), H. Shiva Rao, District Munsiff P.V. Krishnaswami Ayyar and daughter, Dr.P.C. Amat, Lt. Col. A. Innes Cox, I. M. S., and Mr. A. P. Kuriappan, Mr. J. W. Haywood, Mr. Ramakumar, "the man of a thousand faces," Major Dass, I.M.S. and Mrs. Dass, Mr. M. Kantiraj (Superintendent of the Farm), Kunhiraman Menon (Agricultural College Student games Secretary), S.A. Ibrahim, Noel Shresta, a lady doctor and 3 nurses from General Hospital, Coimbatore. It was a great disappointment that Dr. Miss E.K. Janaki Ammal of the Imperial Sugarcane Station was unable to distribute the prizes. She had accepted the club's invitation to do so but unluckily she fell off a paddy bund and fractured her left elbow on the day before the Day. A sumptuous tea was served in large tents, and some tea tables were in the open. Music was provided by radio gramophone

While tea and music were going on, a Zulu was seen rushing about and soon afterwards a dignified figure of whom it was whispered from one to another that he was the king of Sheba. Here is a list of the Fancy Dress Competitors :—

Zulu	J.P.D' Cunha.
King of Sheba	H.I. Shaikh.
Narada (The Message Carrier)	N.V. Dacha.
Milk woman	R. Nilakantan Nair
Jutka walla	S. Ramakrishnan Nair
Shankar, the God of Trinity	L.R.B. C. Baktani

All six were good and when votes had been counted it was found that the Zulu, the milk woman, and the King in that order were considered the best. S. Ramakrishnan Nair acted splendidly as the Jutka walla.

Then we all went into the club and a very enjoyable programme was gone through as follows :—

Reading of the Report	By Student Md. Ibrahim Ali, *Hon. Secretary.*
Prize Distribution	(for list of prize winners: See below.)
Presidential address.	

Variety Entertainment.

(1)	Instrumental music	...	N. V. Dacha
(2)	English Song	...	F. B. Nazareth
(3)	"Unemployment" Soliloquy in Marathi	...	H. I. Shaikh
(4)	"Storm over a tea cup" :—		One Act play.
	Characters :	...	S. Ramakrishnan Nair, as Narayan. Md. Ibrahim Ali, as Sita N V. Dacha, as Rama
(5)	Comic Song	...	F. B. Nazareth
(6)	A Farce in Urdu :—		
	Characters :	...	N. V. Dacha as K. B. Chachemi Chanshal Bijalee Khan. Md. Ibrahim Ali, as "Azuri" H. I. Shaikh, as Doctor
(7)	Comic Song	...	F. B. Nazareth
(8)	A parady of a "Drunkard"	...	Soliloquy in Kanarese ; K. K. Somayya.
(9)	A Song in Urdu	...	N. V. Dacha.
(10)	Closing chorus.		

List of Prize Winners.

1.	Ping-pong champion	L. R. B. C. Baktani
	Runner up.	Md. Ibrahim Ali
2.	Carrom (Singles) Champion	N. V. Dacha
	Runner up.	F. B. Nazareth
3.	Carrom (doubles) Champions	N. V. Dacha & H. I. Shaikh.
	Runners up.	J. P. D'Cunha & S. H. Korlhalli,

4.	Bridge Champions	J. P. D'Cunha & X. M. Fernando.
	Runners up.	F. B. Nazareth & P. W. Rutnam.
5.	Fancy dress	1st J. P. D'Cunha.
		2nd R. Nilakantan Nair.
		3rd H. I Shaikh.

College Notes.

The water level in the big well was only 1 foot 4 inches on 29th March, so it was a good thing the College went away to the usual hill camp at Arambi on 4th April.

2. G.N.Mansukhani, M.R.H. (Hons:) of the 1936-38 division (Sind) writes that he was attached to a Range for 8 months after leaving the College and now he has taken charge of a small compact Range of his own, and he is very pleased about it.

3. On 31st March, Hockey colours were awarded for the 1938–39 season to three old colours J.P.D'Cunha, F.B.Nazareth, N.V.Dacha, and two new colours R.Nilakantan Nair and V.D. Mehendale.

4. Two private students of the 1934–36 Division both from Ganjam district, were appointed in 1937–38 to the Orissa Forest Department: P.K.Patnaik, M.R.H., as Forest Ranger and R.P.Patnaik M.R.L., as Deputy Ranger. We regret to learn that R.P.Patnaik since died in April 1939.

5. In the Central Provinces and Berar annual report for 1937–38, we find that "The Chief Conservator notes with pleasure the names of Rangers and Deputy Rangers and Foresters who have been specially mentioned for good work in the Circle reports. The work of the Range Officer— the backbone of the Department—deserves special mention on account of the generally high standard of efficiency maintained under increasingly difficult conditions. In this connection the names of the following are mentioned as having done exceptionally good work during the year. Among these are several who have already shown themselves fit for the responsibilities of higher rank." The following old students of this College are then mentioned :—

1.	A. Narayana Rao,	1920—1922 Division
2.	Biram Singh,	1921—1923 ,,
3.	Yelleshwar Rao,	1924—1926 ,,
4.	B. G. Gattewar,	1925—1927 ,,
5.	A. P. Sharma,	
6.	Muhammad Ishaque,	1929—1931 ,,
7.	J. C. Sarwate,	1931—1933 ,,

6. *Wedding*: On 24th April 1939 at St. Thomas's, Church, Kumbakonam, Abraham Olimuthu, B.A., M.R.H., 1936–38 Division was married to Miss. Elzi Gold Jothi, daughter of Sri V. Moses, B.A., Tahsildar, Papanasam, Tanjore District.

7. "Indian Forester" Essay Prizes for 1939 have been awarded as follows:—

1. P. S. Sivaramakrishnan, B. A., M. R. H., 1934—36 Division Rs. 20/-
2. S. G. Venkataramanan, M. R. H. 1916—18 Division Rs. 15/-
3. V. D. Mehendale, B. Sc. 1937—39 Division Rs. 10/-

Essay No. 1 will be published in the May issue of Madras Forest College Magazine and Numbers 2 & 3 in the next.

8. The Forest Officers named below have been selected to examine the Forest College students in the subjects noted against each in the Final Examinations to be held in June 1939 :—

Name of Examiner.	Subject.
Mr. R. S. Browne, Working Plans Personal Assistant to the Chief Conservator.	Forest Management.
Mr. J. M. Sweet, Dt. Forest Officer, Wynaad Division.	Silviculture.
Mr. P. W. Davis, Dt. Forest Officer, Nilambur.	Survey and Drawing.
Mr. R. H. Mitchell, Dt. Forest Officer, Chittoor.	Range Administration.
Mr. C. R. F. Williams, Dt. Forest Officer, Ootacamund.	Botany.
Mr. J. A. Wilson, Special Grazing Officer.	Utilization.
Mr. R. B. Cornwell, Dt. Forest Officer, Madura.	Engineering.

Balance sheet of M. F. C. Magazine for the Year 1937–38. (1–7–37 to 30–6–38)

RECEIPTS.

Serial No.	Particulars.				Actual receipts. Rs.	A.	Gross receipts. Rs.	A.
I.	Opening balance :							
(a)	Advance subscription fund Rs. 45–10–0							
(b)	General fund ... Rs. 218–11–7							
		264	5	7				
II.	Annual subscription released for 1937–38 from advance subscription fund						66	0
III.	Subscriptions :							
(a)	Arrear subscriptions realised ...	10	0	0	10	0	10	0
(b)	Current year's subscription from:							
	21 gazetted officers @ Rs. 2–8–0	52	8	0				
	85 nongazetted ,, @ ,, 2–4–0	191	4	0				
	1 ,, ,, @ ,, 2–0–0	2	0	0				
					245	12	245	12
(c)	Advance subscription for 1938–39	36	0	0				
	,, ,, ,, 39–40	13	4	0				
	,, ,, ,, 40–42	4	0	0				
					53	4		
IV.	V.P.P. registration fee recoverd ...	10	8	0	10	8	10	8
V.	Advertisements	17	8	0	17	8	17	8
VI.	Interest on deposit in Bank ...	3	9	0	3	9	3	9
	Total ...	**604**	**14**	**7**	340	9	353	5

Checked and found correct.

Sd. (i) S. Ramakrishnan Nair. *(Student member).*

(ii) G. Visvanatham, *(Editor and Treasurer).*

EXPENDITURE.

Serial No.	Particulars.	Amount. Rs.	A.	P.	Amount. Rs.	A.	P.
I.	Paper and printing charges for three numbers (one of which was a "double" number) ...	269	1	0			
II.	Stationery and sundries ...	10	1	6			
III.	Postage	50	3	3			
					329	5	9
	Closing balance:						
	(i) Bank balance on 30–6–38 ...	250	1	1			
	(ii) Cash balance on hand ,, ...	25	7	9	275	8	10
	Total ...				**604**	**14**	**7**

		Rs.	As.	Ps.
Receipts		353	5	0
Expenditure		329	5	9
Surplus ...		23	15	3
Closing balance:—				
Gross balance		275	8	10
Advance subscription fund as on 30–6–1938 ...		72	14	10
Nett closing balance ...		202	10	10

(iii) P. W. F. Walpole.

(Business Superintendent.)

EXTRACTS.

1. Paper from Grass and Bamboo.

New Exhibits in Indian Museum.

A collection of exhibits of paper samples manufactured from bamboo (*Bambusa* sp.), from Munj (*Saccharum Munja*), from Ramsar (*Saccharnm arundinaceum*), from Ulla Grass (*Anthistiria gigantea*) and from Sabai or Bhabar Grass (*Ischaemum angustifolium*) have recently been acquired from the Forest Research Institute, Dehra Dun, and exhibited in the Public Gallery of the Industrial Section (Botanical Survey of India), Indian Museum.

An exhibit of commercial importance, which has lately been added, is a sample of 4.2 lbs. of paper manufactured from 10 lbs. of air dried bamboo culms.

The process of manufacture and the treatment of various chemicals in different stages of manufacture from the raw material to finished paper has also been shown.

This process is as detailed below :—
Ten pounds of bamboo treated with 15 ozs. of Sodium Sulphate and 1 lb. of Lime produces 4.5 lbs. of unbleached paper pulp, which when treated with 9.5 ozs. of bleaching powder gives 4.2 lbs. of bleached paper pulp, then again treated with 4 ozs. of China Clay, 1 oz. Rosin, 0.125 oz. of Soda Ash and 4 ozs. of Alum gives 4.2 lbs. of finished paper.

2. Nursery Experiments at Dehra Dun.

Best material for seed covering.

What is the best material for seed covering—well washed coarse sand, sifted decomposed vegetable manure, farmyard manure or sifted nursery soil?

This is one of the problems which has been solved by experiments in the nursery of the Forest Research Institute at Dehra Dun. The experiment was designed to determine the efficacy of these seed covers on the rapidity and uniformity of of germination of plants in shaded and unshaded condition. The seeds chosen were those of *Kydia calycina* and *Terminalia chebula*.

Strange Result.

A strange result followed. It was found that the different covers had no significant effect on the maximum germination of the two species whether shaded or unshaded. But in the unshaded beds the rate of germination responded differently, the coverings in order of efficacy being sifted decomposed vegetable manure, farmyard manure, sifted nursery soil and well-washed coarse sand, with no marked difference between decomposed vegetable manure and farmyard manure.

Experiments were also made with different degrees of nursery bed shades with two plants, *Adina cordifolia* and *Anthocephalus cadamba*. In the first case the results showed that stocking and development were the best under tin shade, fairly good under thatch, poor under batten and almost a complete failure in the open. In the second case germination, stocking and development were the best under batten shade, good under thatch and fairly good under tin and poor and patchy in the open. Failure in growing these species, and especially *Adina cordifolia* (Haldu), which is a most important and useful timber tree has in the past been the general experience. These experiments show that such failures may be avoided partly at any rate by using shades of the correct type over the nursery beds.

Green Manure.

The manuring experiment in nursery beds having the same past history was continued with seeds of *Morus alba*. The green manure used in three different beds were *Crotalaria juncea, Cassia tora* and *lucerne*, whereas artificially prepared farmyard manure was added to two other beds separately at the rate of 10 and 20 baskets per bed; besides three other beds were prepared with 10 and 20 baskets of farmyard manure and Adco respectively. One separate bed was kept as control. Cassia tora seems to have given the best results this year. Ten baskets of farmyard manure per bed and all green manures proved decidely better than the control.

—*Indian Information Series, 15-1-39.*

3. Storage and germination of Seeds of Swietenia macrophylla—large leaf mahogany: By M. Lopex.

Seeds of *Swietenia macrophylla* King, if not properly stored, lose viability in 45 days after their collection from a mother tree; properly stored, however, viability can be lengthened to 132 days.

Storing cones in a can with powdered charcoal and burying it 40 cm deep in the ground was found to be the best method of storage to keep the seeds viable for a long period. Under this method the seeds were allowed to remain in storage for 132 days. It gave a germinative capacity of 72 per cent. The next best was storage in can and burying it 40 cm deep in the ground, which kept the seeds viable for 132 days and gave a germinative capacity of 70 per cent. The latter method is the most practical, easy, and economical both in labour and in material. It is recommended for general use in forest nurseries in the Islands.

The other storage methods are ranked in the following order: third, storing cones in cans with powdered charcoal; fourth, storing seeds in cans with powdered charcoal; and fifth, storing seeds with powdered charcoal in glass jars sealed with paraffin.

Storing seeds in paper envelopes with powdered charcoal gave a germinative capacity of 32 per cent in 38 days, which is very much lower than the control. Hence its use is not recommended.

The period of germination decreases as the seeds grow older, ranging from 85 to 3 days.

During rainy days, more seeds germinated than during the days when the seed plots were watered artificially.

Since the seeds mature in January, they could be gathered this month, stored by any of the recommended methods, and sown at the beginning of the rainy reason (May or June) which is considered the best time for sowing. Or the seeds, after collection from a mother tree, may be shipped to reforestation projects in the Islands which are practically reachable within two weeks' time, and stored there until the time best or appropriate for sowing.

It is believed that better results of germination could have been obtained if in the process of the experiment, the seeds were maintained at a low but uniform degree of moisture.

—*The Philippine Journal of Forestry, Vol. I No. 4.*

4 Wood gas how it is made and used to drive vehicles.

By G. H. DONALD, B. A.

An attempt is made here to describe in simple terms how it is possible to tip a bag of wood or charcoal into a lorry and cause it to drive the engine. Since substantial volumes have been written on the subject by various French and German technicians, it will readily be understood that it is impossible to do more than describe the general principles involved.

What takes place is briefly this. When a stream of air, consisting of oxygen and nitrogen is passed through red hot charcoal, the oxygen combines with the carbon (of which charcoal mainly consists) to form an inflammable gas known as carbon monoxide. The nitrogen being an inert gas plays no part and passes through unchanged. The former gas, carbon monoxide, can be seen burning with a bluish flame at the top of a brightly glowing charcoal or coke fire, and is the main constituent of producer gas. When mixed with a suitable proportion of air, it forms an explosive mixture which can be fired within the cylinders of an engine by means of sparking plugs, in precisely the same manner as petrol vapour is exploded.

This is how producer gas, or suction gas as it is sometimes called, is obtained from the carbon in wood, and utilized to drive vehicles. Once started, the engine sucks a continuous stream of air through a bed of red hot charcoal contained in a generator. The resulting mixture of gases passes from the generator through cleansing apparatus designed to cool the gas and free it from any particles of charcoal dust, and enters the engine by a pipe which takes the place of the normal petrol carburettor.

In the case of the wood-burning types of generator, problems due to high temperatures do not arise to the same extent, since the moisture present in the timber serves to lower the reaction temperatures. However, special heat-resisting steels are used for the lining of the fire bowl, for ordinary steel would corrode and scale rapidly, and is also much more prone to distort.

The use of raw wood as fuel in place of charcoal raises other problems. In the fire bowl where combustion and gas formation takes place, there is a bed of hot charcoal, but above this is wood in process of carbonization. Due to the action of the heat immediately below, steam, tar, and other substances are released from the wood, which if allowed to pass unchanged into the engine would soon cause serious trouble. To overcome this difficulty, the principle of down-draught combustion is adopted, whereby the distillation products are made to pass through the incandescent charcoal in the reduction zone where they are " cracked ". As a result, these harmful substances are converted into usable gases—mainly carbon monoxide, with some hydrogen and methane—which further enrich the mixture. The calorific value of wood gas is actually slightly higher than gas formed from charcoal alone.

Much ingenuity has been brought to bear on the difficult problem of gasifying raw wood.

By reducing thermal losses through radiation, the efficiency of the generator has been increased. The outgoing hot gases are made to pass upwards between the double walls of the generator thereby prewarming the air inlet pipes, and also the wood in the hopper above.

Having produced gas of combustible quality, the next step is to render it free from harmful dust. Charcoal dust is an excellent abrasive, and fine practicles carried along in the gas stream would, if allowed to enter the engine, rapidly cause cylinder wear. When charcoal is used as fuel, filters of linen, flannel, silk or similar materials are used. These are usually in the form of bags or tubes, stretched on perforated frames. In the case of wood-burning plant, cloth filters are not used. Gas so formed invariably contains a certain amount of water vapour which would interfere with the porosity of the filtering material. The usual arrangement is to pass the gas through a series of cooling boxes each containing baffle plates; the water vapour condenses on the baffles, and their wetted surfaces readily arrest the dust particles.

By the time it reaches the engine the gas has followed a somewhat tortuous path, and this is purposely aimed at since it is thereby cooled. In cooling it contracts, and therefore becomes more concentrated; that is, it has a greater calorific value per unit of volume. Normally the temperature at the induction pipe is somewhere around 50° Centigrade.

To form an explosive mixture, the correct proportion of air must be added. The valve regulating the amount of supplementary air is controlled from the driving seat, and once set, rarely requires attention. It is customary to retain an auxiliary petrol carburettor, situated on a branch of the induction pipe, as a reserve in case of emergency, and also, in some cases, for rapid starting purposes, although it is not necessary to use petrol for starting. The admission of the gas-air mixture is regulated by the accelerator pedal in exactly the same manner as on a petrol vehicle.

In a previous article it was indicated why the power developed on producer gas is less than that obtained with petrol. When it is realised that the gas contains a relatively large amount of inert nitrogen (about 60%), it will be understood that a goodly proportion of the cylinder space is completely wasted, and it is as though, in fact, the vehicle were deprived of one or more cylinders.

It is possible to compensate to some extent for this loss in power. Firstly, by the ideal method of building a special engine with sufficiently large cylinders to make up for the wasted cylinder space referred to above. Secondly, by increasing the compression ratio. Normally, a modern lorry engine will have a compression ratio of 5½ or 6 to 1. This means that the charge in the cylinder is compressed from the full volume of the cylinder at the bottom of the stroke into the much smaller volume contained in the combustion space at the top of the stroke in the above ratio, which is about the maximum compression that can be borne when using standard pump fuels without danger of pre-ignition or serious risk of something breaking. Producer gas, having much less detonating power, can stand higher compression ratios with consequent gain in power output and economy of fuel. Eight-to-one is a commonly used ratio, but sometimes as high as 10 to 1 has been employed. In the latter case it would be quite impossible to use petrol even in an emergency.

In special gas engines a high compression ratio is, of course, provided, but in the case of adopted vehicles it can (in most instances) be achieved by planing off the underside of the cylinder head, or by fitting domed instead of flat-topped pistons.

The slow burning quality of wood gas can be offset by considerably advancing the ignition, thereby enabling the full force of the explosion to be utilised. Again, in specially built engines, the adoption of a much slower rate of revolution allows time for the whole cylinder charge to be burnt.

Where very steep gradients or heavy loads are likely to be involved, lower, or additional gears will give a reserve of power equal to almost any conditions. A compromise can be effected by altering the axle ratio, which means that the maximum speed will be reduced but more power obtained on the lowest gear.

As regards driving technique, there is very little fresh to be learnt. The principal points to be grasped by the new driver are the importance of correctly adjusting the air supply, and the fact that the accelerator cannot be "stepped on" in quite the same way as with petrol. The reason for the latter is that too sudden opening of the throttle is likely to empty the system of gas, with a definite time lag before fresh gas is generated.

The whole secret of successful driving lies in the correct adjustment of the air mixture The capacity of the cylinders being limited, only a fixed quantity of gas-air mixture can be accommodated. Therefore, if too little air is admitted a portion of the gas will remain unburnt; and conversely, if too muchriga is mixed with the gas, the surplus air is merely was tni cylinder space.

— *Wood, Feb. 1939.*

5. Woodcutting Research.

How experiments on tools are carried out at the forest products research laboratory—Mr. P. Harris's lecture at Glasgow on 10th October 1938:—

Mr. Harris began his lecture by saying that the increasing demand for higher rates of production in every type of manufacture and the utilisation of timbers that were comparatively new to the industry had brought many problems to machine and tool makers and to operators of machinery. Scientific study had been needed of the behavior of timber under controlled conditions of working; of the relation of tool shape and position, relative speed of tool and wood, and other factors to the growth characteristics and physical properties of the wood. Insvestigations had to be made to determine what modifications to the

tool and machines and to their method of operation were necessary to obtain the best results in working the newer, and even the already well-established, species of timber. This work was undertaken at the Forest Products Research Laboratory at Princes Risborough.

Describing the timbers on which experiments were carried out, Mr. Harris said that a certain proportion of the material used came to the Laboratory at Princes Risborough already sawn into planks, etc., but when a timber had be undergo all the tests connected with seasoning, preservation, strength and manufacturing processes, it was generally received in the form of logs. It was during the conversion of these logs into test material of appropriate size for the various studies that information was first gained about the timber. The relative ease of sawing, possible tendency for the material to bind on the saw, to twist or crack during sawing, the quality of sawn finish, and the effect of knots, resin or other contained material were observed. Different classes of timber needed different feed speeds, tooth shapes or pitch, and it was often necessary to experiment to find the most suitable conditions. "A timber is far less exacting, however, in these matters when it is in the green condition, as in the log, than it is when seasoned," added Mr. Harris. Dry timber could be exceedingly difficult to cut or finish well, and there was a wider field of study connected with different operations through which the seasoned material was likely to be passed.

For tests of this sort quarter-sawn and flatsawn test pieces were cut from the logs. As a rule, half of these would be kiln-dried and the rest air-dried, the material being matched as as far as possible. When seasoning was complete the rough sawn pieces would be machined to a standard size of 5ft. by 6in. by 2½in., and when passed through the various operations on which information as to the behaviour of the timber was wadnte. These included planing, ripsawing, crosscutting, bandsawing, moulding, recessing, boring, mortising, turning, and so on, carried out on standard machines and under normal working conditions. Tests were also made in connection with handworking, nailing and finishing treatments. The working qualities of the timber were assessed by measuring the power consumption in certain operations, such as sawing andplaning, by examination of the finish, and measurement of the dulling effect on the cutting edges of tools.

" It is often desirable to compare the behaviour of the timber under test with that of some well-known timber," the lecturer continued. " For instance, the basis of comparison for softwoods may be Baltic redwood, Baltic whitewood or pitchpine, and for hardwoods European oak or beech, Honduras mahogany, Burma teak or other timber, depending on the nature and possible utilization of the material being tested. "

Mr. Harris then made some intersting reference to cutting angles. " In planing, " he said, " one of the important factors, as regards the finish obtained, is the cutting angle. The seating of the cutters in the block and their protection govern this angle. Its value is usually 30 deg. or more on standard machines, and this is suitable for most softwoods and the milder hardwoods when straight-grained. Timbers with wavy, interlocked or other form of disturbed grain do not give good results with a cutting angle of 30 deg., but are liable to 'pick up,' especially when quarter-sawn material is planed. Reduction of the angle will decrease the ' picking up ' and usually a value can be found that gives a clean finish. As the cutting angle is reduced, however, the power consumption and the feed resistence increase, and it may be necessary to make a compromise by using a slightly less acute angle than the timber would require for producing the best finish. In some cases, of course, it is better economy to accept extra power cost and ensure obtaining smooth surfaces, thus obviating waste in sanding and inferior results from finishing treatments "

— *Timber Trades Journal 15–10–38.*

———:o:———

Notifications relating to Rangers.

The following promotions are ordered :—

I

With effect from 19th December 1938 vice Ranger A. Muhammad Akbar, invalided.

1. Sri P. K. Sankara Menon, from last grade (V) sub-protom to last (V) permanent.
2. Sri T. Venkataramayya, from temporary Ranger to last grade (V) sub-protem.
3. Sri V. K. Kunhiraman Nambiar, from officiating Ranger last grade to Temporary Ranger.
4. Sri M. B. Madappa, trained Forester to officiate as Ranger last grade. His promotion will take effect from the date of assumption of Rangers' duties. His officiating pay should be regulated with reference to the rules issued in G. O. No. 169 dated the 29th January 1938.

II

With effect from January 1939 vice Ranger T. G. Sitharama Mudaliar, restored to the IV grade, on appeal.

1. Sri N. C. Madappa, from last grade (V) sub-protem to last (V) permanent.
2. Sri T. Naganna, from temporary Ranger to last grade (V) sub-protem.
3. Sri S Narayana Nayak from officiating Ranger, last grade to temporary Ranger.

21—4—39. The officiating promotions to the Rangers' cadre, will take effect from the dates noted below against the individuals concerned.

S. A. Augustine	...	8th December 1938.
K. M. Achayya	...	10th December 1938.
A. Vyagappa Pillai	...	10th March 1939.
M. B. Madappa	...	10th March 1939.

13—9—38. Mr. D. E. Lewin. Ranger third grade, on special duty in the Nilgiris, transferred from Ooty to Waltair Circle to Peddapur Range, Godavari Lower Division. 2. Abdul Razack Sahib, Ranger fifth Grade, on relief by No. 1 to River Range, Godavari Lower Division. 3. Sri S. Ratnavelu Mudaliar, Ranger sixth grade, on relief by No. 2 to Polavaram Range, Godavari Lower Division.

6—2—39. Mr. A. S. Kaunds, Trained Forester, I Grade is granted extension of leave on average pay on medical certificate for two months with effect from 3-2-1939 in continuation of the leave sanctioned subject to his giving an undertaking that he will refund overpayments, if any if he subsequently decides to retire at the end of the leave or of an extension of that leave.

23—2—39. Subject to his giving an undertaking to the effect that he will, in the event of retirement at the end of the leave or an extension of the leave, refund the difference between average pay and half-average pay for the period of L.A.P. which would not have been admissible had the proviso to Fundamental Rule 81-(b) not been applied, Sri N. Subba Rao, Ranger, sixth grade is granted extension of leave on medical certificate as below:—

L. A. P. for 2 months from 11-2-39 to 10-4-39, and

L. H. P. for 2 months from 11-4-39 to 10-6-39.

With effect from the date of abolition of Chelama Range in Kurnool South Division and Kanigiri Range in Kurnool East Division the following postings of Rangers are made to take effect from 15-3-39 or earlier.

1. Sri Y. Subrahmanya Naidu, Chelama Range to Lakkavaram Range, Godaveri Upper Division. 2. Sri M. B. Madappa, ag. Ranger, Lakkavaram Range on relief by No. 1 will be in charge of Pulusumamidi Range (of which he is now in additional charge) or revert as Forester, Godaveri Lower Division on relief by Sri Surya Rao Naidu (already posted to Pulusumamidi Range) as the case may be. 3. Sri D. N. Subrahmanya Ayyar, Kanigiri Range to Gundlakama Range Kurnool East Division (New). 4. S. Sri M. S. Subbayya, ag. Ranger, Gundlakamma Range, on relief by No. 3 will revert as Forester, Kurnool West Division.

9—3—39. Sri Y. Subrahm[illegible]n Naidu, to Nandyal Range, Kurnool West Division. 2. Sri P. Gulab Singh, on relief by No. 1 posted to Lakkavaram Range, Godavari Upper Division 3. Sri N. B. Madappa, ag. Ranger, Lakkavaram Range, on relief by No. 2 reverted as Forester, Godavarai Lower Division.

11—3—39. Sri N. B. Madappa, ag. Ranger, Lakkavaram Range, Godavari Upper Division on relief by Sri Gulab Singh to Giddalore Range, Kurnool South Division. 2. Sri V. Bhaviah on relief by No. 1 to Gokavaram Range, Godaveri Lower Division. 3. Mr. C. S. King, Gokavaram Range, Gadaveri Lower Division on relief by No. 2 to Hospet Range, in Anantapur Division. 4. Sd. Ansur Badsha Sahib, ag. Ranger. Hospet Range, Anantapur Division on relief by No. 3 will revert to his permanent appointment as Forester in Salem Circle.

17—9—38. Mr. A. S. Kaunda, Trained Forester I grade on expiry of leave, to charge of Narasapatam South Range, Vizagapatam Division in relief of Sri M. Subbarao.

28—9—38. Sri B. M. Bopayya, Trained Forester, third grade, under orders of transfer from Bellary Circle to charge, of Narasapatam South Range, Vizagapatam Division.

12—10—38. Sri C. T. Tiruvengadam, Cherla Range, Godavari Upper Division to Sriharikota Range, Nellore Division. 2. Sri V. Rangachari, Rapur Range, to Cherla Range, Godavari Upper Division. 3. Sri Apparao Naidu, Sriharikota Range. to Gokavaram Range, Godavari Lower Division. 4. Mr. C. S. King, Gokavaram Range. to Rapur Range, Nellore Division. 5. Sri I. Sambasivarao Naidu, Sathiavedu Range, Nellore Division to River Range. 6. S. Ratnavelu River Range, to Sathivedu Range.

14—10—38. Mr. D. E. Lewin, Polavaram Range, Godavari Lower Division.

5—11—38. 1. Sri V. Rangachari, on relief of Rapur Range to Polavaram Range, Godavari Lower Division. 2. Mr. D. E. Lewin, on relief in the Ootacamund Circle to be Range Officer. Narasapatam South Range, Vizagapatam Division. 3. Ahmed Sheriff Sahib, Trained Forester to be Range Officer, Rapur Range, Nellore Division.

10—11—38. 1. Sri G. Apparao Naidu, Sriharikota Range, Nellore Division to River Range, Godavari Lower Division. 2. Sri I. Sambasivarao Naidu, Range Officer, Sathiavedu Range, Nellore Division to Cherla Range, Godavari Upper Division. 3. The posting of Mr. G, S. King to Rapur Range is cancelled.

Bellary Circle.

13—9—38. Ranger D. N. Subrahmaniya Ayyar, on return from leave on 16-9-38 to Kanigiri Range, Kurnool East Division. 2. Trained Forester C. J. Nanjappa, ag. Ranger, on relief by No. 1 transferred to charge of Sanipaya Range, Cuddapah South Division vice Ranger, A. Muthukrishna Mudaliyar granted leave. 3. Ranger S. Varadarajulu Reddi on relief by No. 2 will be relieved of the additional charge of of Sanipaya Range.

13—9—38. Trained Forester M. Ramanujam, transferred from Working Plans Circle posted to Sanipaya Range, Cuddapah South Division relieving Trained Forester C. J. Nanjappa.

28—9—38. 1. Sri K. R. Radhakrishnan, Trained Forester attached to Kurnool West Division to charge of Giddalore Range of Kurnool South Division. 2. On relief by No. 1 Sri A. Bhaviah,

transferred to Hospet Range of Ananthapnr Division. vice Sri M. Boppapya, Trained Forester transferred to Waltair Circle. 3. Sri K. Subbanna, Trained Forester transferred from Waltair Circle to charge of Giddalore Range in relief of K. R. Radhakrishnan who will revert as Forester in Kurnool West Division.

11—10—38 1. Sri M. S. Subbiah, Trained Forester and Ag. Ranger, Yerragondapalem Range, Kurnool East Division to charge of Gundalakamma Range, Kurnool South Division. 2. Sri V.N. Subramanya Ayyar, Ranger, Gundlakamma Range, Kurnool South Division, to Yerragondapalem Range, Kurnool East Division.

20—10—38. 1. Sri A. Bhaviah, Ranger, fourth grade is reposted to Giddalore Range, Kurnool South Division. 2. Sri K. Subbanna, Trained Forester on relief by No. (1) to charge of Hospet Range, Anantapur Division. 3. On relief by No. (2) Trained Forester and ag. Ranger B. M. Boppyya will proceed to Waltair as orderd already.

3—11—38. 1. Mr. S. A. Dawson, to Dornal Range, Karnool East Division. 2. Md. Ansar Badsha Sahib, Tained Forester and ag. Ranger, on relief by No. (1) will revert to his permanent appointment as Forester, Cuddapah North Division.

17—11—38. Sri Ch. Ramamurthi, transferred from Waltair Circle to Bellary Circle, to charge of Dornal Range, Kurnool East Division. 2. Md. Ansar Padsha Sahib, ag. Ranger, Dornal Range, on relief by No. (1) will revert to his permanent appointment as Forester. 3. S. M. Ansar Ali Sahib, transferred from Waltair Circle to Bellary Circle, posted to charge of Sanipaya Range, Cuddapah South Division. 4. Sri S. Ramajayam, ag. Ranger, Sanipaya Range, on relief by No. (3) will revert as Forester in K[illegible]pol East Division.

25—12—38. 1. Mr. D. E. Lawin, to charge of Cherla Range, Godaveri Upper Division. 2. Sri. S. Seshagiri Rao Naidu, Trained Forester and ag. Ranger, Cherla Range on relief by No. (1) reverted as Forester, V Grade.

31—12—38. Sri. C. S. Sivagnanam, Trained Forester on return to duty on 1-1-39 to charge of Narasapatam South Range, Vizagapatam Division. 2. Sri, B. M. Bopayya, Trained Forester on relief by Sri. C. S. Sivagnanam is reverted to his permanent post as Forester.

10—1—39. 1. Ranger V. N. Leapingwell, on return from leave on 12-1-39 reposted to Palnad Range, Guntnr Division. 2. Trained Forester and ag. Ranger C. J. Nanjappa, on relief by No. 1 will revert as Forester, Godaveri Lower Division.