YOJANA

TENTH YEAR
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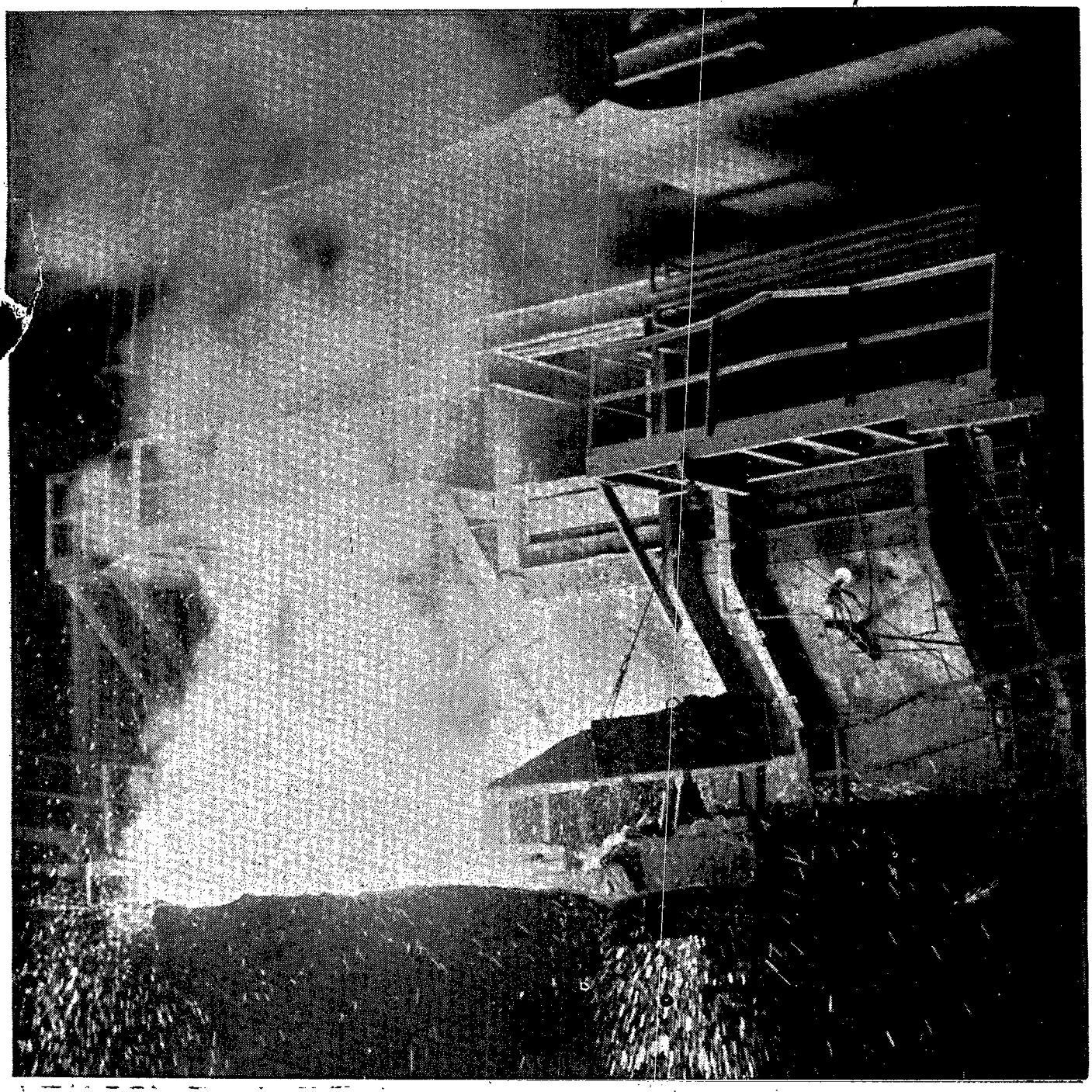
No-4



A STEEL PILGRIMAGE
RURAL WORKS IN THREE STATES
PROGRESS IN NAGALAND

ABOUT YOJANA

Yojana seeks to carry the message of the Plan to all sections of the people and to promote a more earnest discussion of problems of social and economic development.

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IN THIS ISSUE

COVER : Photograph shows steel making at Durgapur.

LETTERS

A RIDDLE

I have a riddle to share with you and other readers of *Yojana*. It is as follows :

FP+FP=P

Can you solve it ? Can you find out what it actually means ? No ? Well, let me do it for you.

The first 'FP' stands for Food Production.

The second 'FP' stands for Family Planning.

The letter 'P' occurring after the equation sign stands for Prosperity. The formula will thus read: Food Production+Family Planning=Prosperity.

Madras V.K. PALANISWAMY

REVIEWER REVIEWED

THE scathing invectives indulged in by Mr V. Sagar while reviewing my book 'INDIAN RURAL ECONOMICS' in the *Yojana* of August 1, 1965 would appear to be an unceremonious attempt to besmirch the author more than the book in question. The reviewer happens to hold a so-to-say responsible position in the Planning Commission but that does not necessarily make him competent or give him the requisite 'imprimatur' for unwarranted and peremptory pejoratives against independent authors who do not choose to toe the line of the governmental authorities on topics of national importance. The 'eminent' reviewer, unfortunately, does not have a single work of his own to his credit, although he is much better placed to use the necessary influence for getting his works published, than myself about whom he could have the audacity to say,"...Anyone with money or influence can get books printed irrespective of their quality". (*Yojana*, October 24, 1965 Mr. V. Sagar's reply to Mr. D.D. Goel's letter published in the same issue). He can certainly not claim to be an 'au-fait' on the subject just because he happens to hold some post in the Planning Commission, nor can he get away with his highly irresponsible, undignified and slanderous personal remarks about the authors as he has chosen to pass in his 'review' in question. Mr. V. Sagar far from being a good reviewer is absolutely not fit to be placed on the reviewers' panel of such an estimable journal as *Yojana* which is dedicated to projecting a balanced image of thinking on national planning and development. Had the 'learned' reviewer confined himself to the merits or demerits and quality of the subject dealt with in my book, it would have been most welcome. It was, however, strange of him to pose as an 'ignoramus' having little or no knowledge of the technique and etiquettes of reviewing, by passing imperious remarks about the writer, rather than the book under review.

My books (so far eight in number) have had the unique privilege of containing forewords and opinions by such eminent and distinguished scholars as Mr Asoka Mehta, Dr B.R. Sen, Dr Ram Subhag Singh, Mr Shriman Narayan, Mr Surendra J. Patel, Prof H.G. Halcrow, Prof T.W. Schultz, Dr J.H. Dalton, to name only a few. Mr V. Sagar is but an insignificant person in their comparison, either as a scholar and commentator or as a reviewer. Hence any adverse opinion expressed by novices like him can hardly carry any weight or credence, and will only be brushed aside by discreet and discriminating readers as mere trash and nothing more. As for myself, I would not care to call from Mr V. Sagar any apology for his innuendos against myself, but I will only request the higher authorities in the Planning Commission to give their considered thought to the question whether it is not primarily due to the presence in the Planning Commission of persons possessing such immature and puerile thinking and knowledge that a large number of our schemes and developmental plans have never yielded any tangible gain to national economy. It is not always planners who should know or are actually acquainted with the practical problems in the field of agriculture, industry, trade, commerce and such other subjects.

A very large number—and probably the majority of our national experts and scholars in various fields—are those who are outside the governmental fold, and who are rendering invaluable service to the national cause by independent and pragmatic expression of views on national subjects according to their own experience and study of these problems. Indian writers on agricultural economy have rendered yeoman service and it is unfortunate that they have continued to be by-passed while foreign writers and commentators on Indian agriculture have been given undue importance. I am referring to the words used by Mr V. Sagar: "I am really pained to find that despite India being predominantly an agricultural country we still have to depend on foreign books on the agriculture subject" (*Yojana*, October 24, 1965). Is this how the people in the Planning Commission think about our scholars and writers?

Bhopal S.C. JAIN

YOJANA

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MOVEMENT FOR GROWTH

THE wheel has always been the symbol of movement, energy, progress. It represents not only physical mobility of men and goods but social mobility as well. Trains and buses have played a great part in breaking down caste barriers. Roads have helped the fight against epidemics. A bicycle or a better bullock-cart adds to a farmer's income. Transport facility is one of the basic factors determining the location or expansion of an industry.

Transport is regarded as a key element of what economists call "infrastructure". Along with education, training and health services, it provides a base on which the rest of the economic structure rises. In the advanced societies, the infrastructure is taken for granted. A developing society has to take the initiative in providing it. Transport—which includes railways, roads and road vehicles, ships and harbours, aircraft and aerodromes—has rightly been accorded an important place in our plans of development. The outlay on the transport and communications sector in the three Five-Year Plans has been: First Plan Rs 523 crore, Second Plan Rs. 1,300 crore and Third Plan Rs. 1,486 crore. The share of total public sector expenditure allocated to this sector in the three plans has respectively been 27 per cent, 28 per cent and 20 per cent. It is also a sector in which we come nearest the self-reliant stage. And the demand for transport has been growing at a faster rate than the increase in national income.

When there are alternative modes of transport, naturally there is competition, and even conflict, among them. Such conflict has been experienced in our country too, even after our adoption of planning. One of the aims of planning is to avoid conflict, and the consequent economic waste. If our economy is to grow, we need a better railway system, better road transport, more shipping and inland water transport, and indeed more bullock-carts and bicycles. There is no need to imagine that competition among them is inevitable. There is larger scope for all. They have a big job to do together.

A committee was set up in 1959 by the Planning Commission, in consultation with the Ministries of Railways and Transport and Communications, to study the entire question of transport policy and co-ordination. Its preliminary report came out in 1961. The final report has just been published.

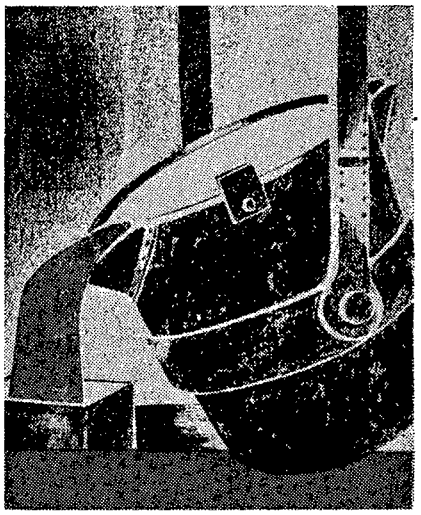
The report observes that "well-conceived, forward-looking and technologically progressive developments in transport" save costs in other sectors and also speed their growth. The committee stresses the need to take a long-term view of transport policy, since transport requirements will grow with the growth and diversification of the economy. The role of transport, the committee observes, is even more fundamental and dynamic in a developing economy than in the more advanced economies. As basic industries grow, and bulk traffic has to be carried over long distances, the railways will have to handle much bigger freight. As consumer industries grow, there will be greater demand for road transport. The opening up of rural areas and the development of agriculture and rural industries will also make demands on road transport and on inland waterways. Expansion of foreign trade requires expansion in shipping and port facilities. As the committee rightly says, a national transport policy must seek to build a composite network out of all these. A transport structure of the right size and pattern must be dovetailed into the scheme of economic development. Transport planning has to go hand in hand with planning for industry and energy. The various modes of transport will, in such a policy, become complementary to one another.

The bullock-cart, the push-blke, the puff-puff, the crowd-scattering lorry, the dhow, the river-boat, the oil-pipeline, the jet engine—each of these has a place in the composite network. The committee has explained the place of each in the network at great detail. The principal recommendations have been summed up in another part of this issue. The committee throughout stresses the complementary character of the different modes. The railway system has to become increasingly more efficient rather than add to mileage; and it must meet the needs of the larger and heavier industries. Road transport will have to be used to open up the less developed areas, carry economic development services to the farthest village, promote the growth of agriculture and rural economy and also take care of people wanting to travel from one town to another. Policies of motor-vehicle taxation of various States must be unified. The roads themselves must be built better. And transport research and utilisation of research must both develop further. Since co-ordination is a continuous problem, the committee has also suggested a permanent set-up which will study relative costs and benefits, correct imbalances, judge the demands on transport by other sectors of the economy, and correlate the efforts of different modes of transport, different regions and different authorities.

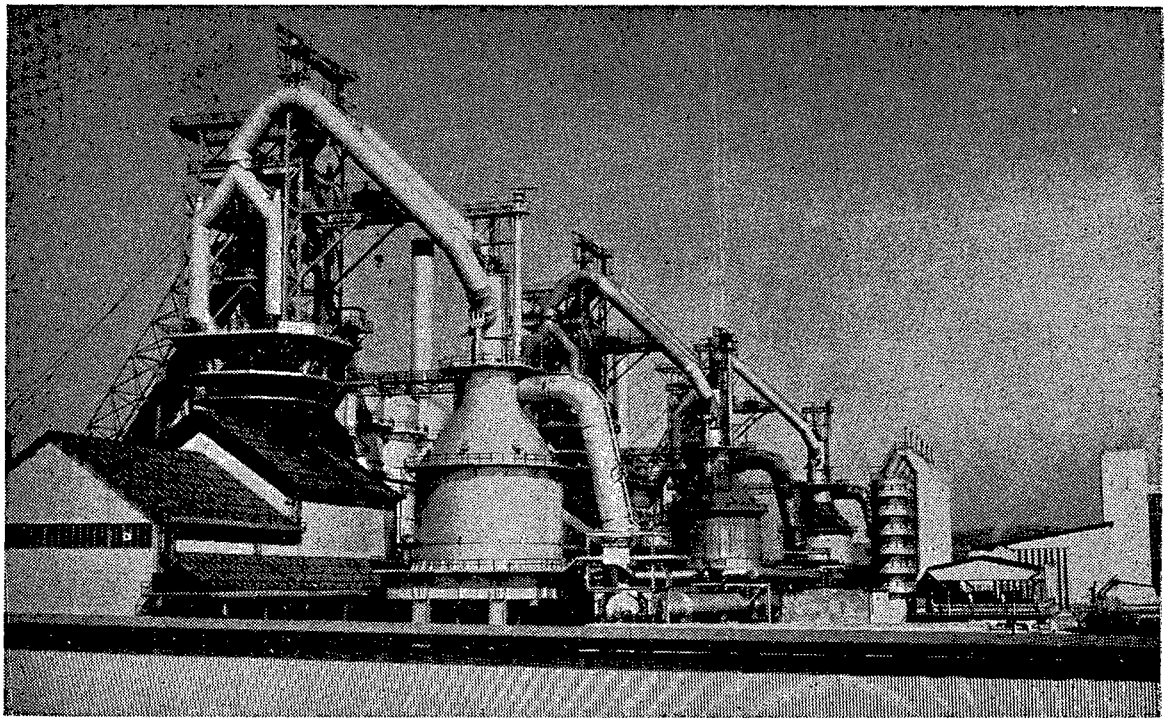
Transport is a capital-intensive field of development. The committee has shown how we can get the best returns on the money we put in.

HSL MAKES PROFITS AND BUILDS UP

STEEL EXPERTISE



K.S. RAMANATHAN reports on tour of Rourkela, Bhilai, Durgapur



A view of Rourkela ; Row of blast furnaces

"THE net income of the Tirupati temple is more than the profits of a steel plant in this country." This comparison between a temple and a mill came from Mr Raju, one of the high executives of the Durgapur Steel Plant. He was talking to a group of newspaper correspondents who were recently on a tour of the three public sector steel plants of Rourkela, Bhilai and Durgapur.

What Mr Raju and the newspapermen were discussing was whether accounting returns and profits were the best criteria to judge development projects and the whole process of transformation. We have these projects, big, medium and small, which are springing up throughout the country over the last 15 years as part of India's development programme. Are they mere business or commercial ventures? Or are they primarily the sinews being fitted into the fabric of our nation to ensure for it a process of continuous growth and development? To change the simile, are they not like the nourishing food, education, training, etc., that a thoughtful parent provides for his younger ones so that they, in the years ahead, grow and live a fuller and richer life? One would not dream of attributing the profit motive to all that a parent does for ensuring his child's future.

In trying to put across this idea to the hard-boiled journalists, Mr Raju seemed to hint that too much of enquiry on the profit and loss

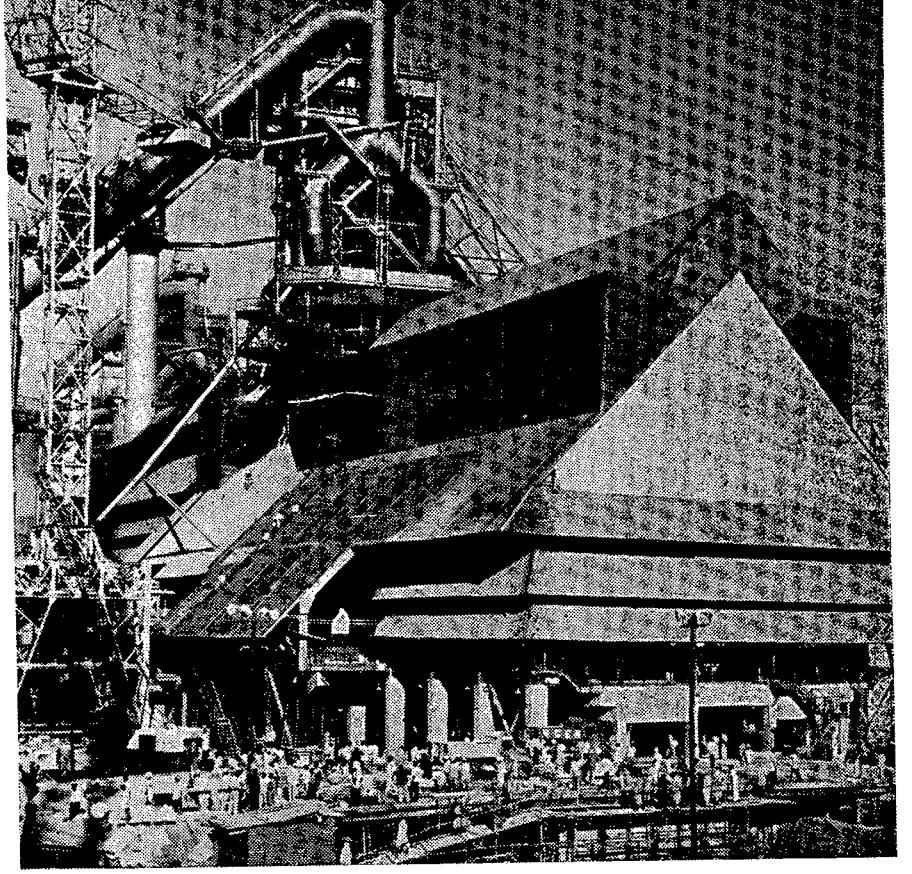
side of vast developmental undertakings was not only misplaced but might even prove stultifying.

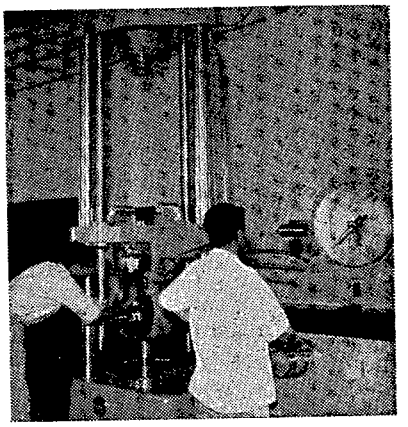
Not that the normal economic considerations are wholly irrelevant in the working of large industrial undertakings sponsored in the public sector, but they are not that basic as some would assume or assert. As the Chairman of Hindustan Steel, Mr M.S. Rao, told us at Ranchi, the public sector steel plants have gone through a significant period of achievement in 1964-65, which is the fifth year of production. They have reached full capacity production and have also achieved a breakthrough in establishing the economic viability of our steel plants.

Mr Rao went on to say: "Considering the fact that the large majority of the employees of Hindustan Steel are young people, who have got their training only after joining the company, I feel we should be thankful to them. It is their dedication and determined effort that has made possible this creditable result in this period of time." We shall certainly miss something vital if we overlooked this spirit of dedication and this atmosphere of determined effort.

For the first time in its career, Hindustan Steel achieved a net surplus of Rs 21.45 million in 1964-65. Even though this amount is small in relation to the equity investment, the achievement is significant as this surplus was attained after making a higher provision for depreciation—more than Rs 66 million—and in spite of a steady rise in direct costs due to higher wages, higher cost of raw materials, import duty and other external factors. The gross surplus after meeting all expenditure and before providing for depreciation and interest on Government loan was as much as Rs 587.7 million as compared to 452.14 million in 1963-64. Out of this surplus the interest paid on Government loan was Rs 178.32 million and depreciation provision, Rs 387.73 million. The net surplus of the various units after all expenditure and all necessary provisions were: Rourkela Rs 35.02 million, Bhilai Rs 5.03 million, Durgapur Rs 5.33 million and the coal washeries Rs 2.36 million.

Today Rourkela, Bhilai and Durgapur together account for nearly 75 per cent of the saleable pig iron





These pictures of Bhilai Steel Plant show the blast furnace (top), a section of the research laboratory (left) and finished steel bars made for defence use (bottom).

in this country, 46 per cent of the saleable semis, 51 per cent of the ingots and 40 per cent of the finished steel.

The working results of Hindustan Steel, which manages all the three steel plants as well as the alloy steel project at Durgapur, are therefore very satisfactory; yet why is there an almost continuous hue and cry against it ? Perhaps the general impression is that big projects in the public sector have invariably some skeletons in their cupboard and the delight of the journalistic profession is to drag them out. Essential though this function is, there is the danger that the whole significance of this vast endeavour might be missed if one was too engrossed in counting the paise.

For example, the neat township of Rourkela, separated by a hill feature from the plant site, the pleasing variety of houses of varied designs, the well-kept roads, the well provided hospitals, the community centres, playgrounds and schools and, above all, the evolution of a new society of more than 100,000 people at the township, all this would hardly get into the computation. Rourkela was once a wilderness where nothing moved; today even as one approaches the town by air, the brick-red column of thick smoke spiralling up in the blue sky symbolises the revolution that has overtaken the country. Everyone in Rourkela seems to be eager to talk about its metamorphosis during the last two years "from a sick child into a healthy adolescent". Not only have the initial difficulties been overcome but rapid headway is being made in every sphere. The rate of production is steadily going up; industrial relations are cordial; and there is keenness to maximise profits. The General Manager of Rourkela, Mr. A. N. Banerji, is indeed proud of the fact that Rourkela has no internal problems now.

Wherever one goes, one finds that this transformation is the result of a positive and determined effort to ensure full utilisation of resources, equipment and technical skills.

There is widespread realisation that the introduction of the L.D. steel-making process in Rourkela brought to India the most modern methods of steel-making. The flat products that this steel plant is turning out are something unique for the steel industry in this part of the world. One criticism voiced against Rourkela is that as a 'turn-key' job, it has not been conducive to self-reliance. But, as one watched the technicians in Rourkela handling the most sophisticated steel-making equipment with ease and confidence, doubts began to arise whether the criticism against turn-key jobs is not sometimes exaggerated.

COMPARED to Rourkela, Bhilai has been more fortunate because right from the start it has had a glorious career. If there is some accumulation of stocks of rails and even of pig iron, so what? The plant continues working smoothly without any hitch and the expansion programmes, both the Third Plan and the Fourth Plan ones, are proceeding apace, some even ahead of schedule. There is bubbling confidence writ large on everything one sees in Bhilai. Accompanying this confidence is clock-work precision appropriately high-lighted by the daily production control meeting on the inter-com, which the visiting pressmen had an opportunity to hear from the General Manager's room. So thorough was the job and so complete the follow up that some correspondents had the uneasy feeling that if such conferences were held everyday in the editorial rooms of the newspapers, very few of them would like to continue in the profession.

At the end of two days' stay in Bhilai the newspaper group faced the General Manager at a final press conference with the question : "Sir, we have been in Bhilai for two days looking out for the problems and troubles here; we have not been able to find any. Now could you tell us what your problems are?" Mr Indrajit Singh was forthcoming. He enumerated his problems: shortage of ingot mould, inadequate raw materials-planning for the expansion programme, the locomotive position, the accumulation of pig iron and the slight hold-up in some of the expansion programmes.

FROM Bhilai to Durgapur the changeover is smooth and natural. The General Manager of the plant, Dr. D.P. Chatterjee, a technocrat not given to wasting words, impressed the pressmen by his quiet efficiency and complete confidence. In fact the keynote in Durgapur is this confidence. Not only is the plant stabilised but it is the only one amongst the three public sector steel plants which has its Fourth Plan expansion programme almost ready for execution. Pressmen whose thirst for accountancy had not yet been quenched were nonplussed for a moment when Dr. Chatterjee frankly told them that he did not expect Durgapur to make any profits in the current year. The most fascinating thing in Durgapur was the Wheel and Axle Plant. The sight of a huge steel ingot being pressed into the shape of a wheel will remain long in the memory of anyone who has watched the process.

The Alloy Steel Project at Durgapur was described by newspapermen as something of a "modern marvel". Even though the bulk of the work on the plant is still going on, the completed portions give the impression that in the most sophisticated realms of steel-making, India has arrived.

General impressions apart, what remain permanently etched in the memory of any visitor to our steel plants are particularly three:

FIRST, India has asserted itself as an up and coming power in the field of steel production;

SECOND, the technical skill required to operate gigantic steel mills has been mastered by our young engineers and other technical hands all of whom are in the age group of 20 to 40, which means that a firm basis has been laid for spectacular progress in the future through our own workmanship; and

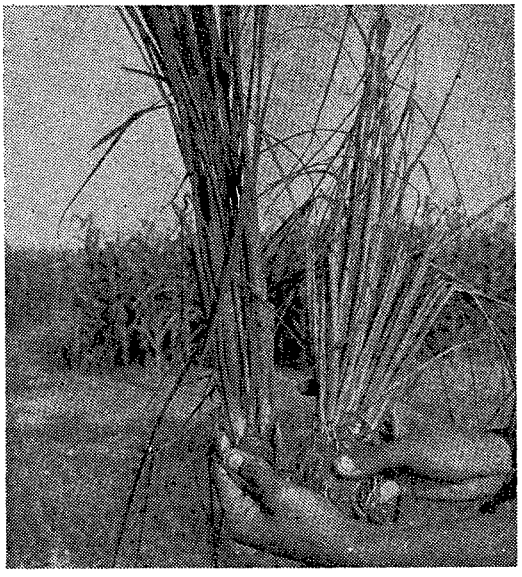
THIRD, even the uphill task of building up steel expertise which will include the overall designing of the steel plants, designing the various kinds of equipment that go to make it, the preparation of project reports, etc., has also progressed side by side.

Visits to the training institutes at the three steel projects and the Central Engineering and Designs Bureau at Ranchi provided impressive evidence on all three points. Here one came across young engineers and technicians in different branches of engineering and metallurgy grappling with problems, for the first time in India, on whose solution will depend largely the development of industrialised India of tomorrow.

HIGH YIELDING VARIETIES
Core of the New Agricultural Strategy

PROVEN RESPONSE TO MORE NITROGEN

G.V. CHALAM
Deputy Agricultural Commissioner, Government of India



At left is Taichung rice in Andhra showing how well it has withstood this year's drought

THE new agricultural strategy aims at an additional production of 25.5 million tons by the end of the Fourth Five Year Plan. Targets alone may not mean anything unless supported by methods and means. In this programme everything is specified and definite. There is nothing vague in practical terms about it. That a correct diagnosis of the malady has been arrived at is admitted on all hands. The areas for applying the remedy have been located. Fertiliser doses are specified and, finally, the varieties which give the highest response in the form of grain are also indicated. Since the full implications of the programme have been taken care of, there is no room for any misgiving.

The entire strategy centres on high yielding varieties of crops. In paddy these varieties are Taichung Native 1, Taichung 65, and Tainan 3. In wheat, they are Sonora 64 and Lerma Rojo. There are also eight hybrids of maize, two hybrids of *jowar* and one hybrid of *bajra*. Perhaps some more are to come adding or replacing the current list, as there is no finale ever in research.

The high yielding varieties have a build-up based on scientific data. The concept of new plant type has many features. One of them, in rice and in wheat, is the dwarf nature of the plant, whose advantages have been emphasised by Dr M.S. Swaminathan. There are other features too, which go with the make-up of the new plant type, such as a very efficient photosynthetic mechanism constituted by erect dark green leaves, a deep-root system and a developmental time-table.

The concept of new plant type has brought revolutionary changes in plant breeding programmes. Taiwan and Mexico are outstanding examples of agricultural achievement through this concept in the cultivation respectively of rice and wheat. Only 20 years ago, at the close of the Second World War, Taiwan's rice yield was 1150 lb. per acre. According to the latest figures available Taiwan has achieved an average yield of 3,300 lb. per acre. While factors such as the adequate supply of fertilisers and judicious use of irrigation contributed to this phenomenal success, the main theme was the evolution of *ponlai* (tropical japonica) rice varieties. All these varieties have taken the yield from a level of 2000 lb. per acre to 6000-7000 lb. per acre, an increase obtained in the experimental stations. So is the story with the dwarf varieties of Mexican wheat where new records in yield have been established.

With the mounting food crisis in the country we are running a race against time. We are compelled to think of new techniques and aids that will help us to win the race. The introduction of these varieties as potential contributors to higher yield in India is fairly recent, although the genetic stocks as germ-plasm were received some time earlier. The question "What is wrong about the existing varieties?" might legitimately be asked, and it has to be answered. Let us take the case of paddy. While the quality of the existing varieties is perhaps superior from the consumers' point of view, their response to fertilisers has always been poor and never attracted the attention of the cultivator even in the States where the cultivators are most fertiliser-minded. According to the most liberal estimates (Seth & Abraham 1965) the response never increased above 15 lb. paddy at 40 lb. nitrogen while the diminishing return started even at lower doses. In another review of trials (Sethi, Ramiah and Abraham 1952) where the experiments were conducted under controlled conditions, the results are reported as follows:

N applied per acre in lb.	*Response to one lb. of N. in the form of grain in lb.*
10	10.1
20	9.3
40	7.7
60	6.1
80	4.5

More recent figures on some of the best local improved varieties studied at Central Rice Research Institute, Cuttack, are as follows:

TABLE 1

		Response per lb. of N as grain in lb./acre levels of N		
		30	*60*	*90*
Early varieties:	PTB. 10	7	0.5	2.1
	MTU. 9	5	4.6	4.5
	MTU. 15	5.3	2.2	5.8
Medium varieties:	141	15.7	13.4	0.8
	BK. 6	5.2	7.0	0.3
	T. 1233	14.4	5.0	1.2
Late varieties:	T. 1242	14.6	10.3	
	BAM 9	0.5	1.8	
	T. 90	11.0	3.0	
	Triple Cross	18.0	2.8	
	MTU. 19	10.2	0.7	
	SLO. 14	8.3	1.5	

In many of the places the response to N mainly depends upon the initial agronomic base. Under initial low fertility conditions the response may be very good whereas under high fertility conditions the response is bound to be low. Consistent results under field conditions may be fairly difficult as the field conditions vary considerably from locality to locality and season to season. In more recent trials at the Central Rice Research Institute for response with almost the same varieties as above, the results show (1963) that "addition of nitrogen in general has depressed the yield. The depression was not significant up to a level of 44 kg./hectare but thereafter the fall in yield was significant".

Now the questions posed are: (1) whether the exotic varieties give higher yields than existing varieties even without the use of fertilisers and (2) whether they can take higher dose of fertilisers as compared to the existing varieties.

Taking the case of Taichung Native 1 paddy now, some data are available for the last two seasons (both dry and wet) from a number of experiments conducted in almost all the States of India from over 120 locations which include research stations, seed multiplication farms and holdings of different sizes belonging to individual farmers. The results represent a good cross section in terms of variety.

Response to Fertilisers

In almost all these places Taichung Native 1 was cultivated under conditions of heavy doses of fertiliser. Only at two or three places, it was worked at O level also. The response at these places is given below:

	Yield of grain per lb. of nitrogen		
Level of N	*40*	*80*	*100/120*
Agricultural College, Rajendranagar, Hyderabad	32.6	25.1	30

Data available at the intermittent levels without O level indicate the following:

	60-90 N	*60-120 N*
In Andhra both at Maruteru and Samalkot under high fertility heavy soil conditions where the soils generally lodge.	21 14	17 in other varieties 11 no response at all.

The average yield of 85 locations so far received is about 4,000 lb. while the highest yields touched 8000 lb. per acre. In nearly 10 per cent of the cases the tests failed owing to circumstances beyond the control of the cultivators. Yet the variety commended itself to the cultivators owing to the following salient features:

1. High fertiliser response
2. High degree of drought resistance
3. Its suitability for both the seasons in the year
4. Dwarf non-lodging character
5. Profuse tillering nature with synchronisation of tillering

The variety is highly susceptible to bacterial blight under certain conditions. Control measures are being worked out and an antibiotic has also been found which provides temporary remedy.

We have to analyse the new agricultural strategy in the light of the data presented above and see whether too high dosages of fertilisers are being prescribed. For the high yielding varieties of paddy we have suggested a dosage of 100 N. This has to be examined in the light of:

1. Response to fertilisers
2. Specific advantages in prescribing the dose
3. Economics of high fertiliser doses

The figures clearly show that the curve does not diminish even at 120 N. Indeed optimum response is obtained between 80 and 100 N, depending upon the general

GRAPH SHOWING ADDITIONAL YIELDS OF OF PADDY IN Lb. PER ACRE AT VARIOUS LEVELS OF N IN CASE OF THREE VARIETIES IS TAICHUNG NATIVE-I, I.J. 2410 AND ADT 27 AT. AGRL. COLLEGE HYDERABAD IN THE YEAR – KHARIF 1965

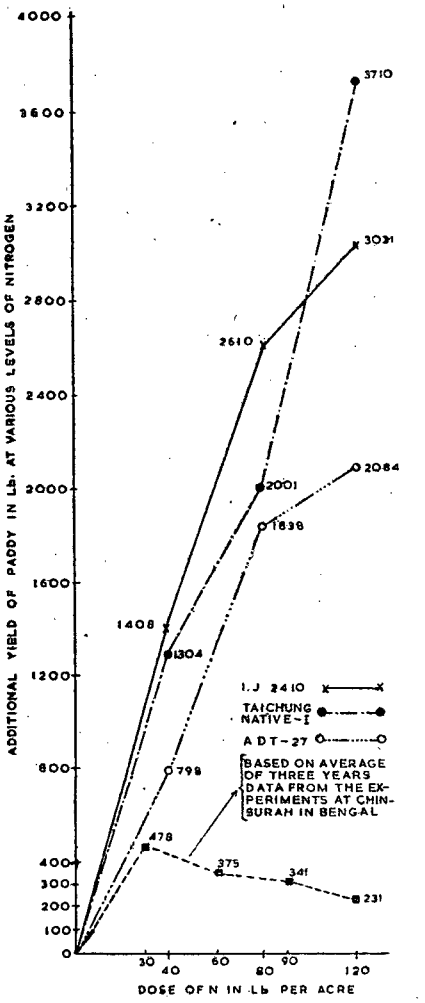


TABLE 2

State	*Govt. farms*	*Private farmers*	*Total area from which results received*	*Average yield in lb./acre*	*No. of failures*	*Yield under failure*
Andhra Pradesh	10		13.5	5000	1	2500
		22	11.0	4500	4	1500
Orissa	11		21.0	3600	2	200
Maharashtra	4 RS			4500		
	3 SMF			3000	Not reported	
		1		8400		
Punjab	2		5	4000		
		1		3600		
Uttar Pradesh	5		7	4000		
		1		5700		
Madhya Pradesh	2		22	2000*		
Assam	2			3400		
		1		5740		
West Bengal	6			3500	1†	
Gujarat		1		8500		
Madras	3		2.15	4000	1	924
		5		4500	1	473

*Under severe drought conditions
†Damage by hailstorm

response in that locality. The idea has been to obtain the optimum response but not the maximum response.

As regards specific advantage, maximum benefit of the irrigation potential has to be exploited which can be done only under high doses of fertiliser. Productive irrigation area is limited in extent and it should be put to the maximum advantage. This is what the new agricultural strategy envisages.

Now to the economics of high fertiliser doses. It has to be examined whether the farmer or tenant will find it profitable to use higher doses of nitrogen on the new high yielding varieties or whether he will find it profitable to use more nitrogen on existing varieties. It is a matter of common experience for anybody connected with rice production that the existing varieties hardly stand any dose above 20 N in productive areas like the deltas of the Krishna and the Godavari. The plants lodge beyond a particular height. Even if perchance they stand, the cyclonic winds

at flowering time put them flat on the ground. Hence no amount of persuasion will ever make the farmers go in for any thing more than the minimal dose. But there is ready acceptance of higher doses if the properties of the new variety are demonstrated to them.

The next question is: will this variety pay? The Principal of the Extension Training Centre, Samalkot, East Godavari District, Andhra Pradesh, gave a profit and loss account, a summary of which is given in Table 3. These manurial schedules are different from those prescribed. According to the manurial doses in the new agricultural strategy the inputs of fertilisers only cost Rs. 150.

Now let us examine in relation to low and high doses of fertilisers (Table 4).

Suppose the farmer spreads his 100 N over two and a half acres @ 40 N per acre. His expenditure is about Rs. 725 while his return is Rs. 1,687. On the other hand, his investment of 100 N in one acre would involve an expenditure of Rs. 350 with a return of Rs. 915. As such for every rupee spent at 40 N level the return is 2.32 and at 100 N level the return is 2.61 times.

Higher doses of fertilisers have greater appeal to small farmers with small holdings as in Andhra Pradesh who can maximise their profits. With hardly less than an acre a year ago, today there are more than 12,000 acres of standing crop in 2,000 holdings.

A voluntary seed certification programme is on the ground to produce certified seed of Taichung Native 1 for two million acres in the Kharif season of 1966. Firm indents for such seed have been received for nearly one million acres. No miracle is being promised, but a programme which is very much in the realm of reality.

TABLE 3

		Rs.	
Preparation of the nursery to transplant 1 acre	..	16.00	
Preparation of the field and transplanting (including green manure)	..	69.00	
Fertilisers: 140 N	..	140.00	Very high doses not necessary
80 P_2O_5	..	56.00	
90 K_2O	..	63.00	
		259.00	
Irrigation	..	20.00	
Interculture	..	15.00	
Harvesting, threshing, cleaning, bagging, etc.	..	46.00	
Plant protection	..	25.00	
		365.00	
Income:			
32 bags of 75 kgs. @ Rs. 32 per bag		1024.00	
½ ton straw @ Rs. 30 per ton		15.00	
Gross		1039.00	
Net Profit		674.00	

TABLE 4

Experiment under 40N

Cost of cultivation			Receipt	
Under transplanted condition	Rs. 200	+	Normal yield	
*Cost of fertiliser @ Re. 1 per lb.	Rs. 40		Extra grains as response	
Plant protection	Rs. 50		1200 lbs. @Rs. 30 =	Rs. 225 per 75 kgs.
				Rs. 135
	Rs. 290		Net profit	.. Rs. 135

Experiment under 100 N (according to new agricultural plan)

		Extra points	@25 lb. per lb. N
Cost of fertilisers	Rs. 100	2500	
Plant protection etc.	Rs. 50		
	Rs. 150.	Cost	.. Rs. 465
		Net profit	.. Rs. 350

*P_2O_5 and K_2O are not taken into account as they were administered in normal doses.

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SOME COMMENTS ON DR CHALAM'S ARTICLE

By B. S. Minhas and T. N. Srinivasan

When we were told by Dr Chalam that he had written a reply to our earlier article (*Yojana*, Republic Day 1966 Special Number), we were led to expect that he would throw light on some of the issues raised by us. We regret to state that on reading Dr Chalam's article, we find that he has not joined issue with us at all.

It may be recalled that we had ourselves stated that the new strategy was based on a correct diagnosis of the agricultural problem. We had also said that "these experiments, however inadequate, do suggest that the exotic varieties (a) give higher yields than existing varieties even without the use of fertilisers and (b) can take higher doses of fertilisers as compared to the existing varieties". Our criticisms of the official strategy were that (a) evidence on exotic varieties was based on experiments conducted only in the last two years and in a few experimental stations and (b) even the results of these experiments on new varieties of wheat did not support the suggested dose of 100 lb. of nitrogen per acre either from the point of view of maximising additional national grain output from a given volume of fertilisers and new seeds or from the point of view of private profitability under different tenurial arrangements.

We had indicated that a proper reallocation of available fertilisers between new and old varieties to be used on land with assured water supply would yield a significantly larger volume of wheat output. The importance of these results can hardly be over emphasised as long as fertilisers are in limited supply. We were also of the view that concentrating an overwhelming proportion of available fertilisers on a few exotic varieties and on a limited area is tantamount to putting all of one's eggs in one basket. We touched on the performance of new varieties of rice only in a footnote as we had no data on their performance.

Dr Chalam has not joined issue with us on any of these points of criticism. He

(*Continued on Page 18*)

SUNIL GUHA : Impressions of a Tour

Around Rural Works Projects in Three States

Great Benefit to People at Small Cost to Government

EMPLOYMENT in Indian agriculture is linked with the peaks and slopes of agricultural operations. While there may be an actual shortage of labour at harvest times and other peak seasons, a large pool of unutilised labour power exists, in many areas, for 100 to 150 days a year during the slack months.

The Rural Works Programme was included in the Third Plan to serve as a means for harnessing this potential resource and for evening out the sharp seasonal variations in employment and incomes, especially in areas where this problem is acutely manifest. Though finance for this programme could not be made available on the scale contemplated in the Plan document, especially after the declaration of the Emergency, it was proved to be of considerable benefit to agricultural workers in several States and resulted in the creation of a variety of community assets.

Maharashtra Leads

IN the course of a recent tour of Maharashtra we paid field visits to four rural works blocks located in the districts of Thana, Ahmednagar and Poona. Both community works and works benefiting the lands of individual farmers have been taken up under the programme. The first category includes desilting of old fish ponds and excavation of new ones and construction of *moorum* and metalled roads; the second category includes conversion of *varkas* (grassy, inferior) lands into paddy lands and *nulla* bunding.

The labour component of the first category of schemes was decidedly higher, being 50 to 60 man-days per 100 rupees of expenditure with an element of public contribution. The second category of schemes, for which loans were given to individuals, generated hardly 40 man-days per 100 rupees of expenditure. Though a strict procedure has been followed to ensure proper utilisation of the loan and timely recovery, grant of loans to individuals is not ordinarily permissible under the Rural Works Programme.

At the suggestion of this writer, the Government of Maharashtra has now decided to take up the schemes relating to *nulla* bunding and conversion of *varkas* lands into paddy lands on an entire catchment basis through the panchayats. This procedure will help a distinct community focus to be maintained in the programme.

In the first four years of the Third Plan, employment to the extent of 89 lakh man-days was created at a total cost of Rs 2.35 crore.

Apart from providing much needed seasonal employment, the programme had led to the creation of valuable community assets.

From the point of view of physical achievements, Maharashtra's performance has been quite impressive: some 2,326 kilometres of village market roads have either been built or repaired, 2,738 hectares benefited by *bandharas*, 17,338 hectares by field bunding, 13,760 hectares by soil conservation, 2,259 hectares by *nulla* bunding, 1,678 hectares by disilting and repair of tanks, 3,850 hectares by land reclamation, 268 hectares by irrigation wells, 118 hectares by afforestation, 4,453 hectares by anti-soil erosion measures up to the end of 1964-65. Besides, 2,330 hectares of *varkas* lands were converted into paddy lands and 26,137 compost pits were created.

Much of the good work done in Maharashtra is due to the keen interest evinced by the Zilla Parishad personnel as well as the constant field supervision of Mr Kulkarni, Under Secretary of the Rural Development Department, who has personally visited the work sites in more than 100 of the 130-odd rural works blocks. A 560-kilometre journey with him through the blocks enabled me to see and learn a great deal.

Uttar Pradesh Looks Ahead

BECAUSE of the special problems of the eastern districts, Uttar Pradesh has been allotted the largest number of blocks, namely 169 out of a total of 998 for the whole country.

Speed being the main consideration in the initial years, areas and schemes were hastily selected with the result that quite a few schemes relating to maintenance of flood protection bunds, which ought to have been more appropriately taken up under the Minor Irrigation Department's normal Plan programme, were pushed into the Rural Works Programme and the whole programme was organised departmentally with the Zilla Parishads not very much in the picture.

Among the other schemes, seen frequently in the course of a visit to several blocks in the Gonda district, were raising of marooned villages and construction of new or widening of existing market roads. Though more in the nature of a welfare scheme, raising of marooned villages has benefited a large number of villages from the onrush of flood

waters which, at times, assume furious proportions.

Two undesirable features of this scheme were brought to the notice of the State Government : first, for caste considerations, many of the villagers whose dwellings were being raised under this scheme were not participating in the actual operations; secondly, in the selection of the house-sites for raising those of the poorer sections were left out.

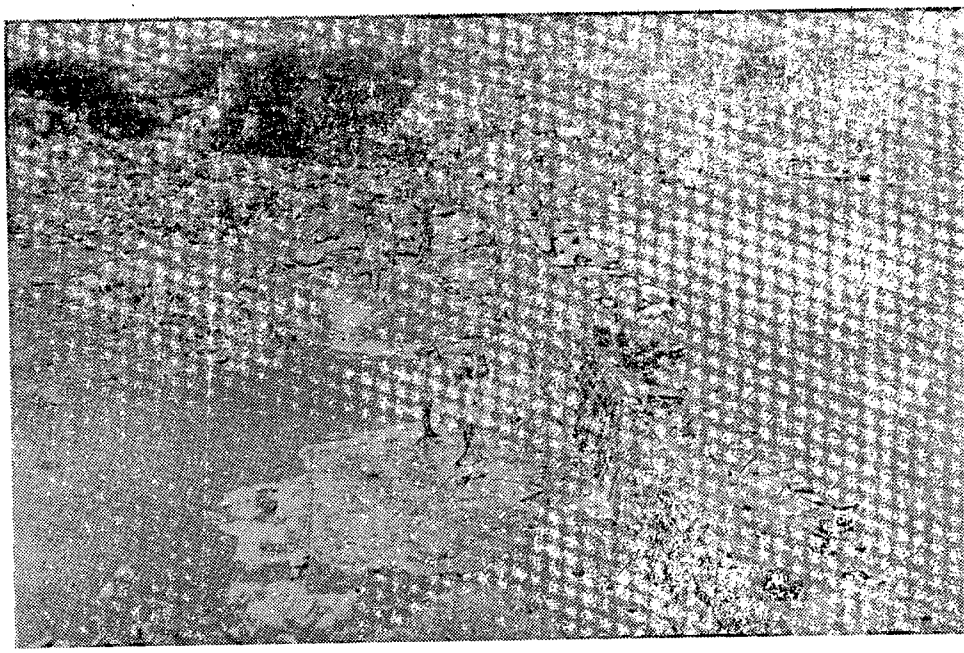
On a complaint lodged to this writer by an elderly woman whose house had been left out from the operations, the superintending engineer in charge of the programme at the State level ordered the concerned assistant engineer to ensure that her small hut was also raised and this type of discrimination in the selection of sites was avoided.

A variant of the Rural Works Programme, under which a part of the wages is paid in wheat donated by the U.S. Agency for International Development (U.S.A.I.D.), is in operation in 69 projects located in six districts of eastern U.P.

In the course of the tour of Gonda district several aspects of the wheat-assisted programme were studied and operational deficiencies brought to the notice of the concerned officials of the U.P. Government. The normal food habits of the workers, particularly their preference for inferior varieties of food-grains, seems to have been a major hurdle. The fact that the U.P. Government has recently sought the approval of the Government of India and the U.S.A.I.D. for extension of this experiment to several other districts is perhaps an indication that this hurdle has now been surmounted.

In the first four years of the Third Five-Year Plan, the Rural Works Programme provided employment to the tune of 98 lakh man-days at a cost of Rs 2.44 crore in Uttar Pradesh.

The Government has recently taken several steps to streamline the planning and field implementation of the programme. A high-level State Rural Manpower Committee has been set up for providing over-all guidance and supervision; the task of execution of the programme is being gradually transferred to the Zilla Parishads; and to assist the Zilla Parishads with the necessary technical support, a Rural Engineering Service is being set up. A few blocks, where the programme had not caught on because of wrong selection and other deficiencies, are being dropped.



Construction of bund at Shirala, Maharashtra, in the Rural Works Programme

Rajasthan's Experience

AMONG the schemes now being taken up in Rajasthan are community irrigation wells, construction and repair of tanks, and *rapats*, soil conservation on the lands of groups of individuals, development of pastures and construction of roads. For community irrigation wells the Government gives grant to the Panchayat Samitis up to 50 per cent of the cost, the remaining 50 per cent being obtained as public contribution. For *medh* bunding, the beneficiaries bear as much as 75 per cent of the cost. Technical assistance of the Soil Conservation Department is provided free of charge.

In the first four years of the Third Plan, employment to the tune of 13.62 lakh man-days were created under the programmes at a cost of Rs 40.62 crore.

Two examples may be cited to show how little some of the schemes cost the Government, in comparison with the benefits they give to communities. A tank excavation scheme in Dudu block in the Jaipur district has cost the Government only Rs 10,000. The scheme employed nearly 100 persons in the peak of the slack season and, given normal rainfall, is likely to bestow a threefold benefit: direct bed cultivation over an area of 80 hectares; flow irrigation facilities to 120 hectares; and further irrigation benefit from raising of water levels of wells in the entire adjoining area.

Similarly, a *medh* bunding work in Rallauta village in Kishengarh block in the Ajmer district over an area of 430 hectares belonging to 130 cultivators cost the Government only Rs 9,340. The scheme provided 17,000 man-days of employment and was likely to result, given normal rainfall, in a 25 per cent increase in the yield of jowar, besides facilitating a legume crop after each cereal crop.

However, on-the-spot conversation with workers engaged on the Rural Works Programme in the three States covered revealed some significant facts about the characteristics of the surplus labour which have to be kept in view in planning the programme in future. The so-called "superfluous" labour in the Indian villages is not always prepared to take up work at distant places for any long stretch of time. Also, the villagers generally operate with the family as the working unit and their leisure time is often fractional.

BUILDERS MUST BE REGISTERED

H. J. SHAH

A statutory Central Association of Builders is suggested for regulating and guiding the building trade. This, it is felt, will discourage adventurers from wasting public money and materials.

THE construction industry, covering the activities of civil engineering and building contractors, has assumed crucial importance with the planned development of the country. Contractors, who in the pre-independence period were largely unqualified technically, are being rapidly replaced by qualified engineers or well-organised firms of engineers and by public construction companies possessing administrative ability and experience as well as vast financial resources. These firms have successfully carried out complicated works pertaining to multi-purpose hydro-electric projects, roads, bridges, airports, harbours and buildings for industries.

In spite of the important role played by modern builders, no systematic attempt has been made to recognise their merits and abilities and place them in classes apart, with the result that today almost any person with a whim can submit a tender for engineering construction work. It is true that some Works Departments of the Central and State Governments and Local Self-Governments have laid down some qualifications and pre-requisites before awarding contracts for works of a certain physical magnitude or value, but there is no legal or statutory provision for the registration of builders. This situation is not advantageous to the country. There is need to formulate a scheme to control and organise the building trade on systematic lines and to ensure better standards of work. I have attempted to outline such a scheme here.

Statutory Body

The Works Ministry of the Union Government and the Public Works Departments of the State Governments will have to take initiative in the reorganisation of the trade. The Central Government should set up a committee to examine the problems of the building trade in the interest of the public and to recommend suitable provisions for incorporation in what may be called a statute for the formation of a chartered institution or association of builders. This institution should, like other professional institutions, control the work and professional conduct of builders. Its membership should be made compulsory for all individuals, firms or companies desiring to undertake building activities, and the statute should lay down the qualifications and pre-requisites for membership and the rules and regulations governing the trade.

The primary objective of this association will be to protect the interests of the public from incompetent or unscrupulous contractors. The association should check waste of public funds and strategic materials such as cement and steel. It should also keep a vigilant eye on the activities of member builders and issue directives and warnings as and when necessary. This will assure the public that the contractor employed by them has sufficient skill, experience and resources to carry out the work entrusted to him.

In the three Plans, large amounts of money were allocated for housing projects. The impetus thus given to the building trade has attracted to its ranks anybody who, having some money to invest, rushes into the field even though he might have no experience of the complexities of engineering construction and its many snares and pitfalls. He is led on by the will-o'-the-wisp for easy profits. These profits quickly fade away as construction proceeds, leaving the adventurer often ruined in the end and his client disappointed and disillusioned.

Legislation for registration and/or licensing of builders will ensure a certain degree of competence among builders and make them take pride in their profession thereby raising the prestige of the industry. It will also ensure a healthy growth of the industry and infuse in it a confidence that will enable it to extend its activities to the neighbouring countries, thus promoting regional solidarity and earning valuable foreign exchange.

Code of Registration

The problem of *initial registration* will offer many difficulties. Thousands of builders, many of whom are not technically qualified but are hereditary *mistries* and builders, will pose a big problem.

1. In order to recognise the just claims of persons already in the field, all such persons should be registered as initial members of the association.

2. In the case of partnership firms, all the partners technically qualified and one technically non-qualified partner should get automatic registration. The remaining partners may be registered only if they are found suitable according to the terms and conditions laid down, or if they are found qualified subsequently by a Central Board of Builders.

3. In the case of a company (Government-owned public or private) all technically qualified directors or executives and one chief director and/or executive should get automatic registration. The remaining officers and/or directors should not be registered unless they are declared duly qualified by the Central Board.

After the initial registration, applications for *new membership* may be accepted on the following lines:

1. In the case of individuals, registration may be made in their names.

(*Continued on Page 18*)

THROUGH RIGHT USE OF FERTILISER, POWER, NEW SEED VARIETIES, THROUGH NEW APPROACH TO COST SHARING AND SOIL MANAGEMENT, STATE CAN GROW MORE FOOD WITHOUT AFFECTING OUTPUT OF CASH CROPS THAT EARN EXCHANGE

KERALA NEEDS BOLD AGRICULTURAL POLICY

C.H. Hanumantha Rao
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THE acute food shortage in Kerala indicates neither the very low level of agricultural productivity nor the lack of dynamism among Kerala farmers. Curiously enough, the food shortage is the direct consequence of the considerable advances made in farming characterised by the extensive cultivation of commercial crops, which earn a large quantity of foreign exchanges for the country besides bringing cash incomes to Kerala farmers.

The available studies indicate that these cash crops are relatively more profitable than food crops in Kerala and that the experience and skills attained in the cultivation of such crops are a great asset for the country. It is, therefore, in the interests of Kerala and the country as a whole that the resources used *at present* are not diverted from cash to food crops. But the equilibrium can be maintained only if the country and more specifically the southern States discharge their obligation towards Kerala by ensuring sufficient and sustained supply of foodgrains.

It is impossible to put up with recurring uncertainty in regard to such a vital item as food. The advantages of specialisation are bound to be outweighed, after a point, by the need to eliminate uncertainty in regard to food. Already, there is a clear tendency to give preference to food crops. During 1952-62, whereas agricultural production as a whole increased at the rate of 2.4 per cent per annum, the output of food crops increased at the rate of 4.1 per cent per annum while that of non-foodgrains increased only at about 1.8 per cent per annum. In the light of this experience, therefore, it is difficult to support the view on the other extreme that Kerala should specialise in the production of commercial crops by diverting more and more resources from food crops and meet its own food requirements through imports from other States.

The Perspective

The problem of diversion concerns the *existing* resources and as such represents a static approach to the problem. In the context of growth one is confronted with the problem of *increasing* the stock of resources with which to produce output. The problem would be less serious if instead of diverting the *existing* resources from non-food to food crops, more and more of *newly created* resources are used for food crops. The aim should be to reduce the magnitude of uncertainty in regard to food supply and not absolute self-sufficiency.

The objective of applying more of new resources to food crops should be attained not by subsidising or pampering food crop production, nor by making the production of non-food crops costly and more difficult. Such a method would be economically inefficient. Growth of food crops should be encouraged by creating conditions where investment in this direction becomes more profitable. This can be achieved by rational investment and tenure policy. In this context the major problems of agricultural development facing Kerala are discussed below.

The Basic Measures

(a) *Soil Conservation*: Soil erosion is a serious problem in Kerala owing to its vulnerable topography and other factors. According to the National Council of Applied Economic Research, about one-third of cultivated area is affected by soil erosion. Soil conservation is an indispensable condition for raising the profitability of the application of fertilisers, improved seeds, etc.

The task of soil conservation is not easy of solution because (1) it is beyond the means of individual cultivators and requires considerable organisational efforts at the local level involving community action with Government's participation; (2) the costs are high; (3) it requires sustained work with long gestation period. The results are not immediately visible. But the problem can be neglected only at heavy cost because poor soils depress the profitability of all the complementary inputs. Also, since soil erosion is a continuous process, any delay in this respect adds to later costs. It is of the utmost importance that this vicious circle be broken by undertaking a bold programme of soil conservation before the costs become prohibitive.

(b) *Irrigation*: A high level of rainfall is not an unmixed blessing. Since artificial irrigation in Kerala is required generally for a second or

a third crop, any large-scale irrigation system becomes uneconomical. However, minor irrigation sources are quite important in Kerala. Besides, high rainfall lends a kind of stability to minor irrigation in regard to water supply in this State which is not possible in the States of low rainfall.

In order to encourage cultivators to take to artificial irrigation through minor works on their own, it is essential to make irrigation cheap. Supply of electric power and electric motors provides the cheapest and the most convenient means of irrigation for the cultivator. In regard to the generation of cheap power, Kerala is most fortunately placed. Here again, an imaginative and bold programme of supply of power for irrigation would go a long way in stimulating and sustaining agricultural growth.

More Fertilisers

(c) *Improved Techniques* : Although there has been some progress in the use of modern inputs such as fertilisers and improved seeds in Kerala; the performance is far from satisfactory in regard to food crops and there exists considerable scope for the adoption of improved techniques. Indeed, Kerala with its limited land supply, abundance of labour and high rainfall presents a case of the near exhaustion of traditional input factors. The case for adoption of improved techniques as the only possible method of increasing productivity in India is nowhere as urgent as in Kerala.

At the end of the Second Five Year Plan Kerala accounted for about 3.6 per cent of the irrigated area in the country as compared to 6 per cent in the neighbouring rice-growing State of Madras. But the share of Kerala in the consumption of fertilisers was proportionately much lower. It consumed a little less than 3 per cent of the ammonium sulphate consumed in the country and a little less than 2 per cent of the superphosphate. The share of Madras, on the other hand, was 12 per cent in the case of ammonium sulphate and around 15 per cent in the case of superphosphate (*See Third Five Year Plan*).

This low consumption may be attributed partly to the high price of fertilisers. The problem is common to the whole country and the reduction of fertiliser price, though very essential, is beyond Kerala's responsibility and the benefits in this respect will have to come from national endeavour. Partly this lower consumption may be attributed to the lower return on the relatively infertile and eroded soils. Experience in the United States as well as in Japan shows that fertiliser application becomes profitable when it is combined with the new and improved seed varieties that are fertiliser-consuming and pest-resistant.

Improved Seeds

In regard to the use of improved seeds for food crops the position in Kerala is not encouraging. Towards the end of the Second Plan the area under improved seeds (food crops) in Kerala constituted less than 1 per cent of that in the country as against 13 per cent in Madras. This may be explained in part by the fact that in Kerala greater attention is devoted to commercial crops. But there is no gainsaying the fact that the improvements in the food crop productivity in Kerala depend crucially on the application of improved inputs. So far as rice culture is concerned Kerala can become a major centre for research, experimentation and extension in the improved technology. The pressing food requirements in Kerala suggest not only the urgency of sizable investment in this respect but also give promise of a phenomenal response to such efforts. The experience in this respect can be useful for the rest of the country.

Pragmatic Tenure

(d) *Tenure Policy* : According to 1961 Census, as much as 35 per cent of cultivated area in Kerala was under pure tenancy, as compared to 4 per cent for all India. This may account for the insufficient application of fertilisers and improved seeds inasmuch as the costs are borne by the tenants and benefits reaped by landlords in an equal measure.

This problem can be solved if landlords are required to bear the costs on such improved inputs in the same proportion in which they claim rent from the gross output. There is no reason why landlords should not agree to share the costs because so long as rent bears a fixed proportion to gross output, they would benefit from the increments in output.

So far, the tenurial policy in India has been oriented to equity goals with its insistence on the security of tenure and fixation of fair rents etc. It is seldom realised that under conditions of excessive pressure on land, it is extremely difficult to implement such a policy. Not only that the equity goals are not achieved but, in the process, the growth objectives are also defeated. It is, therefore, of utmost importance to take a realistic view of the situation and pursue a growth-oriented tenure policy, the objective of which should be to promote input intensification by ensuring that landlords share at least 50 per cent of costs on improved inputs.

Facilities for Farmers

Tenants, for their part, should be provided the necessary credit facilities to meet their share of costs. The Japanese experience in this respect has a particular relevance to Kerala conditions. During the whole period of half a century right from the Meiji Restoration to the close of Second World War, when the technological breakthrough in agriculture was effected mainly through the extensive use of fertilisers, improved seeds etc., the area under tenancy continued to constitute nearly 50 per cent of cultivated area (see Takekazu Ogura Ed. *Agricultural Development in Modern Japan*). In India, no place is in greater need as well as better suited than Kerala for experimenting a pragmatic and growth-oriented tenure policy.

It is clear that none of the measures discussed above is likely to be an easy undertaking offering quick results. But easy solutions are not open to an area where productivity from traditional sources has almost reached saturation point. At the same time, the potentialities from improved techniques should be quite promising. What is required is a bold and imaginative policy backed by sustained efforts.

HIDDEN TRUTH

SOME time ago we were told that the per capita consumption of medicines was the lowest in India—something like Rs 3 a year compared to Rs 83 in the United States and Rs 43 in West Germany.

Here is a case of figures hiding the facts. We do not consume more medicines because we have no money to buy them, not because we are healthier than Americans or Germans.

Science Books

IT was a wonderful experience to go to the second exhibition of Indian scientific and technical publications.

Well-printed books, well-bound books, well-illustrated books, books with bright jackets in many colours and bold types—some, in contrast, affecting a great demureness—and books on a great range of subjects from dermatology to aircraft engineering, from canal-building to artificial insemination of poultry, textbooks, advanced research papers, popular science books, and any number of journals. Most impressive, all in all.

The first exhibition of this kind was organised by the Council of Scientific and Industrial Research in 1959. It had on show 4,801 publications described as "up to 1959". Between 1960 and 1965, C.S.I.R. has collected 5,260 publications and showed them at this second exhibition. There were 4,492 books and 768 periodicals (including 126 reports).

In the books section, English comes first with 2,572 entries, followed by Hindi 691, Marathi 212, Bengali 202, Tamil 191, Gujarati 160, Telugu 103, Malayalam 100, Kannada 68, Urdu 53, Punjabi 51, Oriya 34, Sanskrit 29, Assamese 22, and Sindhi 4. In the periodicals and reports section, the proportion between English and the other languages is more telling—700 of English against 68 of all the other languages together.

C.S.I.R. has also given a classification by subjects of the 4,492 books on show. Medical sciences top the list with 756, followed by engineering 647, agriculture 510, physics 431, mathematics 376 and so on. Some of the books are Indian editions of foreign publications. C.S.I.R. has thoughtfully brought out a bibliography of the publications on view.

Of course in a big exhibition minor errors may be overlooked. But books like *National Fitness Corps Syllabus*, *Management of Public Debt in India* and the *Structure of Commerce* should not find a place among scientific and technical publications unless the term science is stretched to include physical fitness, finance and economics. And why should annual reports swell the number of periodicals ?

The number of periodicals listed in various languages obviously is not correct. The number of scientific periodicals in Malayalam was listed as one while two were on display. To our knowledge at least five are being published. This must be so with other languages too.

Composed

ONLY a few authors deserve being heard; others should only be read. This is how we felt listening to the Sahitya Akademi prize-winners of the year talking about their work.

Two or three of the authors went on and on, and the allotted ten minutes lengthened into thirty. The audience would not probably have minded if they had at all been familiar with the work of these authors, but a person famous in one language is a nonentity in another. This is one of our problems of inter-regional communication. Most of the others who spoke, however, were able to take the audience with them by two simple devices, economy and interestingness.

Mr P.L. Deshpande (Marathi) was irrepressible. He spoke of the hazards of being in the business called humour in a country where everyone was growing more and more touchy. He referred to a speech he had delivered at a conference of publishers. "To call a writer to preside over a meeting of publishers is like asking a cow to preside over a meeting of butchers", he quipped. He had to choose a common foe and found him in compositors. The result was that the compositors of Poona organised a protest demonstration. "As a humorist I don't want to hit anyone below the belt," Mr Deshpande said, "but some people wear their belts too high."

Mr Vaikunthanath Patnaik of Orissa spoke with feeling of the days when he started writing poetry. Art, he said, was regarded then as an ignoble pursuit. Music and dance were not considered good even for harems, let alone homes. Poetry could be written because it could be indulged in without others' knowing. The only art then considered respectable, said Mr Patnaik, was the art of entering government and serving the British.

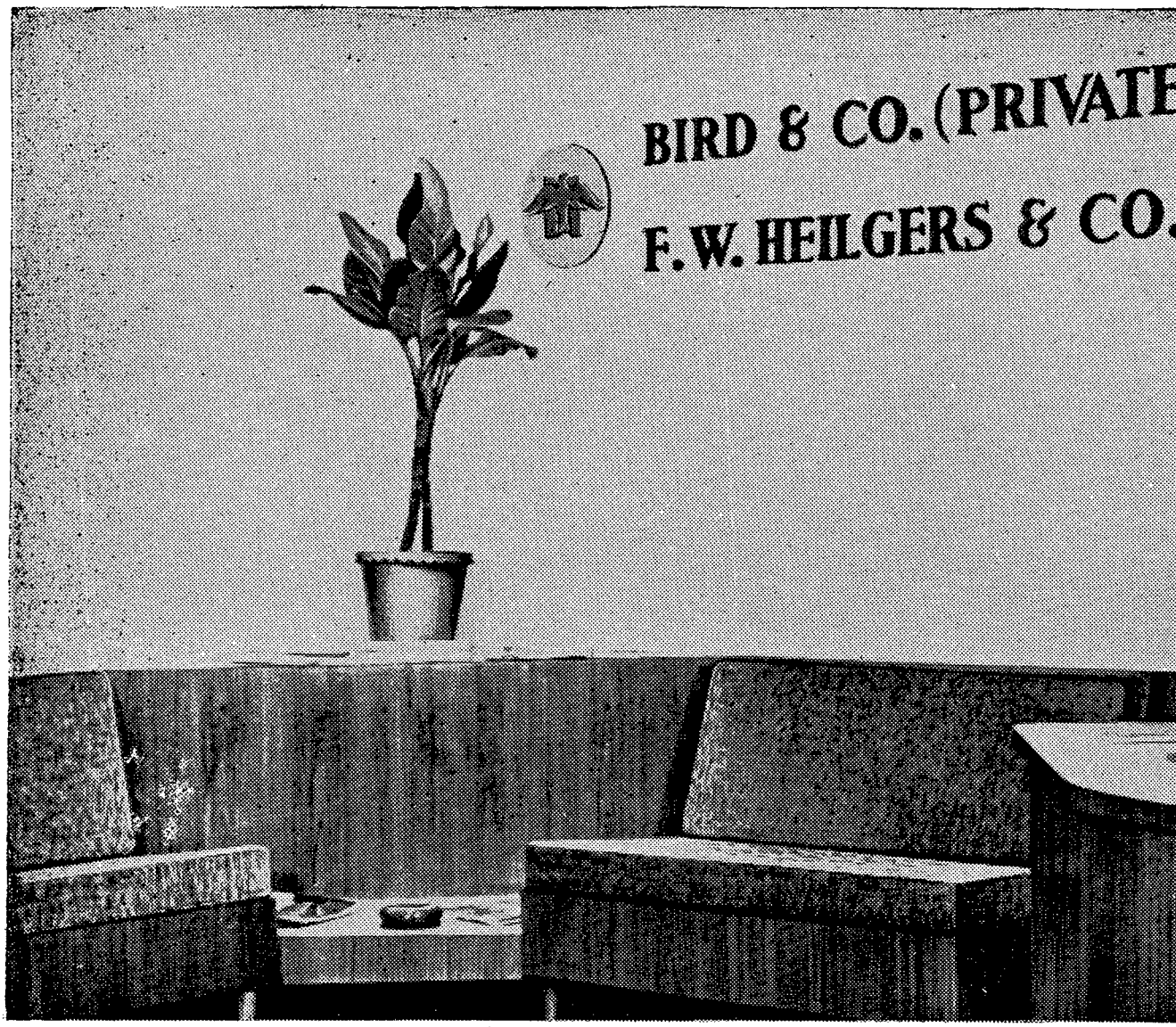
IGNORAMAN

Wants to Know

Is the accent in the word Budget on the last syllable?

Collector's Item

Overheard in a corridor of the Secretariat: "The high-ups keep the foreign exchange crisis boiling so that their wives won't insist on accompanying them during their tours abroad."



"Good morning. Bird-Heilgers..."

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NAGALAND FOLLOWS

Schools, Roads, Clinics Come up: Big Outlay on Development

M.V. DESAI

FOR those of us who try, either as a profession or as a pastime, to chronicle everyday events, it is not always easy to detect the significant happenings. The changing sights and sounds of the contemporary scene are so near us that one does not know how best to distinguish between the noises and the signals. To such a view, distance lends perhaps enchantment but certainly a perspective.

A second visit to Nagaland, separated from the first by the remove of a full year, provided a rich harvest of new impressions. These were gathered rather fleetingly—in the course of a one-week tour by a Planning Commission team led by Mr P.P.I. Vaidyanathan, Adviser. But the team went into all the three districts and jeeped its way into the interior along 450 miles of road. And the impressions were sharp enough for one to read them as one ran over the green and pleasant Nagaland.

There are the cheerful children, always smiling. They probably know not how to cry. The elders—tribal leaders, interpreters, *gaon-burrahs*—greet you with a grin. They seem to size you up with a seeing eye as you shake their hand which is strong and rough and serried from work in field and forest. There is a great amount of construction work—schools, roads, dispensaries coming up anew. There is the new face of India one sees among members of the sixteen tribes who inhabit the State and hundreds of others who have found a home from home in Nagaland—nurses and compounders from Kerala, teachers and technicians from Assam and West Bengal and engineers from almost everywhere.

These impressions about extensive developmental activities ring truer in the facts one gathers about various sectors of development. Whether under State initiative or through private enterprise—but largely under State auspices—there are more and more schools being opened each year. The figures speak for themselves:

	1960-61		*1965-66*	
	Institutions	*Students*	*Institutions*	*Students*
Lower Primary Schools	458	38777	800	57486
Middle Schools	51	6573	126	10716
High Schools	10	2117	30	3960
Colleges	1	75	2	161
Teachers' Training Institutions	1		2	

This means almost every village has a primary school today. What is even more heartening is the eagerness among parents and pupils to learn and lead a fuller life. The table below gives an idea of students attending school in respect of various age-groups in Nagaland as compared to all-India percentages:

	Nagaland		*All-India*	
Age group	*1961*	*1966*	*1961*	*1966*
6-11	71.50	71.50	90.94	78.5
11-14	26.10	39.08	22.4	32.4
14-17	9.16	15.77	11.2	17.6

While the teacher-pupil ratio is in many institutions pretty good, the real problem is the preponderance of the untrained teachers and the lack of emphasis on and facilities for learning sciences, crafts and vocations. The establishment of junior agricultural schools, availability of diversified courses and workshop and laboratory training, the organisation of short-term training courses for teachers, an improvement in the supply of trained teachers—these are the tasks engaging the attention of the education department. Their solution will be part of the long-term education plan for the State.

Health Services

Similarly there has come up a good basic organisation for health services. In the past five years, practically the whole of the four lakh population has been covered by the malaria eradication programme. There now is effective control of malaria in almost each village, 812 of which have already been reached. There are well equipped hospitals in districts and blocks. In its list of Plan achievements, Nagaland has notched up a significant one in having one bed for every 500 persons: this compares exceedingly well with the national average of one hospital bed for every 2,000 persons. Provided there are supporting measures taken on the preventive side and the existing facilities fully used by improving communications and making doctors and dispensaries more mobile, we are almost near saturation point in this State in health services. Local shortages there no doubt are of trained personnel, particularly in the para-medical field. But this is not a serious or long-term problem. The administration is keenly aware that manning and management contribute just as much to efficiency in hospitals and road construction as surgical instruments and steam rollers.

Farming Pattern

With three-fourths of the State's total area of 6,365 square miles under hill and forest, the land for cultivation is restricted. The hills can be steep, and the elevation ranges from 2,000 to 8,000 feet. Of the agricultural lands, only 35,000 acres are terraced or otherwise under permanent cultivation : the rest—

NEW COURSE

16,00,000 acres—is under shifting cultivation. Under *jhuming*, the forest is cleared in August and September and vegetation burnt. The tree cover is also lost. But from the ashes the soil gets some potash. This and the organic matter add temporarily to fertility, yielding a crop of about 25 maunds of rice in the first year. In the second and third years, however, the output declines, the total for the three years being some 40 maunds. After this, the field reverts to forest, another *jhuming* cycle beginning again after some eight years. Thanks to *jhuming*, the area under actual cultivation any single year is about 235,000 acres. This means that the farmer gets an income, for 40 maunds of foodgrains, of Rs 1,000 at the most over ten years. Nothing could be more uneconomical and wasteful.

In a mountainous area like Nagaland, with heavy rainfall and deep soil, *jhuming* not only removes soil but also depletes fertility. Erosion becomes a serious problem, occasionally threatening what little terraced cultivation there is. Working the forest or terraced cultivation which produces some 50 maunds of grain per acre is any day more profitable. If the cultivator's immediate need for food is satisfied, he can be trained both to try out terraced cultivation and to wait and exploit the resource potential of forestry. Expert farmers are now being encouraged to go and settle among others wedded to *jhuming*, and bulldozers and tractors are employed for reclamation. Even at the cost of Rs 5,000 to the acre, terracing would pay its way.

Scope for Industries

The climate of Nagaland is such that practically all the known and important species of timber and industrial wood can be grown. Also, if one hopes to maintain a double or triple crop agriculture, the essential supply of perennial water can come only if mountain caps are covered with vegetation. One has only to see the splendid oaks of Tuensang district to realise how well suited north-east India is to become a major source of raw materials for wood-based industries.

Horticulture is another activity which holds promise and profit. Near Dimapur, the main gateway into Nagaland, there are good prospects for an industrial estate. Also, nearly 10,000 acres of reasonably flat waste land can be cleared to grow enough cane for a sugar factory. A beginning has been made on a thousand acres, the cane being supplied to the sugar mill at Barua Bamungaon, 70 miles away.

In addition to the activities at two small demonstration stations, agriculture can profit a great deal from greater research activity. This will have to be supplemented by

findings from high-elevation substations. Any agricultural college which builds upon such felt needs in training and research will be able to serve the hills zone in the eastern region. These needs are : better knowledge about soil science, hardy grains, early ripening of crops, animal health and artificial insemination, and insecticides and fertilisers.

More Roads

A lot depends on the spread of communications. The engineers who know Nagaland as well as the palm of their hand speak of the days when they first began road-building in Nagaland not so many years ago. They had just three 3-ton road-rollers, good for municipal service, and some seventy miles of good road, the rest being all fair-weather *kutcha* roads and mule tracks. The progress has been like this (in miles):

	1960	*1965*
Metalled Road	9	59
Gravelled and Jeepable Road	939	1356

In the Third Plan period, another 362 miles of road will be widened and improved and no fewer than 15 bridges built. The arrears in the physical fabric of communications are fast being cleared.

The performance in this sector is but one indication of the growing capacity of the administration to implement development activities with greater speed and popular participation. The year-wise Plan expenditure during the Third Plan has been :

	Approved (Rs lakh)	*Actual (Rs lakh)*
1961-62	122.80	93.91
1962-63	231.57	101.75
1963-64	245.00	130.75
1964-65	404.32	267.46
1965-66	531.43	502.08*

*Anticipated

The outlay for the Annual Plan for 1966-67 is Rs 5.11 crore. The expenditure already committed on medical, engineering, agricultural, teaching and other development staff is estimated for the Third Plan period at Rs 140 lakh. This would mean that the next year's Plan for the State, of some Rs 6.50 crore in all, will see a stepping up in developmental work by over 25 per cent. This should enable Nagaland to make up for the shortfalls of the earlier years of the Third Plan. The scope and scale of developmental activity provide a break with the past, an incentive to set on a new course. Money incomes are showing a rise everywhere and how very wholesome it would be to set up a few good book shops, consumers' stores and social amenities like sports !

BUILDERS *from Page 10*

2. In the case of partnership firms, at least one partner should be qualified to be registered.

3. A company should be entitled to operate as a builder only if a senior executive of the status of director or manager is qualified.

The following *minimum qualifications* should be prescribed for registration:

1. A recognised university degree or diploma with at least two years' experience in the construction line.

2. An appropriate certificate for having passed a building and contractor constructional course from a recognised educational institution or the Technical Education Department, and at least four years' experience.

3. Ten years' experience with a qualification certificate obtained on passing an examination to be held by the Central Board.

4. Any other experience and/or qualification which may be equivalent to the above and acceptable to the Board.

The *Central Board* should consist of persons of standing who can judge the quality and ability of a builder. It should also include members who have no vested interests either as builders or as owners.

Initially the Board may be constituted of the following 11 members:

President of the Builders' Association of India	1
A nominee of the Committee	1
Chairman of the centres of Builders' Association	2
Nominees of the Central and State Governments	3
Nominees of the faculties of Architecture, Engineering and Building Construction	2
Elected representatives of registered builders	2

The Central Board of Builders, with subsidiary bodies in the States, should control the entire building trade. The legislation should stipulate that no builder other than one registered as a duly qualified member of the builders institution can be employed by any owner, public or private.

New Agricultural Strategy *from Page 7*

does not even refer to our paper in the text of his article. He does not have a single word of comment on our calculations based on the experimental data on new varieties of wheat. He has confined his discussion only to the performance of Taichung Native 1 (T.N. 1), a new variety of rice. Unfortunately his data are subject to the very same criticisms that we had made in our earlier article. These data are extremely inadequate for the following reasons:

(i) They relate only to one or at the most two crop seasons.

(ii) A substantial portion of the data are presented in an unusable form in a table entitled "Performance in Different States". This table omits a crucial piece of information namely *the dosages of fertilisers used* in each experiment. Besides, it is not clear whether these experiments were conducted under controlled conditions. Out of the 80 experiments reported, ten were failures. The reported yields varied widely. Needless to say, one cannot estimate a response function from this body of data.

(iii) Dr Chalam has, however, drawn four response curves, one for T.N. 1, and one each for three other varieties. *Three of these curves, including the one for T.N. 1, are based on data relating to one crop season (Kharif 1965) at only one experimental station (Agricultural College, Hyderabad).* The fourth is based again on experiments in one station though average performance over three years is used. His profitability calculations are based on single-season, single-station data on T.N. 1. We can hardly overemphasise the danger of basing the new strategy, in particular the recommendation on fertiliser dosages, on such inadequate evidence.

(iv) We cannot attach any serious importance to the increasing marginal response to dosages of nitrogen beyond 80 lb/acre observed in the case of T.N. 1. (In fact right up to 80 lb/acre there is evidence of diminishing marginal returns). This is contrary to all past evidence on response functions. It is probably due to the fact that the curve is based on only one observation per level of nitrogen used and may be explained as a purely random occurrence. It may even be that proper controls were not observed though we discount this possibility since the data were collected by an agricultural college. This apparent increasing return is the source of Dr Chalam's high profitability ratio for high doses of nitrogen.

(v) If the increasing returns are only apparent and not real, even Dr Chalam's own response functions would seem to indicate that the variety I.J. 2410 dominates T.N.1 in the sense that it gives more output per unit of nitrogen at all levels of nitrogen. However this question can be settled only on the basis of more and better data.

(vi) Even if one ignores our criticisms and takes the profitability calculation of Dr Chalam seriously, one may still find that the extra 29 paise return per rupee of costs obtained by using 100 lb of Nitrogen per acre rather than 40 lb is hardly enough compensation for the extra risks involved. Besides, Dr Chalam does not seem to be concerned with fertiliser dosages from the point of view of private profit under various tenurial arrangements which are very much a fact of life in Indian agriculture.

In conclusion, we feel that Dr Chalam has not answered any of our criticisms of the official strategy.

READERS SAY :

As a regular reader of the "Yojana", I make the following suggestions which should be incorporated in your next issues:

(a) There should be a regular item in the journal which should give the reader information about the targets fixed for various economic problems of the country with their respective achievements.

(b) Secondly, there should be one article in every issue on the problems of our industries, whether in the public or the private sector. Some of the problems, are: personnel, capital, and raw materials.

New Delhi B. MOHAN

A good number of articles are now-a-days written on various subjects like food, agriculture, industry, trade and planning. Almost all of them are based on statistical data published by various departments of the Government, Central or State, and by other agencies. It is, however, seen that in many cases the source of the data is not given. *Yojana* can help a keen reader by giving in each of its issue a list of publications which contain official statistical data, for example various reports of the National Sample Survey, the Central Statistical Organisation, and the Census Commissioner's office. It will be much appreciated if the publications are listed subject-wise.

I would, as an instance, like to know the source of the data quoted by Professor M.L. Dantwala in his article "Food Policy" (Times of India, February 10, 1966).

Kalyan N. Y. GORE

Books

Demand for Machine Tools

Demand for Machine Tools. The National Council of Applied Economic Research. xii+418 pages. Rs 40.

S. P. Bansal

THE National Council of Applied Economic Research undertook this study of the demand for machine tools in the Fourth Plan at the instance of the Indian Investment Centre. The book attempts a complete census of the machine tools installed in the country in the various industrial activities, and makes an assessment of the future demand for machine tools not only by the large and medium units in the organised sector but also by small industrial units which do not come either under the Industries (Development and Regulations) Act or the Factories Act. The study has given a complete break-up both of the inventory and of the future demand for machine tools by type, category and size.

The need for such a study had long been felt and even the Working Group on Machine Tools for the Fourth Plan set up by the Planning Commission had strongly recommended that a survey of machine tools in the country be carried out as early as possible with the object of making projections of a somewhat detailed and sophisticated kind.

The inventory build-up reveals that in 1963 the total number of machine tools in the country was over 4.08 lakh. The inventory covers all sectors where machine tools are employed, including defence establishments and the large number of small manufacturing and servicing establishments. The additional demand of machine tools for the period 1964-70 has been estimated at 5.26 lakh. The value of machine tools required during this period also has been estimated and is placed at Rs 610 crore. The value has been calculated not by applying one average price for the entire lot of machine tools but by applying as many as 60 different average prices for the different categories and types.

Machine tools are a most vital engineering industry and the development of other industries depends to a considerable extent on the growth of this industry. No industrial economy can survive without machine tools which manufacture and maintain its plant and machinery. In fact it is the mother of all industries as virtually every industry, irrespective of the fact whether it is a producer goods or consumer goods industry, requires directly or indirectly the use of machine tools.

It is encouraging to note that the industry has made rapid strides in our country during the last decade. With the total indigenous production of graded machine tools in 1956 being only 2,943 valued at Rs 1.20 crore, the indigenous production rose to 13,370 machine tools valued at Rs 18.90 crore in 1964. Indigenous production, however, falls short of the demand and imports have also been increasing simultaneously. The value of the machine tools imported was Rs 33.63 crore in 1964 as against Rs 17.89 crore in 1961. The capacity and production targets tentatively envisaged for the machine tools industry for 1970-71 are Rs 110 crore and Rs. 100 crore, a level which is more than three times the capacity likely to be installed by the end of the Third Plan. This shows the importance being attached to the development of the machine tool industry in the Fourth Plan.

The study undertaken by the Council is indeed valuable, keeping in view the development programme of the industry in the Fourth Plan. As mentioned earlier, it is for the first time that a complete inventory of the machine tools by type, category and size has been made, and an analysis of the additional demand attempted. A feature of the study is that an assessment has also been made of the contribution made in the past and expected to be made in the future by the large number of small units manufacturing machine tools, most of which produce mainly ungraded machines, as well as of the consumption by such units engaged in the production of metal products, machinery etc. Apart from knowing the aggregate demand in an item like machine tools, a knowledge of the types and categories is vital for planning purposes. By adopting the micro-approach, it has been possible to spell out the future demand not only by type and category but even by size.

There are considerable differences in the demand estimates of machine tools made by the Working Group set up by the Planning Commission and the figures revealed by the present study, but these are mainly due to the large coverage in the organised sector and also the inclusion of small machine tool manufacturing units in the present study. The differences are also partly due to the different methodologies employed in the two studies. The demand estimates made by the Council are based on the targets envisaged for user industries for the Fourth Plan by the Perspective Planning Division of the Planning Commission. These targets have no doubt undergone considerable changes. Nevertheless it does not undermine the importance of the study and the findings revealed by this study are of immense value to planners, industrial entrepreneurs, foreign investors as well as other industries vitally concerned with the development of this industry. The study should also help in plugging the weak spots in the production and utilisation of machine tools in the country.

Books Received

Poultry Feeding in Tropical and Subtropical Countries. 96 pages. $ 1.50 or 7s. 6d. *Monthly Bulletin of Agricultural Economics and Statistics.* Vol. 14, No. 12. December 1965. 54 pages. Both published by Food & Agricultural Organisation of the United Nations.

MUST WE QUIT WORK TO HONOUR OUR GREAT ?

Scrapping of 'Mourning Holiday' Urged

RAM K. VEPA

A NOTICEABLE feature of white collar jobs in India is the large number of holidays (and the small number of hours of work per day). While factories normally work eight hours a day, the daily workload in most offices hardly exceeds six.

Even more significant is the unusually large number of holidays enjoyed by office-goers in India—the word "enjoyed" being used in a limited sense, since this usually consists of a heavier lunch than usual and an afternoon nap. While most advanced countries have not more than half a dozen holidays through the year (besides the normal week-end) there are as many as thirty holidays in India. Besides the weekly day or days of rest, there are religious festivals which are observed as general holidays. Although India is a secular state, it is not considered incongruous that holidays are officially declared to mark purely religious occasions. And with the large number of religions that flourish in India—Hindu, Muslim, Christian, Buddhist, Jain and Parsi—the number of such observances can be considerable.

In addition to such holidays (which vary from State to State and are 17 to 20 in number) special holidays are declared for festivals not originally announced. There are three or four of these every year. Then there are holidays for sport events such as a test match or an important football game.

But most incomprehensible of all is the holiday declared to mourn the death of important personages—a custom that seems to be taking firm hold in the country during seventeen years of freedom. With many people of an advanced age level in the higher reaches of Government there are four to six "holidays" of this type every year. In addition, optional holidays are provided for special religious festivals which can be "enjoyed" on request by all persons, besides of course the Casual Leave one is entitled to.

If one adds up the above list of holidays, one arrives at a formidable figure:

Sundays	...	52
Alternate Saturdays	...	26
Declared holidays	...	20
Special holidays	...	4
Mourning holidays	...	6
Optional holidays	...	3
Casual leave	...	12
		123

This means that one third of the year is spent on holidays (besides 30 days' privilege leave one can use) in a country which is in a critical stage of nation-building when work is all-important.

This was brought home most forcefully during the week the late Prime Minister passed away at Tashkent; as soon as news of his tragic death was received, all establishments (including most factories) closed for two full days (January 11 and 12). The next two days marked important festivals in the South and had already been declared as general holidays. The next day, January 15, was an optional holiday and January 16 was a Sunday. This seems to me a poor way of honouring the memory of one who had laboured so hard for his country and gave his life for his people.

It seems wrong, even sacrilegeous, to honour the memory of such men who had toiled so long and with such dedication, by leaving off from legitimate work. Many people use it merely as an occasion to play cards, go to a movie or take the family for an outing.

The more dignified way of honouring the memory of such great leaders is to hold formal condolence meetings in important offices and establishments so that the entire staff can gather and observe respectful silence after a brief speech by the head of the office. It would be even more appropriate if some extra work, say an hour, were put in by the staff on such a day of mourning both to make up for the time lost and as a measure of respect to the departed person.

But to take off from normal work causes loss to the country. The staff of the Atomic Energy Commission at Trombay rightly refused a holiday after the tragic news of the demise of their respected head, Dr Bhabha, was received.

Anyone can notice that most of the religious holidays are also not observed by the majority of those who avail themselves of them. To them it is just another holiday from work. The optional holiday pattern makes it difficult for offices to function since a segment of the staff is away on leave; and such holidays can be enjoyed by anyone irrespective of whether he observes them or not.

There seems need for a thorough review of the holiday pattern and to rationalise it so as to reduce the holidays and make them more meaningful. It is suggested as a basic premise that holidays are meant for enjoyment (and as a relief from the daily monotony), never for religious

observances (which is purely a personal affair of the individual) or for mourning (since it is impracticable to do so). Those who are keen on such observances can certainly avail themselves of the casual leave available to them. Indeed, a secular state such as India ought not to cater for all communities by declaring holidays whose significance is for only one community and whose observance is limited to a small proportion of even that community.

On this basis, it is suggested that only the following days be declared as general holidays: Republic Day (January 26); the Buddha's birthday (in May), Independence Day (August 15); Gandhi's birthday (October 2) and Nehru's birthday (November 14). Two national days and birthdays of the three greatest personages India has produced in her history would be the most appropriate. There would be, in addition, the weekly off on Sunday and (if the daily work-load is proportionately increased) on alternate Saturdays as well. Further, every person would have 12 days of casual leave to use for whatever purpose he wishes—for sudden sickness, important personal work or for religious observance.

Something like this is the pattern followed in most advanced countries where holidays are few in number but are enjoyed equally by all the workers in the office or the factory and even by the housewife. In the present context of National Emergency brave exhortations are often made for more work to strengthen the country. These sound unreal when most offices are frequently closed causing inconvenience to all those who have to deal with them.

HAMARA HINDUSTAN

A NO-GOOD FEELING

I am not grateful to Miss Brigitte Bardot. She has reopened a wound which lay buried in my conscience.

The newspapers said last month she had become president of a society for the protection of mongrel dogs. The report didn't say whether it was an international society or an organisation restricted to France. But its aims are to protect the interests of mongrel dogs and to rid mongrel owners of their inferiority complex.

I don't own a dog—mongrel or pure-bred, *deshi* or *vilayati*. But a long time ago, when I was still at college, a little brother of mine one day brought home a brown pup. In the town we lived there were two simple tests to tell 'quality' puppies from 'country' ones. The ears of the good ones pointed downwards, and they didn't squeal when picked up by the ear.

The newcomer satisfied both conditions. Just then I had read Axel Munthe's book and his sentence "The more I see of men the more I like dogs" had tickled my undergraduate fancy. I sided with my brother in the family council. It was decided to keep the dog—even after it was discovered that it was a she.

My father, a Sanskritist, busied himself with finding a name for her. She was called Sarama, a name straight from the Vedas.

Sarama grew up. It was soon apparent that she was no pedigree creature but a mongrel plain and simple. My brother lost all interest in her. I had to take care of her—feed her, walk her, soap her. I loathed Sarama too, despite all my enthusiasm for Axel Munthe. I loathed her because two class-fellows of mine, who lived in the same street and who respectively owned a cocker-spaniel and an Alsatian, pitied me. I loathed Sarama because she made many alliances and it was a problem to find takers for her harvest. We were believers in non-violence.

It was the unexpected transfer of my father to another town that solved our problem. We left Sarama behind hoping the neighbours would feed her. She had revolted against the chain well before that. When, revisiting the neighbourhood a couple of years later, I learnt that Sarama had been run over, I didn't feel even a twinge of conscience.

But what Brigitte Bardot has done now makes me feel very inferior.

H.Y.S.

THE GREAT CONSUMER

He is a great consumer, perhaps the greatest. During 1964-65 he consumed, among several other things, the following:

Ghee	**1,22,973 kgs.**
Almond	**3,918 kgs.**
Cardamom	**1,816 kgs.**
Saffron	**112 kgs.**
Refined camphor	**79 kgs.**
Musk	**55 tolas**

After all there is no wonder in it. He is the Lord. He has property worth over Rs 5 crore and an annual income of about Rs 2 crore. He works hard daily, at least 18 hours, and interviews thousands of people. He is worshipped for his immense kindness.

What is more, he purchases almost all his requirements, from his Consumer Co-operative Stores. His purchases for the year 1964-65 from the Co-operative Stores amounted to more than Rs 22 lakh, for which he might even get a purchase bonus of about Rs 40,000.

He is none other than the Lord Venkateswara of Tirupati.

V. RANGA RAO

(An article by Mr Ranga Rao on the Tirupati Town Co-operative will appear in the next issue of *Yojana*.)

TRANSPORT and DEVELOPMENT

The Committee on Transport Policy and Co-ordination in its final report says that the various modes of transport have to be developed to the right size and shape as complementary services consistent with the economic growth under the Plans.

THE Committee for Transport Policy and Co-ordination in its final report has said that the impact of industrial and economic development under the Five-Year Plans has been the most important influence on the developments in transport and on the composition and volume of demands for transport. The report was laid on the table of both Houses of Parliament on February 17 by Mr Asoka Mehta, Minister of Planning.

The Committee was first set up in July 1959 with Mr K.C. Neogy as chairman. It submitted a preliminary report in 1961. In February 1964 Mr Neogy resigned and the Committee was reconstituted under the chairmanship of Mr Tarlok Singh, Member of the Planning Commission in charge of Transport.

Besides Mr Tarlok Singh, members of the Committee who signed the unanimous report were Mr R.L. Gupta, Mr S. Ranganathan, Mr Kripal Singh, Mr S. Bhoothalingam, Dr Nagendra Singh, Mr I.G. Patel and Mr K.L. Luthra (Secretary).

The 340-page final report deals with trends in the development of transport, railways, road development and policy, road transport, taxation of commercial motor transport, coastal shipping, ports, inland water transport and machinery for co-ordinating transport programmes and policies.

A brief summary of the major recommendations of the committee is given in the following paragraphs:

A national transport policy must seek to build a transport structure of the right size and pattern consistent with the scheme of economic development under the Plans and capable of meeting the demands of the future. The report states that in seeking transport co-ordination, it will be necessary not only to establish appropriate criteria for the distribution of traffic between different modes of transport, but also to consider in the given conditions of India the economic policies and the organisation and structure through which these criteria could be given practical effect in the day-to-day working of the transport system.

If the system is viewed as an integrated network, the objective of co-ordination, according to the committee, may be stated to be to develop various modes of transport as complementary services in such proportions and combinations as will meet the total needs of the community at each given stage at minimum cost to the economy.

Statistics and Costs

It is important that every effort be made to get progressively as close to the objective of co-ordination as may be possible. To this end the necessary economic and statistical information for different modes of transport must be developed. The facts concerning the costs of transport and changes in the demand for various services and in the composition of traffic have to be kept under constant review.

The report states that in a country like India, where major developments in the transport system are expected to take place as part of the plans for the growth of the economy as a whole, it should be possible to take care of the problem of co-ordinating different transport services largely through investment policies under the Plans.

For any period, both for the economy as a whole and for individual regions, the essential ingredients in the transport development plan are the scheme of allocation of traffic and the investments. But by themselves they are not likely to be sufficient to implement the plan.

Three types of supporting measures have to be incorporated into the development plan before an effective scheme of co-ordination between rail and road transport or for that matter any alternative mode of transport can be formulated. These are (a) fiscal measures and pricing policies, (b) regulation and (c) integration in organisation and operations.

Effective Co-ordination

The principal tasks for co-ordination are :

(a) to study from time to time the relatives costs of providing different transport services and Government's fiscal and pricing policies and related fare and freight structures, having regard to the allocation of traffic under the approved development plan;

(b) to propose measures for correcting imbalances between availability of transport and the requirements of the economy in respect of different modes of transport both in the aggregate and in different parts of the country; and

(c) to suggest specific measures for regulating transport for implementing principles and policies approved by Government.

For any co-ordination measure to function effectively, the first condition is the building up of an organisation capable of independent studies and economic appraisals, providing data on relative costs and following up decisions with the implementation authorities. The nucleus of such an organisation can be the Joint Technical Group for transport planning in the Plan-

ning Commission. This unit should be adequately strengthened and equipped to undertake studies and collect data required for co-ordinating development programmes and rating policies of different modes of transport.

The existing Planning Committee on Transport which guides the work of the Joint Technical Group should be reconstituted and should function as Transport Planning and Co-ordination Committee. The Joint Technical Group should serve as the Technical Secretariat of the Transport Planning and Co-ordination Committee.

To help the consideration of important policy questions and to provide guidance from time to time to the Transport Planning and Co-ordination Committee and to the Ministries, the Prime Minister may constitute a committee of Ministers consisting of the Ministers of Railways, Transport and Civil Aviation, Industry, Planning, the Minister of State in the Department of Co-ordination, Ministry of Finance, and the Member of the Planning Commission in charge of Transport. The Prime Minister may appoint a member of the committee to serve as chairman.

To secure an adequate measure of co-ordinated action necessary machinery should exist and be in a position to funcion continuously with the support of the Centre and the States. These considerations have led the committee to recommend the setting up of a Council for Transport Co-ordination. This body should be composed of members of the committee of Ministers on transport at the Centre and State Ministers in charge of transport and roads.

Research and Training

The Committee has recommended that a centre for transport research and training should be developed to undertake research into the basic problems of long-term transport development, including studies of comparative costs, and to assist Ministries and States in undertaking special investigations and surveys. Such a centre should be set up as a non-governmental institution fully supported by the Planning Commission and the Central Ministries.

The Committee has expressed the view that there is national advantage in continuing the obligations of the railways as a public carrier and in enabling the Central Government to give such directions to the railways for according preference to the transport of such goods or class of goods as might be specified.

As regards uneconomic branch lines, the report has suggested that it is essential to review from time to time the extent to which each branch line has been subserving the needs of the area.

In the construction of new railway lines the railways should provide for only those lines which are expected to yield over a period of time normal return on their construction cost.

The committee has pointed out that the present practices for regulating road transport suggest that in several respects policies and, even more, the manner of their implementation differed greatly from State to State. It is therefore essential to simplify and introduce greater uniformity in the existing approach to procedures for regulating road transport and adjust them to the growing transport requirements of a developing economy.

Goods by Road

In the regulation of goods transport, the concept of 'region' as defined in the Motor Vehicles Act and as operated in practice in many States is not suited to present needs. Regions should be determined not only on considerations of administrative convenience as at present, but even more on economic considerations which take into account the natural flows of traffic.

In the States, the focus in road transport regulation should shift from the region and the Regional Transport Authority to the State and its economic needs, and the State Transport Authority which should assist in formulating and implementing the State's economic development plan.

The inter-State reciprocal agreements should be replaced by a system of inter-State permits. They should be issued under the authority of the Inter-State Transport Commission which should be called the Inter-State Road Transport Commission. After determining the quantum of road transport to be provided over a given period on any long-distance or inter-State route, the permits could be issued by the State Transport Authorities on behalf of the Inter-State Transport Commission.

As a general rule, it was visualised that permits for intra-State operations would be valid for the State as a whole. However, there are a few large regions in the country which are markedly underdeveloped in terms of transport facilities. For them it will be desirable to draw up integrated regional transport plans within the framework of the transport plan of the State as a whole.

Uniform Motor Taxes

The levels of taxation will be more uniform if taxation of motor vehicles throughout the country is under Union regulation. It will also assist the development of road transport. At least taxation now under the exclusive jurisdiction of State Legislatures under Entries 56 and 57 of the State List should be brought within the Concurrent jurisdiction of the States and the Centre under the Seventh Schedule of the Constitution. Parliamentary authority should be used to determine taxation regarding inter-State movement and the proceeds should be assigned to the States under Article 269 of the Constitution.

For India with its geographical position and its long coast-line, coastal shipping is basically important. The future expansion of shipping has to be planned with reference to a few select commodities which constitute important components of coastal cargo, namely coal, salt and cement.

The committee has recommended that the Central Government should insist on Port Trusts, specially in the larger ports, finding all the internal resources they can for development. They should also be encouraged to seek loans directly from the market and should draw at least part of their capital from the market.

The committee points out that problems of development of inland water transport have to be considered in different regions separately according to the nature of the waterways and traffic conditions of each region. To use available communication facilities in the interest of overall economic development, it is important that the waterways potential of different regions should be put to productive use.

FORUM EVENTS

Reporting the Activities of College Planning Forums

Report of a Seminar

STATE RESOURCES

A SEMINAR on Mobilisation of State Resources was held at the Lucknow University Economics Department from November 6 to 8, 1965. It considered 12 technical papers on the subject by experts in public finance from different universities in the country. The finance departments of various States had also sent in their views.

The seminar came to the conclusion that the States need additional resources to meet their commitments under the Fourth Plan as well as for additional expenditure connected with defence. As the current price situation precludes deficit budgeting, they have to aim at surplus budgets on revenues account to finance a fact of capital outlay and of their saving.

The seminar addressed itself mainly to the question of the tax and non-tax revenues of the State Governments. It was felt that additional resources should be mobilised mostly through State taxation. The emphasis on different taxes would vary from State to State according to the level of development, industrialisation, etc. The seminar, therefore, discussed broadly the pattern of mobilisation, as also the size of such mobilisation.

The seminar felt that agricultural taxation should be so increased as to net five per cent of the additional income to be generated. This, it was felt, might be done through an increase of land revenue, a surcharge on it and taxation of commercial crops. It was suggested that a Land Commission might be appointed to go into the question.

The most important source of tax revenue in nearly all the States is sales tax. This tax, it was felt at the seminar, could be fully exploited by checking evasion, rationalisation and simplification of the tax structure, and by revising the rates. A more or less uniform pattern for the States was felt to be desirable.

Revenue from excise, the seminar felt, could be increased by rationalising the rate structure. Until now prohibition was enforced (at present only three States have adopted it fully), the aim should be stopping the consumption of illicit liquor and plugging the holes in State revenues on this count.

Between the tax and non-tax revenues the contribution of the latter in mobilising additional resources at the State level would be limited. With the exception of the surplus generated by public sector enterprises, other sources of non-tax revenue such as fees and fines and interest on loans and advances could not yield much. Public sector enterprises were not many at the State level. Hence the emphasis on State taxes. Nevertheless a few measures were suggested at the seminer to increase the contribution of public sector enterprises.

The seminar suggested that the public sector undertakings should try to earn a return of 11 to 12 per cent. It also felt that to utilise fully the existing potential and to provide incentives for productive use, the price structure should be rationalised, particularly for irrigation and electricity undertakings.

The State Governments were urged to consider enlarging their field of enterprise to revenue-yielding projects such as trade and processing industries. Also State trading in foodgrains, commercial crops like jute, cotton, sugar, gur and oilseeds should be given a high priority.

The seminar emphasised that saving should be institutionalised. Unless savings were increased, the resources from which the Centre and the States could draw would not be enlarged. The suggestions in this context were: extension of banking and co-operative credit facilities, higher rates of interest to the small investors in more attractive small-saving schemes, and extension of social insurance schemes, particularly old age insurance.

To relate State budgeting to economic performance it was emphasised in the seminar that the State finance ministries should have research units to conduct studies and submit economic surveys of the States along with the budgets.

A Survey Report on Chinnasemur

THE Chikkaiah Naicker Mahajana College, Erode (Madras State) conducted a survey of family statistics in the village Chinnasemur near Erode. Out of a total of 125 families, sixtyfour families were covered.

Chinnasemur is educationally backward—only 26 per cent of the total number of persons there are literate, literacy among men being 43 per cent and among women 13 per cent.

A large umber of persons are engaged in agriculture. Out of 64 families examined, 28 families are connected with land. None of them owns large holdings. 36 families are landless labourers.

The total income of 64 families from agricultural and other occupations as well as from livestock is Rs 63,886. The per capita income is 8½ annas per head per day. The standard of living is thus quite low. Ninety per cent members of these families are not able to make both ends meet. Debts further aggravate the economic plight of these people. Twenty-six families had incurred a total debt of Rs 28,440. Savings are almost unknown. They constitute only half a per cent of the total income. Only nine families had made some savings.

Poverty has given rise to educational backwardness which in its turn has created almost a cultural vacuum. Only thirteen families, for example, are aware of planning in India. Family planning has not taken deep roots there. Only 19 families have accepted family planning; fifteen families do not accept it; one family does not know anything about it and 29 families have no opinion about it. The results of the survey are thus revealing.

COUNTRY'S LARGEST PUBLIC UNDERTAKING WILL PAY RS 100 CRORE TO GENERAL REVENUE IN 1966-7: NO CHANGE IN PASSENGER FARES

Railway Capacity Will Be Ahead of Demand in Fourth Plan

THERE will be no change in passenger fares on the Indian Railways in 1966-67. Freight rates will be increased by 3 per cent.

These are the main proposals made in the Railway Budget presented by Mr S.K. Patil in Parliament on February 15.

The total receipts in the coming year are placed at Rs 795.33 crore. Working expenses are placed at Rs 508 crore; payment into the depreciation fund and pension fund will be respectively Rs 100 crore and Rs 13.50 crore. With miscellaneous expenses of Rs 17.47 crore, net railway revenue will be Rs 155.68 crore. Of this, payment to general revenues will be Rs 133.49 crore, leaving a net surplus of Rs 22.19 crore.

Receipts for the current year (1965-66), as revised, are placed at Rs 741.80 crore. Total expenses are Rs 595.56 crore. Net revenue is Rs 146.24 crore. Deducting dividend on capital paid to general revenues and the share of States in lieu of the passenger fare tax, net surplus is Rs 29.99 crore.

The Railway Minister said that there would be an extra 12 million tonnes of originating freight in 1966-7 above the level of 204 million tonnes anticipated for 1965-66. Goods earnings in 1966-67 were estimated to increase to Rs 488 crore as against Rs 462 crore for the current year; with the changes proposed, goods receipts are expected to reach Rs 506 crore. Receipts from passenger fares are placed at Rs 227.20 crore. The revised estimate for capital expenditure on works and rolling stock is placed at Rs 354.8 crore.

Reviewing the Railways' Third Five-Year Plan, Mr Patil said that the good performance of the railways in the second and third years of the Plan had served to clear all the traffic back-log and put rail transport ahead of the consumer demand in principal sectors such as coal and raw materials. He was confident that when the railways entered the Fourth Plan period, the freight transport capacity in terms of rolling stock would be just ahead of demand, though for specific flows such as raw coal to washeries, washed coal and other raw materials to steel plants and iron ore for export the margin would be somewhat more.

The Third Plan outlay for the railways was expected to add up to Rs 1,677 crore, which was 6 per cent more than the figure of Rs 1,582 crore estimated at the time of the Mid-term Appraisal in 1963. The foreign exchange expenditure, however, would be only Rs 245 crore, as against Rs 320 crore for the much smaller Second Plan. This, the Minister said, was largely due to significant development of the manufacture of railway equipment and stores in the country.

In the Third Plan, the railways had achieved complete self-sufficiency in wagon and coach manufacture and in mechanical signalling equipment and laid the foundations for diesel and electric locomotive production. In the Fourth Plan they expected to meet all their rolling stock requirements within the country except for some metre gauge diesel locomotives. Import of components would, however, continue for a few years.

The rolling stock fleet had been increased during the Third Plan by some 1,275 locomotives, 5,600 coaches and 1,17,000 wagons. Some 2,200 kilometres of new lines had been built, and track had been doubled over 3,150 kilometres.

The outturn of the Chittaranjan Locomotive Works in 1964-65 was 138 steam locomotives and 35 AC electric locomotives, and in 1966-67 the factory was expected to produce 120 steam and 75 electric locomotives. The Works would also take up the manufacture of heavy traction motors required in electric locomotives.

The Diesel Locomotive Works at Varanasi was expected to complete about 60 locomotives before March this year.

The Integral Coach Factory had so far delivered 4,700 coaches since 1955. The Factory was also manufacturing suburban stock with electrical equipment supplied by Heavy Electricals, Bhopal.

From small beginnings in the early fifties the wagon production capacity in the country had reached a level of around 2,500 to 3,000 four-wheeler unit equivalents per month. An Indian manufacturer had successfully secured an export order valued at about Rs 1.6 crore for freight wagons in the face of stiff international competition. There was hope of securing more export orders.

Labour-management relations had been good throughout 1965-66 and the permanent negotiating machinery had proved a valuable and effective instrument.

NEW ROPEWAY At Jharia

THE world's longest and fastest ropeway has been commissioned at the Jharia coal mines in Bihar. It is 30 kilometres long and has been built at a cost of Rs 3.33 crore. It will convey sand from the bed of the Damodar river to the mine site. The sand, carried along at the rate of 1,350 tonnes per hour, is used for stowing to fill the cavities after extraction of coal, thereby reducing risks of fire and cave-ins.

There are plans for two more ropeways—an extra one at the Jharia mines and the other at Raniganj mines. The three ropeways will facilitate supply of 4.5 million tonnes of sand and enable the two coal fields to produce 1.8 million tonnes each per year.

A new coal washery will be set up in Hazaribagh district of Bihar with assistance from West Germany.

30 More Thermal Power-Houses in Next 5 Years

Thirty more thermal power-houses, with a total capacity of 6.5 million kW, will be built during the Fourth Plan period, raising the total thermal capacity to 12 million kW.

For training the personnel to run these power-houses, a beginning has been made with 38 trainees at Neyveli. Another training centre is likely to be set up in the North.

Electric Furnace

AN electric steel melting furance has been manufactured in India by the AEI—Birlec Factory at Calcutta, owned by the Associated Engineering Industries Limited. It has been installed and commissioned in a unit of the Hindustan Aeronautics Limited. With a capacity of one and a half tonnes, the furnace will produce special steels.

NAPHTHA REFORMING AT ROURKELA

A naphtha reforming unit is to be set up at the Rourkela fertiliser factory. The unit will process naphtha into synthetic gas containing hydrogen and nitrogen, and enable the fertiliser factory to reach its rated capacity of 5.6 lakh tonnes by supplying 40 per cent of hydrogen required by the factory. The remaining 60 per cent will come from the coke ovens of the Rourkela steel works.

It will cost about Rs. 3 crore, including Rs. 1 crore in foreign exchange.

100 m Dollars to Help Industries

THE United States of America has offered India a loan of 100 million dollars (Rs 47.5 crore) for the immediate import of essential raw materials for industries. This loan was announced by the U.S. Vice-President during his recent visit to India, in addition to the loan of 50 million dollars announced earlier for buying fertilisers.

Australia has offered 8 million Australian dollars worth of foodgrains, mainly wheat, to help India in her food crisis.

WORK RESUMED ON 4th PLAN DRAFT OUTLINE

THE work on the Draft Outline of the Fourth Five-Year Plan has been resumed. It was delayed on account of the Annual Plan for 1966-67 necessitated by the national emergency.

Mr Asoka Mehta, Union Minister for Planning, informed the Lok Sabha on February 24 that efforts were being made to expedite the formulation of the Draft Outline. Such adjustments as might be necessary to meet more fully the high priority requirements of defence, agricultural production, import substitution and exports in the light of the latest economic situation are being taken into consideration in drafting the outline.

Snippets

India's exports in 1964-65 reached a record figure of Rs 815 crore, Rs 22 crore more than in the previous year... An agreement has been signed with West Germany for shipping services between the two countries... A trade arrangement has been concluded with Ceylon under which the value of annual trade between the two countries will be Rs 20 crore..... Under an agreement signed recently India has given to Ceylon a credit of Rs 2 crore which will pay for Ceylon's imports of dried fish, textiles and dry chillies from India... A modern fishing harbour is to be built soon at Haldia. A jetty providing berthing facilities to shipping boats will be constructed at Namkhana near Diamond Harbour...The Heavy Engineering Corporation has raised a further capital of Rs 14.40 crore in equity shares of Rs 1000..... each. A committee has been set up to find out a prototype of metal inserter for I.U.C.D. programme..... In Gujarat, 75,000 women have taken advantage of the I.U.C.D. programme in the past six months... In Betul district of Madhya Pradesh, family planning camps were held at 12 places and 154 vasectomy operations and 190 I.U.C.D. insertions performed in January.

Regd. No. D—876

YOJANA BHAVAN DIARY

The Planning Commission met on February 14, 15, 16 and 17 to discuss the different aspects of the Fourth Plan.

A two-day seminar on land reforms organised by the Research Programmes Committee of the Planning Commission was opened by Mr Asoka Mehta on February 25 at Vigyan Bhavan. Prof. V.K.R.V. Rao presided. Among the participants were Members of Parliament, experts in land reforms, leading economists and university teachers.

Dr Vilmos Saghy, Deputy Chairman of the National Planning Board, Hungarian People's Republic, met Mr Asoka Mehta on February 21. Among others who met Mr Mehta were Dr Eppler and Mr Willy Berkhan, Members of Parliament of the Federal Republic of Germany (February 16), Dr A. Richard Baldwin, Mr Whitney Macmillan, Mr Ralph Holingsworth, members of the U.S. team on production and distribution of quality seeds (February 19), Mr John Blackton of Cornell University, U.S.A. (February 19).

Among leading representatives of the foreign Press who met the Minister for Planning were Mr William Cook, Special Correspondent, *Newsweek*, U.S.A. (February 14), Mr Sydney Gruson, Foreign Editor, *New York Times* (February 16), Mr Phil Potter of *Baltimore Sun* (February 17), Mr Sydney Monks, Diplomatic Correspondent of *Sydney Herald*, Australia (February 22).

Mr Kali Biswas, Assistant Editor, *Yojana*, has retired from Government service with effect from March 6, 1966.

QUOTATION BOX

After all I have been Finance Minister of three Governments.
—*Mr Sachindra Chaudhuri in an interview*

The Punjabi lives well, eats well, but does not buy books.
—*Mr Kartar Singh Duggal, Punjabi author*

The rolling stone never gathers bosses.
—*From a review in "The Century"*

The Speaker, Dr L.N. Sudhansu, ruled in the Bihar Assembly that he would not allow pan-chewing in the House.
—*News report*

Banaras Hindu University is understood to have proposed to create a post of professor in "Jyotish", says UNI.

The Education Ministry has, however, requested the university to include the proposal in its Fourth Plan.
—*News report*

Moon Poses for
Pics, Talks
in Russian
—*Heading of an article in Communist "New Age"*

On the question of drugs, the Ministry of Petroleum and Chemicals has a say by right of being the "producing Ministry" (it deals with indigenous plants); the Ministry of Industry is in the picture since the technical development experts are there; the Ministry of Finance is very much concerned because it allocates foreign exchange; the Ministry of Commerce makes its presence felt because it happens to be the "importing Ministry"; and the Ministry of Health acts as the "recommending Ministry".
—*Report in "The Statesman"*

Mrs Ila Mitra (Right Com.) was criticising the Government and the Chief Minister, when Mrs Biva Mitra (Congress) took up the challenge. Both were shouting at the top of their voices, while the rest of the House smiled.
—*Press Trust of India*

Three weeks ago, Hamburg designated a mid-town plaza as "grudge-airing-plaza" where anyone holds a grudge either against the world, his employer or his next door neighbour, may go and air it, quite literally.
—*Report in "The Statesman"*

The hard, beef-eating, beer-drinking go-getters of the I.C.S. were inclined to regard scholars and intellectuals with the same suspicion and disdain with which "egg-heads" are nowadays regarded in the U.S.A.
—*Mr K.P.S. Menon in "The Illustrated Weekly of India"*

Up, Up, Up,
Prices are up,
Vices are up,
Arms are up,
Sleeves are up,
Tempers are up,
Tensions are up.
—*Sardar Naunihal Singh, the "Tradesman Poet" of Delhi*

It is after all not necessary that the Chairman of the Atomic Energy Commission or the Secretary of the Department of Atomic Energy should have done a stint in the districts or have been pushing files in the Central Secretariat.
—*Editor of "Eastern Economist"*

A Hindu undivided family (HUF in legal jargon) is not necessarily a united family. It is a legal myth often helpful in spreading the tax burden.
—*Mr G.N. Acharya in "Blitz"*

He opposed family planning because he said it abetted immorality. He wanted the country to make the atom bomb.
—*Excerpt from a newspaper report of Lok Sabha proceedings*

There appears to be no meaning in talking of democratic socialism as nobody knows what it is.
—*Mr G.D. Birla at the Indian Merchants Chamber*

Readers Say :

Please publish a graph showing India's indebtedness incurred during the three Five Year Plans. It must be published in every issue so that people may know their burden and find out what should be done to shoulder it.

Tanjore R.V. IYER

Your esteemed magazine must contain at least one article on literary or educational topic. Already the magazine is very popular among students and teachers; its popularity can be increased manifold by introducing articles of literary and educational importance.

Dharamsala PROF. ATMA RAM

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YOJANA

MARCH 20, 1966

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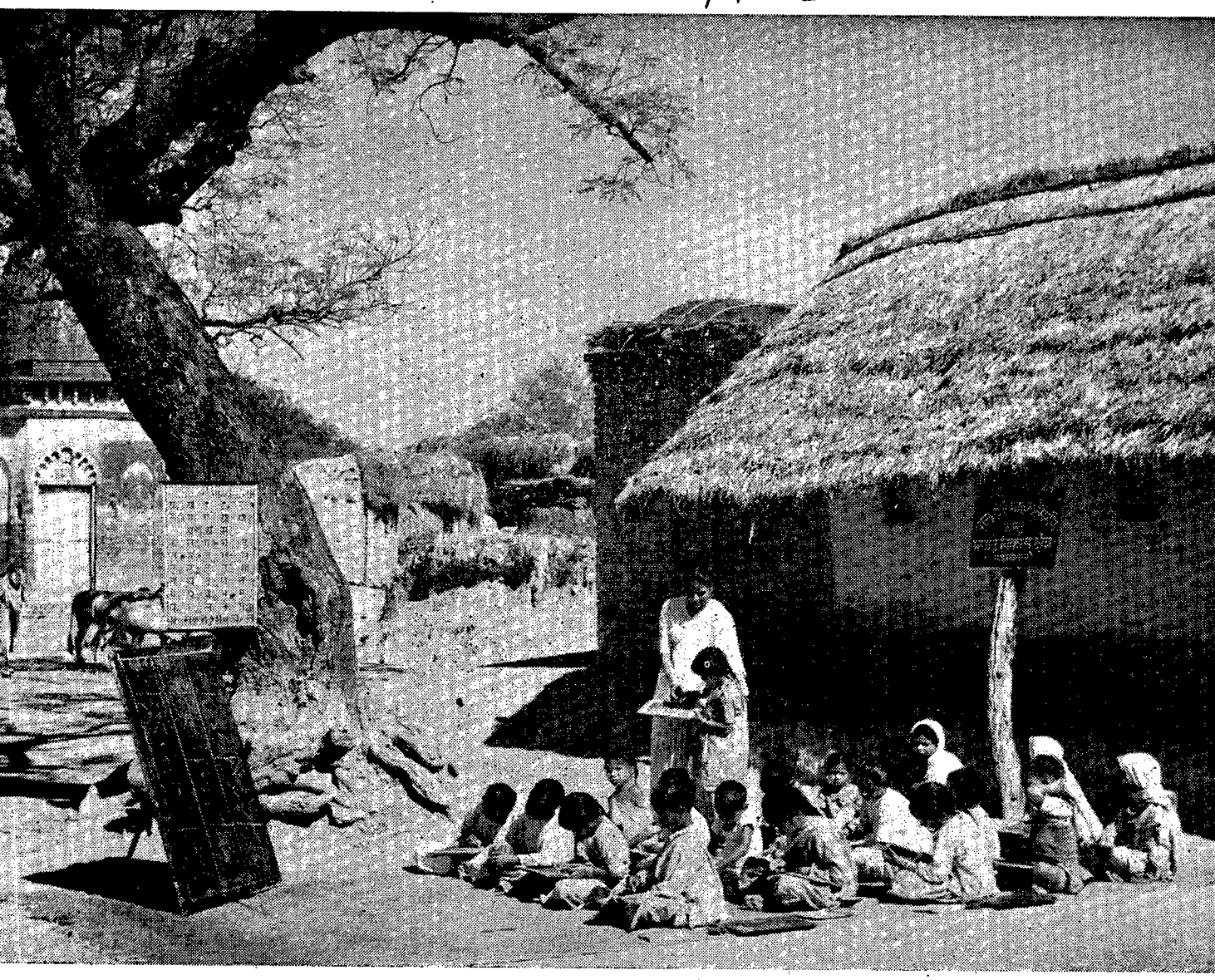
TENTH YEAR

NO-5



25 PAISE

THE UNION TERRITORY OF

UTTAR PRADESH

ASSAM'S HILL DISTRICTS

ABOUT YOJANA

Yojana seeks to carry the message of the Plan to all sections of the people and to promote a more earnest discussion on problems of social and economic development.

It is issued every other Sunday in two separate editions, English and Hindi.

The Advisory Board of the journal consists of the Minister of Information and Broadcasting, the Minister of Community Development and Co-operation, the Minister of Agriculture, Mr. T. N. Singh, Mr. Shriman Narayan, Mr. Akshaykumar Jain, the Secretary, Ministry of Information and Broadcasting, and the Secretary, Planning Commission.

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IN THIS ISSUE

Cover : A school in Natkhur village near Lucknow, Uttar Pradesh (See also Page 9)

Letters

A Milky Way

I have read with deep interest your thought-provoking article "Reporting Social Change" in your annual number. I have spent the past 33 years of my life in rural surroundings and have developed a genuine love for rural life. And yet I look in vain in our press for news about social changes going on in rural India. The fact is that the rural India is changing, even if the change for the better is miserably slow in some regions and fast in others.

Better means of communication, higher literacy and increasing opportunities for the enterprising and hard-working among the rural people are the basic factors that bring about change. Enlightened and helpful leadership and good administration prove a boon, but these are not always in the same measure in all the States.

Let me take up one concrete example. The districts of Meerut and Bulandshahr produce milk for Delhi where the demand is almost unlimited. The Delhi Milk-Supply Scheme has established milk-collecting centres along the main roads from Delhi to Bulandshahr, Delhi to Meerut, and Delhi to Garh *via* Hapur. These centres, offering a fair price for milk the year round, are proving a boon to the surrounding villages. Fortunately for Delhi the people in these districts are hardy and enterprising. The result is fast development in animal husbandry in villages along these roads.

However, the monsoon is the biggest factor determining even milk production. During 1963 and 1964, rainfall was excessive; 48 inches were too much for this area, especially for low-lying lands. This resulted in water-logging, poor kharif crops and too little fodder for the cattle. Hence there was no use in the quantity of milk raised. The year 1964 was so bad that milk buffaloes fed on grass from water-logged lands became sick and there was a fall in the supply of milk despite a use in their number. However, nature offers its own compensations. The succeeding year, 1965, proved an excellent season. Rain was 24 inches and that was just what the people really wanted. The Kharif crop was excellent, cattle grew very healthy and this resulted in all-round prosperity. There was a rise of 50 per cent in the production of milk in 1965 compared to the two previous years. The hardy kisans have made great progress in animal husbandry. If excessive rains, year after year, do not handicap them, we can look forward to an annual increase of 20 per cent in the quantity of milk raised.

Simbhaoli (Meerut) SAJJAN SINGH

Villagers' Friend

SINCE October 1952 the Community Development Blocks in India have been organised as the rural unit of planning and development. The B.D.O. has been described as the "leader of the team" working for the upliftment of the rural society from its age-old slumber. Representatives of all Development Departments, about eight in number, have been placed in each Development Block. At the Block level the B.D.O. is the authority who co-ordinates and ensures discipline of the Block staff.

Since the inauguration of Panchayati Raj, the B.D.O. has been made the *ex-officio* secretary of the Block-level panchayat. The villagers come to him for various kinds of advice. Previously they used to go to the district or sub-divisional headquarters for such advice.

But for the B.D.O. the post is not a bed of roses. He is made the scapegoat for anything that goes wrong. Some block panchayat presidents are angry that the B.D.O. controls the block staff and wields financial powers, while they have no authority or power. To cap it all the jeep has become a cause of misunderstanding.

If the best way to cure headache is to cut down the head, the post of B.D.O. should be abolished. Only the poor and illiterate villager will miss a friend.

A B. D. O.
(with the sword of Damocles over his head)

YOJANA

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FOOD, 1966

TROUBLE in Calcutta. Trouble in Mizo Hills. Trouble in Amritsar. Uproar in Assembly. Pandemonium in Parliament. Deaths in the streets. Deaths in the air. The headlines in the newspapers are not calculated to cheer the people of India. So much are we habituated to stressing the departures from the norm that when a notable solution of a labour dispute is achieved and further disturbance *avoided*—as in Bombay—we tend to overlook it. All this apprehension and proneness to despair has been engendered by the feeling that the current food difficulty presages worse days to come.

In other countries the impression has been created that there is a widespread famine in India. Television programmes have painted such a harrowing picture that little childern in Europe have risen from the table and asked that the breakfast untouched by them be sent to India. Within our own country, however, the waste at feasts and weddings continues. The plates of the affluent groan under the weight of eatables. With callousness there is also exaggeration. Delays in distribution are seized upon and exaggerated. Twenty years ago when people died food-less in Bengal the nation's voice was muted. It was the ultimate shame of the impotence caused by foreign rule. It is one of the blessings of self-rule that our voice is raised even at the slightest suggestion that the people might suffer. Freedom means that there will be no spiritless resignation.

But with this alertness, with this readiness to protest and demand, which is the essence of democracy, must go a sense of responsibility, a habit of finding the facts and basing conclusions on facts, which is also a condition of the success of democracy.

What are the facts about food? This year, 1965-66, had a much smaller harvest than the preceding year. The reason was that we had a bad, bad, bad monsoon. The skies gave us only half our annual share of water. In large parts of India seeds did not sprout; where they grew, the stalks were stunted and the ears did not fill out with seed. The shortage, compared to the previous year, has been placed at anything between 5 million to 14 million tonnes of grain. Even though the agricultural year has still three months to run, let us assume the worst and put the decrease at 14 million tonnes. Even so the harvest must be around 75 million tonnes—which, let us not forget, is still 50 per cent more than what was grown in 1951-52, and 20 million tonnes more than at the end of the First Plan. What has happened is that drought prevented us from maintaining the big surge of 1964-65, which was a record year for food production, and pushed us back to the position of the first three years of the Third Plan.

True, population has grown, too, and prices have gone up. It is the rise in prices and expectations, and inadequacies of distribution, that are at the base of our current food troubles much more than any actual absence of food-grains. Despite the worst failure of rains in a century, the harvest is not certainly among the poorest in memory. This in itself is a tribute to the substantial advance we have made in strengthening our agriculture. If such a thing had happened before freedom, the result would have been catastrophic. Let us not forget— and most of the young men and women now in college may not even know it—that the death roll in Bengal alone in 1943-44 was three million and more. Even a millionth of it happening now is unthinkable. It will not be allowed. When it comes to providing food for the people we swallow all our slogans (only in September we were saying we would rather starve than be dependent on others) and get food from abroad. For there can't be anything more sacred than saving lives. So we are getting a large volume of wheat from the United States. The Prime Minister therefore is very correct in saying that there is no famine in the country. There is not and will not be any starvation.

What needs to be done now is for all people in public life and all responsible citizens join together and see that the lawless ones are given no scope to hurt the people. They must learn to help the administration and educate the people and thus help the nation to overcome this crisis of management. They must preach patience as well as exercise pressure and always see that there is no departure from peaceful ways. Simultaneously they must persuade people to accept wheat where rice supplies are inadequate. When we are asked to change our food habits we are only asked to take what is more easily available, and is in fact priced lower. The "rice or stones" attitude is not safe in a democracy. National life will be in danger if stone-throwers and arsonists are allowed to bully the citizens. While we mourn those who have lost their lives in the food riots, and express sympathy with those who have suffered, let us check violence.

THE DEVELOPMENT OF HILL DISTRICTS OF ASSAM

TARLOK SINGH

A study team constituted jointly by the Centre and Assam State at the instance of the State Chief Minister completed a tour of Assam's Hill Districts by the first week of March. The team visited the Districts of Mizo Hills, Garo Hills, North Cachar Hills and parts of the Khasi and Jaintia Hills Districts and held discussions with members of the District Council of Mikir Hills. The team which was led by Mr Tarlok Singh, Member, Planning Commission, included a number of officers of the Central Ministries, the Planning Commission and senior officers of the Assam Government. At the conclusion of the tour, Mr Tarlok Singh addressed the members of the Assam Legislative Assembly on the development problems of the Hill Districts. Following is an abridged version of the address.

THE autonomous Hill Districts of Assam have nearly half the area of the State though they account for about 11 per cent of the total population. General statistics often cited about revenue, road mileage, literacy and so on do not quite bring out the nature of the problems of development which these districts are confronted with. It is true that increasing efforts have been made by the State Government during the three Plans to give attention to the special problems of these districts. But it will be doing no injustice either to the Centre or to the State to admit that so far even the surface of the problems of development has not been scratched.

It is true that in many directions earnest efforts have been made to open up these districts, to expand education and to bring social services to the people. But the size of the problem and its nature are both complex and enormous.

It is only when one can get off the road and go far into the interior that the nature of the tasks to be undertaken can become fully known. Perhaps I should say that in trying to understand the economic and social problems of the autonomous districts, there are five principal factors around which we may organise our experience and our thinking.

First comes the geography, the terrain, the topography, the resources which nature provides—land, forests and others—and what the hand of man does or fails to do to utilise these resources. It is quite extraordinary how even within the same district, from the geographical and physical angle, the situation changes from area to area.

Along with geography, we have to consider the people, their occupations, their skills, their social structure, the land tenure system and other aspects. We learnt something about the institutions and the special characteristics of different groups living in these districts. But necessarily, what we learnt during our brief period, added to what we could read, would be inadequate. Whether it is in the more advanced areas or in the less advanced, ultimately it is the people who have to be transformed and who have to undertake the tasks of development. In our view, there is need for all of us to know much more about the people, to understand their cultural and other traditions and to study the problem of change and adaptation and the human and social as well as the economic and other aspects.

Next to geography and the people, the aspect which strikes one most is that of transport and communications. Here, compared to the policy of isolation and studied neglect which was followed during the period of British administration, what has been done over the past decade or more is creditable and significant. But considering everything, it has been very meagre.

The fourth aspect which may be mentioned is that of markets and outlets. Over the years and, specially as a result of our plans, although far from fully integrated, our national economy as a whole is becoming more and more linked and unified. In these districts, as one would expect, there are important elements of isolation. Therefore, in undertaking development one needs to look in a purposeful way for possible outlets for the products of the area and the links between the economy of each of these areas and the wider economy for which, in an overall sense, these hill districts remain at the fringe.

Lastly, in these areas it is not possible to think of problems of development without at the same time realising that over the greater part these areas are deficit in food. Supplies have to come from outside from a considerable distance. The manner in which supplies reach the people, the regularity and efficiency

with which they are made available and the price at which they reach them are of paramount importance. Indeed, in any scheme of development that is undertaken in the future, it would be worthwhile to give a great part of our attention to how the basic needs of the people, specially for food, are to be met. From such information as one was able to gather, there is room here for doing a great deal more and a great deal better.

An aspect which arises from the factors that I have mentioned and which is worth stating at this point is that for at least four or five months in the year both men and women are practically without work. During this period we find in these areas the more extreme forms of poverty. Yet, as with us in the rest of the country, this slack period and the labour available during this period are a potential asset which we can harness towards the building up of the economy of these areas.

It has been observed that, with good intentions, as I know, to some extent in other parts of the country as well, schemes have been taken in hand and programmes implemented which did not have or do not have that direct relevance to the problems which represent the real struggles and needs of the people. Elsewhere, the people being somewhat better equipped, to some extent, they may be able to correct the deficiencies in our mode of planning and implementation. But here, there is a real danger that unless our plans were well conceived and related directly to what the more important needs of the people are, instead of doing real good to them, they may only seem an unnecessary burden. This is true of quite a few schemes which are being pursued merely because they come within the general structure of our plans and the manner in which departments draw up their proposals.

In these areas we found everywhere a good deal of dissatisfaction with community development. I do not think that the real meaning and purpose of community development, which is to enable the people of each area to grapple with their own problems in their own way with whatever technical know-how and resources that the administration can provide, has been either fully grasped or put across to the people.

In the Blocks, because the programmes were not based on a close enough understanding of what the problems were in many parts of these districts, we really do not have at present much to offer that is directly pertinent to the requirements of the area. This does not mean that through the Blocks a certain measure of development has not taken place or assistance not provided. It only means that the task of orienting the plans of development to the needs of the people has yet to be undertaken.

We felt that in each district something like an area approach was essential. It is in terms of the geographical, social and economic characteristics of different areas that we could best formulate plans for the future.

Subject to correction and subject to further study, I would say that in the Mizo Hills District, for instance, there might be four different development areas. North of Aijal we have the area on both sides of the Silchar-Aijal Road comprised within the Aijal, Saitual and Mamit Blocks. The second area, falling largely within the Champai Block east of Seling-Lungleh Road has a considerable tract not yet reached by road. The Hnathial and Serchhip and Lungleh Blocks between themselves constitute the third development area and the Pawi-Lakher Region forms the fourth. Within each area there are considerable portions which have not been effectively reached and indeed can be said to have been neglected to a large extent. The Mizo Hills is a difficult district to develop and, specially, after the famine about five years ago associated with the flowering of the bamboo, conditions in the villages in the interior have probably been much more difficult than we might be able fully to appreciate.

In the Garo Hills District, there is the belt south of the Tura range which has in it the problem similar to that of the Mizo Hills District areas, whose main outlet formerly was towards Myminsing. There is the western portion which will include all the area from Dalu, Tura, Phulbari and a portion further east which might focus in the direction of Dhubri as an outlet. There is substantial underdeveloped area to the east which could eventually focus on Goalpara as the outlet. Roughly, we saw these three regions as areas for development.

Mikir Hills on the whole mark themselves out as between the eastern and the western Mikir hills, but I believe, because of the recent disturbances, considerable difficulty is being faced by people to the extreme east of this district. In the North Cachar Hills, where we visited several villages and saw the changing physical environment, we would need different approaches to the development of the eastern hill area and the areas situated in the Diyung valley and in the Jatinga valley. Here, in the Khasi & Jaintia Hills District, one could certainly distinguish between problems in the 'war' area, in the plateau area, in the Bhoi area and to the far west in the Lyngam area.

Thus, whether we think of social services, or agriculture or communications, more than the customary Blocks, the development areas to which I have referred will provide the necessary foundation for our planning. It will be of great value first to diagnose the nature of the total technical, economic and human problems with which we are confronted in each area and to devise our programmes and schemes accordingly.

There is another important point here, namely, administration of development. We do need to give far greater flexibility and authority to local institutions and local officials to make adjustments, to change the schemes and programmes, and to shift emphasis according to what is required.

With this general background, I shall try to touch rather briefly on a few aspects of development as they struck us.

Everyone agrees that communications are the fundamental thing. Without them no other aspect of development can be undertaken successfully. We felt that, however big a burden it might be, it would be better for us during the Fourth Plan

to invest in roads and transport services to the extent of our maximum physical capacity to perform. To that extent, in the subsequent plans it would be possible to do a great deal more in other fields. We found a general complaint that many roads were begun but not finished, that in our road planning we were not sufficiently systematic, that we did not look at the broad network including the main roads, the feeder roads and the approach roads as a composite system. The responsible engineers of the Assam Government, who were in the Team, are fully seized of this matter and are doing a great deal of intensive work. They have gathered data so that our future road planning could avoid some of the difficulties and defects observed in the past.

There is a point that I will mention here. The tasks of development are so many and so difficult that it would be essential in every field to find ways not only of getting the best out of the machinery of administration that we have now, but also to strengthen and equip local institutions, specially the District Council, and, through the District Council, to bring the local communities in whatever form they might be organised into the tasks of development. Otherwise feeder roads and approach roads will not be easily constructed.

Next to roads and transport services—here I may mention that we are also giving attention to the extension of postal and telecommunication facilities—the most important task is the reorientation of the present agricultural economy. Over a considerable area in these districts, the problem is a composite one. Forests, soil conservation, agriculture, horticulture, development of pastures—all these are really a single, composite problem.

Speaking roughly and as a layman, I would say that in these areas in which we have this composite problem—the suggestion is that the top of the hills up to roughly 200 feet all round should be secured for planting trees, for forest growth. In the forest areas under the District Councils, with their co-operation and through them, it would be necessary to mark out belts which may be described as protected forests. Further, our experts have made proposals for fire-tracing, for contour-wise strip cropping, for combined use of fertilisers and organic manures for improving the yields of jhum land and getting cultivation, say, for two years at a time, methods for river training and ensuring that no trees are felled within a distance of 100 feet on both sides of each stream, and marking out areas of pastures where nutritious grasses would be grown.

In some districts, there is a great deal of thinking going on about the need to bring families together and secure larger village homesteads, so that the various services could be carried to the people. As we saw, this has to be done, but bringing together all isolated homesteads into villages with 40 or 50 families or more would have to follow as a step in pursuit of the kind of agricultural development which I mentioned. We also gave some attention to agricultural implements. This is an enormous field for development, the existing implements being mostly primitive in nature. Agricultural implements will provide a useful basis for future development of small industries in the hill districts. These areas offer considerable opportunity for the development of animal husbandry, poultry, piggery and in some cases also fisheries.

One other aspect which drew a great deal of attention in our tour concerned education. Our feeling was that on the whole problem of tribal education our present approach is in many ways inadequate and also inappropriate. Briefly, we have essentially to introduce much more of basic education, and, at the middle school level, much more of vocational education and science and mathematics. There are in these districts many people anxious to establish "venture" schools, "proceeding" schools and so on.

A good deal of effort is going into education, but much of it is not going to give the results which we need and it is not going to give us the trained persons which would be required in future.

Similarly in regard to the education of girls, the proportion of drop-outs at various stages is also very high. In the Mikir Hills, they told us that a lower primary school frequently functions for perhaps only half the month. Several days in a month are spent in the teacher going a long way to collect his salary and coming back.

So this is an area in which I would suggest that some of the best educationists in the State might get together with the tribal leaders and see how some fundamental changes could be introduced. Education is in fact a most critical area.

Another aspect to which I would like to refer because it disturbed us a great deal relates to health and medical facilities. Here, the general shortage of doctors and personnel is greatly accentuated in the autonomous areas. For instance in four of the Blocks in Mizo District which are in stage I, we found that out of four doctors for whom sanctions existed there, none was available. Out of four Lady Health Visitors, three posts were vacant; out of four compounders two were not in position. Now this is an extreme case. But elsewhere also this problem came back again and again. One of the members of the District Council made a remark which is worth citing. He described our dispensaries as being a case of bottles without medicines and buildings without doctors. It may not be so everywhere, but this is the situation presented to us in many places. I would say that it would be worthwhile for a year or two to open very few new dispensaries, confining these only to the most outlying areas, to provide for mobile dispensaries and, for the rest to consolidate and make sure that the facilities we already have are doing the part expected of them.

We do need a much more planned approach to the development of processing industries and rural industries. Also, I think a short-term plan for taking power to a few key points in these districts is essential. A long term plan can come afterwards. For want of electricity, for nearly two years, the Industrial Training Institute for Aijal is functioning at Silchar with barely 15 or 20 students from the Mizo Hills District; similarly with the Industrial Training Institute at Diphu. We have to go beyond the institutions which we are setting up to see how, from the earlier stages of education, young men may be picked up and

enabled to continue their education till they become available as fully trained and prepared personnel. That emphasises the importance of having what might be described as "central schools."

I would like to close by referring to a few problems of planning, administration and organisation. In recent months in the Planning Commission our thinking has been that for the specialised and arduous work which has to be done in the hill districts, it is necessary to have subcadres within various Departments comprising people who would be specially trained and equipped for work in the tribal areas. Just as missionaries in many parts of the country have worked for a life-time and then only reached a position to get close to the people and influence their thinking, in the same way the public services at all levels have to provide the essential core of developmental personnel to work with local institutions and local leaders who have also to be fully mobilised. This means that District Councils have to become a fully organic part of the scheme and structure of development. The total job is such that it cannot be handled by officials alone. So, Community Development Blocks and the whole apparatus of Government at the ground level has to be strengthened along with whatever further changes that might be required in the working of the District Council system. It is also necessary that the four autonomous districts of Assam should be conceived of as a planning region. There are, of course, problems linking up different districts with different parts of the State from the point of view of economic integration, yet the nature of the essential tasks is common to them, though in some cases the emphasis may be different.

So, in our team, we have felt the need for a Development Commissioner for the Hill region. He should function, along with the team of high technical officials in the various departments, as the chief executive of the Planning Board for the hill region. It is for the Government of Assam to consider the details of what may best fit the situation. But it is important that the planning problem should be conceived of in a more composite way, bringing to bear on the plans of these areas the knowledge and appreciation of those from the area itself who are best acquainted with the problems and facilitating readily various changes, adaptations and adjustments.

Lastly, I would refer to an important proposal for which, once the idea is fully accepted, the Central Government would gladly find all the resources required. We found that in many areas it is necessary to do a great deal of work before the proper answers can be found. There was need for what might be called a Development Institute, with teams of specialised experts working together along with the administration and the local institutions in identifying problems and finding the appropriate solutions. The tasks that I mentioned, and many other tasks also, have not yet been successfully tackled in any part of the country. Nowhere else are these tasks of development as difficult as they are in these districts and in the other tribal areas in the north-east region of the country. So we visualised a Development Institute, a kind of "mother-institute", somewhere in the Khasi and Jaintia Hills District, with distinct but connected Development Institutes in the Mizo Hills, in the Mikir Hills, in the North Cachar Hills and in the Garo Hills. This would bring a body of people together, who will be engaged all the time in seeking the answers needed. The Institutes will provide locations where various kinds of personnel, official and non-official, would come for training and different kinds of specialists will be available.

I think it is extremely important that since for many years a considerable body of workers in these districts will have to come from outside, they should become completely acclimatised and adjusted to the environment, they should know the language and get close to the people. We found Village Level Workers who were not able to speak the language of the people. It is not possible to do extension work if one is able to communicate only through a village interpreter.

In conclusion, I would say that, as a result of our tours and discussions, all of us in this team have come back filled both with a sense of challenge about the tasks to be undertaken and a sense of confidence that, given the necessary effort and organisation, harnessing of the institutions and leadership and efforts to create the necessary feeling of participation, this job can be done. Because the institutions of the people in these districts are based far more on the principle of co-operation and collective action than in many other parts of the country, once the people begin to move forward, we believe, that progress may be surprisingly rapid. The people of the districts have their handicaps and limitations, but they have very few inhibitions.

The creation of a favourable environment will play an important psychological as well as operational role. The task is of such character and dimensions that the Central Government and the State Government will have to work very closely together. In other words, the Centre will have to come forward to do its share and to ensure that whatever plans are drawn up, whatever resources are indicated, are made available so that the people at all levels can go forward with a sense of assurance.

Water for Jabalpur

Jabalpur in Madhya Pradesh has started getting drinking water from the Gour river scheme. A temporary dam, about two hundred metres in length, has been built on the river to impound water. Two lines of pipes have been laid over a distance of three kilometres from the river to the Khandari reservoir to supply water to the scarcity-stricken city. This emergency scheme ensures a water supply of 30 lakh gallons per day.

Co-operative Hospital in Bombay

A co-operative hospital with 120 beds has been opened in Bombay. It has been sponsored by a co-operative society of doctors and laymen who collected Rs 5 lakh as share capital. Maharashtra Government has contributed Rs 5 lakh and Maharashtra State Co-operative Bank has given a long term loan of Rs 10 lakh for the hospital. The hospital aims at providing medical and health services at a low cost within the means of the middle class people.

The six galvanising lines to be set up at Rourkela, Durgapur and Bokaro would together require Rs 4.34 crore of foreign exchange a year for importing zinc. Hindustan Steel foresaw the difficulty five years ago and made provision for switch-over to aluminising.

ALUMINIUM CAN REPLACE ZINC IN COATING STEEL STRIPS

M. V. Mohan Rao

Central Engineering & Design Bureau, Hindustan Steel Ltd.

THE present Emergency and the acute shortage of foreign exchange call for the development of new techniques for replacing imported metals like copper, lead, zinc, and tin whose minerals are very scarce in India. The magnitude of the draft on foreign exchange on account of these non-ferrous metals can be well realised from the fact that about 200,000 tonnes of them are imported every year at a cost of about Rs 60 crore.

The expansion programmes for defence and other industries in the Fourth Plan necessarily demand import of greater tonnages of non-ferrous metals. The problem of finding foreign exchange for these imports will further aggravate during the Fourth Plan. The importance of substituting these imported items with indigenously available materials cannot therefore be over-emphasised.

It is hoped that the proposed crash programme of Rs 250 crore for conducting nation-wide aeromagnetic and geological surveys for the exploration of non-ferrous mineral deposits will yield fruitful results. But it is a time-consuming process.

It has been suggested that imported metals like copper and zinc be replaced by aluminium which would be produced within the country in large quantities. Bauxite is available in abundance in India and a massive expansion of the aluminium industry is being contemplated in the Fourth Plan.

This article discusses the practicability of introducing aluminium as a substitute for zinc in the coating of steel strips.

The demand for galvanised (zinc-coated) sheets at the end of the Fourth Plan has been estimated to be about 700,000 tonnes. The Tata Iron and Steel Company and the Indian Iron and Steel Company have been producing galvanised sheets for a long time now. At Rourkela two galvanising lines are being installed to produce 160,000 tonnes of galvanised sheets a year. These are expected to start production by 1967. But even with the production at Rourkela, TISCO and IISCO, the shortage in this item by 1971 will be about 360,000 tonnes.

It is now planned to install four more galvanising lines, two each at Durgapur and Bokaro. The production of 210,000 tonnes at Durgapur and of 150,000 tonnes at Bokaro is expected to start by 1970.

The six galvanising lines, when they operate at their rated capacities, will together consume about 28,550 tonnes of zinc every year. Assuming the import price of zinc at Rs 1,530 a tonne, the total foreign exchange that will be required for these six lines amount to Rs 4.34 crore a year. This is a large sum in terms of foreign money which India can ill-afford.

The scarcity of zinc in our country and the impact of its imports on our tight foreign exchange position were foreseen by the Hindustan Steel even about five years ago. Its Design Bureau had already made specific provisions in the lay-out and design of the two galvanising lines being built at Rourkela.

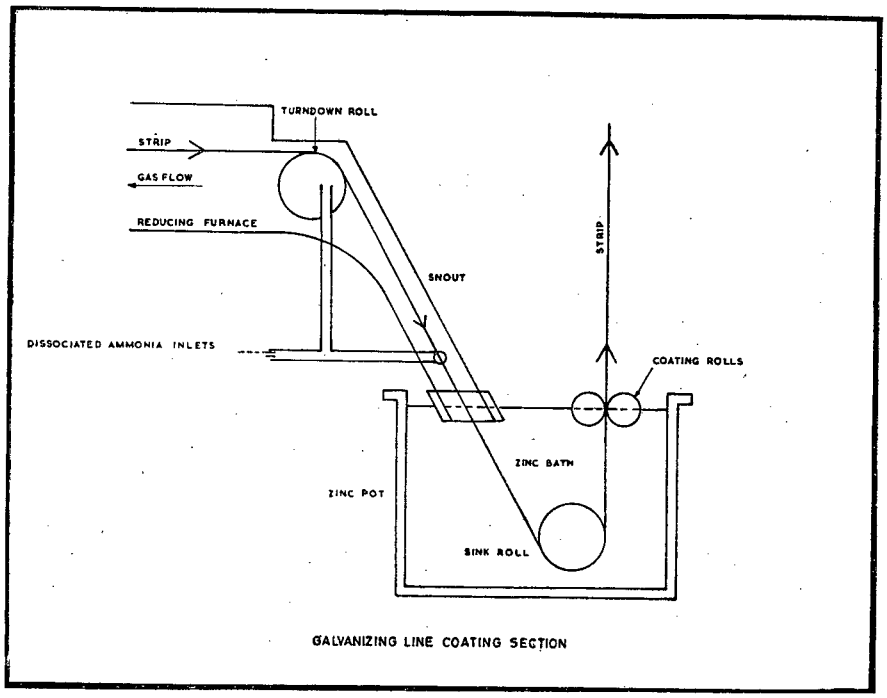
The purpose of galvanising is to prevent corrosion of the base metal. The oldest process, which is now almost obsolete, is the hot-dip sheet galvanising.

In this process the hot rolled sheets are first pickled, rinsed in water and neutralised in an alkali solution. The sheets are then given a flux coating before dipping them in a molten zinc bath. The sheets are then passed through a set of coating rolls before they are taken out of the zinc bath. Finally, they are cooled, levelled and piled.

Both TISCO and IISCO follow this process. But the coating on the sheets galvanised by this method show wide variations in its thickness along the entire sheet length and also poor adherence.

Among the several hot-dip processes available for continuous strip galvanising, the Armco-Sendzimir Process is widely used. It is new to the Indian Steel industry. The process was invented by T. Sendzimir and developed and applied by Armco Steel Corporation of U.S.A. in 1936.

A typical Armco-Sendzimir galvanising line is divided into three sections as described below :



GALVANIZING LINE COATING SECTION

Entry Section : Cold reduced steel strip coils in fully hard condition are fed into the entry section of the galvanising line. There they are uncoiled, levelled and welded into continuous strip. A storage loop and a dancer roll which regulates tension separate the entry section from the processing section.

Processing Section : The surface of the strip is then cleaned in an oxidising furnace where the rolling oils and other contaminents are burned off. The preheating also imparts a light oxide on the strip. Then it enters the reducing furnace which is divided into three main sections. There the strip is heated up to the correct temperatures maintained at the critical level and then cooled to the temperature at which it enters the galvanising pot. As the strip is annealed in the furnace it passes through an atmosphere of dissociated ammonia. The hydrogen completely reduces the thin surface oxide on the strip leaving a superclean strip surface for coating with zinc.

After the initial melt-down of the spelter in the zinc bath, the heat for maintaining the pot temperature is provided by the incoming strip. The strip emerges from the zinc bath (See fig.) through a set of coating rolls which control the coating thickness. Then it passes through cooling towers where large blowers cool it to a temperature at which it can be levelled without too much age-hardening.

After levelling, it is given a surface treatment with a dilute solution of chromic acid to prevent the formation of white rust which is a characteristic of all galvanised sheets.

Delivery Section: The strip then passes through a storage loop into the delivery section. It is either recoiled on tension reels or passed through a guillotine shear where it is cut into sheet lengths and then piled.

Aluminised Steels

During the past ten years there has been intense activity, mainly in U.S.A., regarding the possibility of having hot-dip aluminium coatings on steel strips instead of zinc coatings. Appreciable quantities of aluminised steel strips have been made. There are now three continuous processing lines producing aluminised steel—two in U.S.A. and one in France. In addition there are thirteen dual purpose lines designed for producing either galvanised or aluminised steel, nine in U.S.A., two in Canada, one in Italy and one in Japan.

Aluminised sheets can be successfully produced only after acquiring sufficient experience in producing galvanised sheets. The galvanising lines being installed at Rourkela and those planned for Durgapur can be converted to aluminising lines.

The galvanising and aluminising processes are basically similar and the plant and equipment are also the same. The main differences are caused by the different physical properties of zinc and aluminium. Aluminium melts at a higher temperature and is more reactive than zinc. Molten aluminium is extremely corrosive to the steel strip and the steel parts of the snout, coating rig and the pot. Aluminium also reacts with air rapidly to form oxides and nitrides which float on the surface of the bath and interfere with proper coating.

Armco Steel Corporation are again the pioneers in the development and production of aluminised steels. The first aluminised steel was made available to the U.S. market in 1939 by Armco who did extensive research in this field. This hot-dip aluminium-coated steel was called Armco aluminised steel Type I which has proved to be very economical for applications requiring excellent resistance to a combination of heat and corrosion. Aluminised steel Type I has an aluminium-silicon alloy coating weight of about $\frac{1}{2}$ oz. per sq. ft. of sheet, the coating thickness being about 0.001 inch per side. The advantages of Type I are: (i) superior heat resistance and higher heat reflectivity than steel and (ii) higher strength than aluminium sheets with sufficient corrosion resistance for many indoor applications.

In 1954 Armco produced another aluminium-coated steel called Armco aluminised steel Type II. This is produced by the application of pure molten aluminium to cold rolled steel. This grade has a coating weight of about 1 oz. per sq. ft. of sheet and a coating thickness of about 0.002 inch per side.

Type II possesses such qualities as (i) corrosion resistance greatly superior to commercial zinc coatings and equal to solid aluminium, (ii) higher strength than the usual aluminium alloys, (iii) far better heat resistance than steel or galvanised sheet or solid aluminium, and (iv) radiant heat reflectivity higher than that of brass or galvanised steel and equal to that of solid aluminium.

It is ideal for outdoor service. It can be extensively used for corru-

gated roofing, siding, rolling-doors, boiler casings, cabinets, ceiling panels, duct-work, garage doors, furnace casings, smoke-stacks, bus seat backs and partition truck body panels and a variety of other applications.

Aluminising Process

In this process also the first step is to remove the combustible material from the surface of the strip and then to lay a uniform, easily reducible, oxide film. This film is reduced in an atmosphere of dissociated ammonia resulting in an extremely clean strip. It then enters the snout which leads into the bath of molten aluminium. As mentioned earlier, the extreme reactivity of molten alminium results in the formation of complex oxides and nitrides which adhere to the strip as it enters the bath.

In the Sendzimir process these compounds are removed by using a patented technique in which sodium additions are made to the snout zone. The sodium vapour eliminates the scum layer and renders the nitrides and oxides non-adhesive.

From the molten bath the strip comes out through a set of coating rolls. As in the case of zinc coating, there is a strong tendency to form hard, brittle, intermetallic compounds at the interface of steel and aluminium. The presence of these results in the peeling off of the coating when the strip is subjected to forming or drawing operations.

The formation of these compounds can be suppressed by adding an alloying agent to the aluminium bath or by rapidly cooling the strip as it emerges from the aluminium bath.

After coating, the strip is cooled by compressed air directed against it above the coating rolls. The strip continues to move upward and enters the cooling ducts.

The chemical treatment used on aluminium sheets is same as that used on galvanised sheets. The finishing section is similar to that of the galvanising lines.

Because of the extreme reactivity and the corrosion effects of molten aluminium, the coating pot is made of special alloy cast iron. Its life can be effectively increased by using a pre-melt pot to which aluminium pigs are added.

The maintenance of material and labour costs for aluminising are somewhat more than for galvanising. The utilities like ammonia, fuel and power also cost slightly more.

Aluminised sheets require skin rolling to brighten the sheet, smooth the dross spots and flatten the strip. This additional operation increases the production cost of aluminised sheets.

But it is believed that the good corrosion and heat resistance of aluminised steel Type I and the excellent resistance to atmospheric corrosion of aluminised steel Type II will more than offset the cost difference. Expensive painting and repainting necessary to prolong the life of galvanised sheets is not required in the case of Type II.

In advanced countries like the U.S.A. aluminised steel is not as extensively used as galvanised steel because of the availability of zinc in a fair measure. There need be no apprehension as to the demand of aluminised sheets in India. Vigorous sales publicity will ultimately result in customer acceptance of the product. The additional maintenance imports required for aluminising will only be an insignificant part of the foreign exchange savings effected by the elimination of zinc imports.

If it is finally decided to introduce aluminising in our steel plants, a technical know-how agreement will have to be concluded with Armco Steel Corporation for the production of aluminised steel. Armco also stipulates payment of licence fees and royalty on tonnage basis which can be further negotiated.

QUOTATION BOX

The Speaker, Mr S. Chellapandian ruled that members should obtain his permission for exhibiting such objects. "To-day it is *iddli*; tomorrow it may be a bomb. The Assembly is not a market place," he said.

—P.T.I. report from Madras

Socialism does not mean that if you have made a lot of money you can't keep it.

—Mr Krobo Edusei, former Ghana Minister, quoted in "The Observer", London

In fact, I have the greatest regard for India.

—Mr Z.A. Bhutto in an interview with U.N.I.

The experts (from abroad) come with their own cultural bias, which is one of built-in inefficiency: unnecessary elongation of work, elaboration of trivialities, and wasteful use of paper and other resources.

—From an article in "Now"

I always say about contraception that the idea of checking the growth of population in India by means of 'family planning' is like trying to reduce the height of the Himalayas by shovelling away the snow.

—Mr Nirad C. Chaudhuri

The Food Minister at the Centre has got to be a Karma Yogi.

—Mr C. Subramaniam in the Lok Sabha

But look at Delhi. Even the taxis do not form a queue at the stands so one can move with certainty to the first taxi. They huddle together like sheep grazing.

—Mr C.M. Correa in "Seminar" issue on "Our Cities"

The Delhi water supply system has achieved what the ruling party and its government have so far signally failed to accomplish, namely a truly socialistic pattern of society: it fails the Prime Minister and the commoner equally impartially.

—A columnist in "Economic Times"

A model villager is a man who rides in a jeep and climbs t he political ladder through the Parishads and Samitis, not the one who improves his farm yield.

—Mr S.L. Kirloskar, President, Federation of Indian Chambers of Commerce and Industry

The English have a habit of flattering themselves when they praise foreigners. In Vicky's case it was never "how witty he is" or "how funny he is" but always "how well he has imbibed the English sense of humour".

—Cartoonist Abu Abraham

The Dilemma of Uttar Pradesh

Without industrial boost State is doomed to stagnation

J. P. CHATURVEDI

UTTAR PRADESH is the largest State of India in terms of population and easily one of the most backward parts of our backward country. The causes of the backwardness of this premier State are well worth study, especially in the context of our present agricultural crisis. We are assisted in this task by three timely publications. The foremost is the *Techno-Economic Survey of Uttar Pradesh* published by the National Council of Applied Economic Research, and the other two are *Land Reforms in Uttar Pradesh* sponsored by the Research Programme Committee of the Planning Commission, and *Industrial Programmes in Uttar Pradesh during the Fourth Plan* published by the Directorate of Industries, Uttar Pradesh. While examining the land policy of Uttar Pradesh, we are also helped by *A Study on Tenurial Conditions in Package Districts* by Wolf Ladejinsky, Consultant to the Ford Foundation, published by the Planning Commission. One of the districts in the Package Plan is Aligarh, and Mr Ladejinsky's observations on the district have a bearing on the problems of Uttar Pradesh as a whole.

In the present context, I am also aware of the statement of Dr K.L. Rao, Minister for Irrigation and Power, made in a Press conference last month wherein he said that if proper irrigation facilities were given to the States of Uttar Pradesh and Madhya Pradesh, the entire wheat deficit of India would be wiped off. He further said that in the whole country, only Ganga and Narmada valleys were ideally situated for tube-well operations.

About the past importance and present condition of Uttar Pradesh, Dr. P.S. Lokanathan has written eloquently in the *Techno-Economic Survey*. He refers to the pronounced impact of Uttar Pradesh on the country's affairs throughout history, of the holy cities of Hinduism, Buddhism and Islam. He refers to the contribution of Uttar Pradesh during the freedom struggle and after, and traces the preponderant influence to the size and strategic position of the State.

"Yet," Dr Lokanathan says, "it is a cruel fact that Uttar Pradesh today is one of the poorest States in India. In essence, this State reflects all the problems of underdevelopment in the country in an acute form. The bulk of the State's large population is concentrated in the plains which, despite the perennial rivers, the famous fertile Gangetic soil and the country's oldest irrigation system, yield pitiably little and reduce the economy to a bare subsistence level. Consequently, the problems of unemployment and underemployment are severe throughout the State and most acute in the proverbially backward regions in its eastern parts...Absence of any large-scale deposits of basic minerals has been in a way responsible for the lacuna in industrial development in the State. The planned development initiated since 1951 should have contributed to alleviate some of the economic problems but the relatively smaller outlays and the lack of a co-ordinated approach in its implementation are responsible for the very slow pace of progress."

But Dr Lokanathan is not pessimistic about the future. He wants a "critical assessment of the problems that retard the progress of economy today, both spatially and structurally" so that full exploitation of the favourable factors of development can be attempted. The present reports are preliminary steps in examining the potentialities and problems of Uttar Pradesh. But not only does their emphasis differ; even the facts and figures on which they are based are different. For example, according to the *Techno-Economic Survey*, the per capita income of Uttar Pradesh stood at Rs 297 in 1960-61, about 11 per cent lower than the all-India average. But, according to the Uttar Pradesh Government's *Industrial Programme*, it is not likely to exceed Rs 255 even by 1965-66. According to this publication, compared to the national average growth rate of 3.5 per cent over the three Plan periods, the growth in Uttar Pradesh has been only 3 per cent per year. "If a large area of the country," the publication goes on to say, "with nearly 17 per cent of the total national population continues to remain as underdeveloped as Uttar Pradesh is at present, it is bound to have serious repercussions on the overall growth of national economy."

It is in fact from this point of view that the country is worried. We have to be still more worried, because the latest turn of events seems to have blocked the way of industrial development of the State. In the current year's budget of Uttar Pradesh, presented on February 14, out of a total expenditure of Rs 292.05 crore, only Rs 6.21 crore have been provided for the industries. Looking at the huge sums proposed in both the reports, the current budget proposals disclose a large gap between the need and the policies of the Government.

POOR INDUSTRIAL DEVELOPMENT

The *Techno-Economic Survey* has said that the industrial sector is very poorly developed and contributes hardly 8 per cent to the State's income as compared to 40 per cent in all India. Even within this underdeveloped sector, nearly 70 per cent of employment is in traditional household crafts, contributing just 23 per cent of the industrial income. Among the organised industries, only those based on agriculture, such as cotton textiles and sugar, are worth any mention.

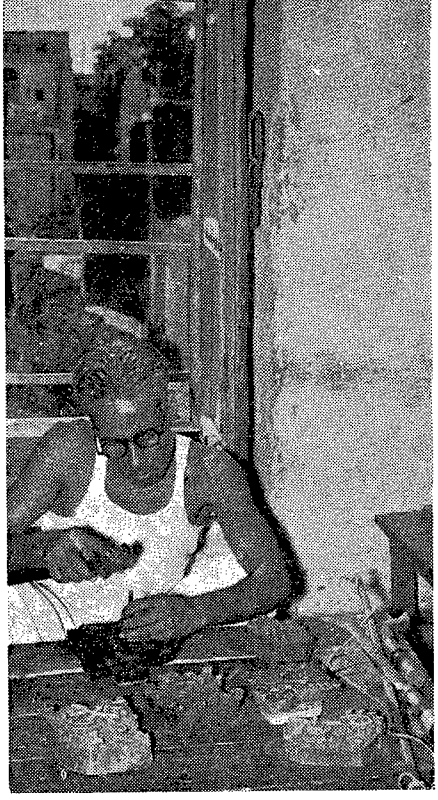
The First Five-Year Plan made no provision for industrial development in the State. In the ten years from 1951 to 1961, as much as 44 per cent of the State's total outlay of Rs 283 crore was spent on agricultural development. But the economic growth achieved by U.P. over these ten years was only 24 per cent, compared to 43 per cent for all India. In case it might be argued that U.P. needs to give, for this very reason, more attention to agriculture than to industry, the State Government's report on industrial programmes says :

"Agricultural development in itself cannot provide the entire answer. With agriculture contributing around 60 per cent of the total income—as at present—there would have to be an annual increase of over 10 per cent in agricultural output if the growth of income is to be essentially dependent on this sector alone. Clearly, this is not feasible. In fact, it has been accepted that even a rate of growth of 5 per cent per annum in agricultural production is a considerable achievement....

"If the total State income is to be increased from Rs 2,043 crore in 1965-66 to a minimum of Rs 2,840 crore in 1970-71, at an annual rate of growth of 7 per cent, there would still be a gap of around Rs 200 crore after allowing for the possible contributions by the development of agriculture, transport and communications and other services. This then will have to be covered by the development of the industrial sector."

And the programme, therefore, proposes that investment of Rs 600 crore should be incurred in the Fourth Plan period. This is not unreasonable considering the area and population of the State and the need for an accelerated rate of industrial growth in this area.

The contribution of agriculture to total income is 43 per cent for the country as a whole; in Uttar Pradesh it is 60 per cent. The State has a population of 73.7 million which is 16.8 per cent of the national population. Its land is very fertile and climatic conditions are favourable for agriculture. But one would be pardoned if one said that the very fertility of the soil has been the cause of the decline of U.P. Because of fertility and favourable climate it is one of the most populated areas in the country. Because of the deep alluvial stratum which it has inherited from the great Himalayas, this region has very few minerals, and this has retarded its industrial development.



In the very poorly developed industrial sector of U.P. 70 per cent employees are in traditional household crafts. A craftsman is seen here carving wood-blocks for printing on sarees.

How high the pressure of population on land is will be clear when we see that while the density all over India is 373 persons per square mile, it is 649 persons per square mile in Uttar Pradesh. The comparable figures for other States are : Madhya Pradesh 189, Rajasthan 153, Punjab 430, and Bihar 691. Day in and day out, many remarks are flung on the comparative backwardness of this region, but it is forgotten that it is the direct result of its geography and history.

The backwardness of some districts in comparison with the rest of the State poses a further problem. Per capita incomes in the districts of Tehri Garhwal in the north-west and Deoria in the north-east are even below Rs 100 per annum. The entire eastern region, the Bundelkhand region and the Himalayan districts are in a very acute state of underdevelopment and the people who inhabit these regions are probably the poorest in India.

FEW TOWNS IN A BIG STATE

While in the country as a whole, 74 per cent people live in villages, in Uttar Pradesh 84 per cent of the population does so. Out of 1,12,315 villages in Uttar Pradesh, 69,682 villages have less than 500 inhabitants and 20 per cent of the total population lives in these villages. For such a big State, the number of towns is surprisingly small. On the country, a town serves the needs of 85 villages. In Uttar Pradesh a town has to serve the needs of 192 villages. This predominantly rural picture of Uttar Pradesh poses many different problems—the problems of communications, education, health and food procurement.

Historically, the region is noted for its great cities. Hardwar, Mathura, Allahabad, Banaras and Ayodhya developed into great cities before

other parts of India could boast of cities. Mathura and Banaras were for long centres of international trade and commerce. Again, Hastinapur, Kanpur, Kaushambi, Agra, Lucknow, Jaunpur and Sravasti developed as capitals of important dynasties and ruling families. The art and architecture, construction and sculpture, manufacture of cotton and silk fabrics, gold and silver ornaments, metalware and brassware of Uttar Pradesh influenced the entire cultural and economic pattern of India. Trade and industry have been in the blood of the people of Uttar Pradesh. It is wrong to think that the people of the State are static, stuck to their land. In fact we find the industries of Bombay, Howrah and Asansol, the tea plantations of Darjeeling and Assam, developed by the efforts of migratory labour population from East Uttar Pradesh. People from this area went as far east as Fiji and as far west as British Guiana in South America and developed agriculture there. If, still, this area has remained backward, it is necessary to find out what is the main malady.

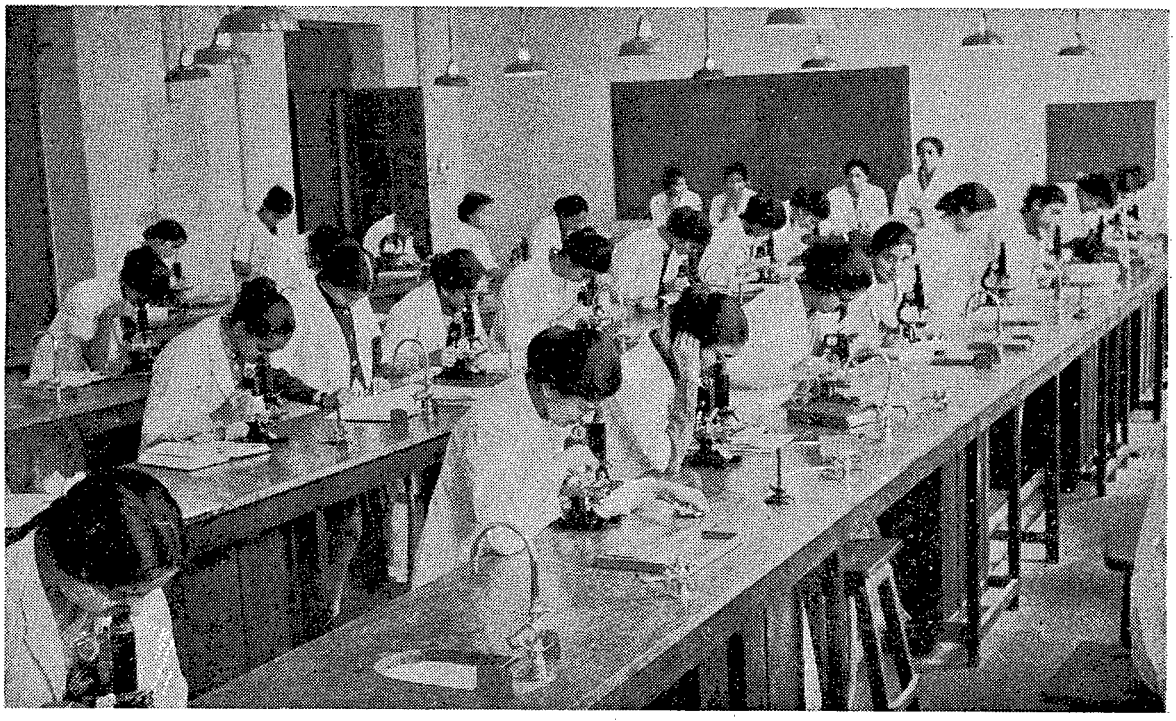
Several points of view have been put forward. Professor Humayun Kabir, delivering the convocation address of Lucknow University, said that English came to Uttar Pradesh at a very late stage and Uttar Pradesh was the first State to discard it, with the result that Uttar Pradesh was cut off from the modern and scientific thought and consequently became the most backward State industrially. Mr Asoka Mehta told a convocation of the same university: "Your region nurtured the ageless culture of our ancient land. To preserve it against varied onslaughts in the past and to give it a depth of appeal, the claim was developed of this culture being changeless eternal, *sanatan*. Science and sanatanism cannot exist on the same plane of operation." He further went on to say that Uttar Pradesh was situated in the heartland of India and it became insulated from the new winds that blew across the seas which reached the ports, but in deep hinterland, their force got subdued. The three Presidency centres which were port towns became cities of commerce, industry and changing culture. In the emergence of modern India, a distinction grew up between the heartland which was generally insulated from the changes and the rimlands that were exposed to the western influence. British colonialists reduced Uttar Pradesh to a region of low literacy, low urbanisation, poor industrialisation with a heavy burden of population.

The themes of both Mr Asoka Mehta and Professor Humayun Kabir have a common bias. Both of them seem to believe—and I shall be frank and admit that they have a large number of supporters—that the sanatanist and religious outlook of the people of Uttar Pradesh has divorced them from modern knowledge and scientific development thus blocking their progress. Although not so directly, Dr Lokanathan, Director-General of the National Council of Applied Economic Research, also seems to suggest this when he says: "There are many non-economic factors which are equally important for the promotion of growth. Administrative efficiency, institutional arrangements and the social outlook of the people are a few of such factors. Uttar Pradesh will have to pay adequate attention to them."

(*Continued on Page 26*)

Agriculture contributes 60 per cent of U.P.'s income. Barcha farmers are seen harvesting.

"LADY HARDINGE" IS FIFTY



Students in the Histology Laboratory

A 200-bed children's hospital staffed by 45 doctors and nurses is one of the recent worthy additions to this all-women's medical college and hospital in Delhi.

USHA CHETTUR

IN February 1916, when the first Medical College and Hospital in India meant exclusively for women and staffed by women, was formally opened by Lord Hardinge, the then Viceroy, the student rolls of the institution boasted a mere 10 brave "freshers". Today, fifty years later, the total number of undergraduates is 500, and there are 46 students doing post-graduate courses. The College was affiliated to the Punjab University and every examination entailed a journey up to Lahore. Now it is affiliated to the Delhi University and the original seven-year M.B.B.S. course has been reduced to four and a half years with a compulsory internship of one year including three months in the rural areas.

These changes are indeed notable in the fifty-year-old record. But in one respect the institution remains completely unchanged. "Lady Hardinge" is still an exclusively women's institution with the exception of a few male members on the teaching staff.

In the present age where any move towards discriminating between sexes is regarded as highly suspect, the existence and apparent thriving of a purely women's medical institution seems almost a paradox.

Lady Hardinge, the prime mover and indeed the motive force behind the establishment of a women's Medical College, became aware, as did the other pioneers of Indian medicine, of the innate shyness in the majority of Indian women of those days and total lack of facilities for women's medical education. A majority of the women would rather die than expose themselves to examination by male doctors. The only answer to this was to encourage women to take to the medical profession.

Medicine as a profession was regarded as far from suitable for girls. The only solution would be to open an institution which would not break away from tradition too harshly and, at the same time, would serve its cause. Thus was conceived the idea of a residential college and hospital for women, staffed entirely by women doctors. Lady Hardinge

then set about collecting funds for this college.

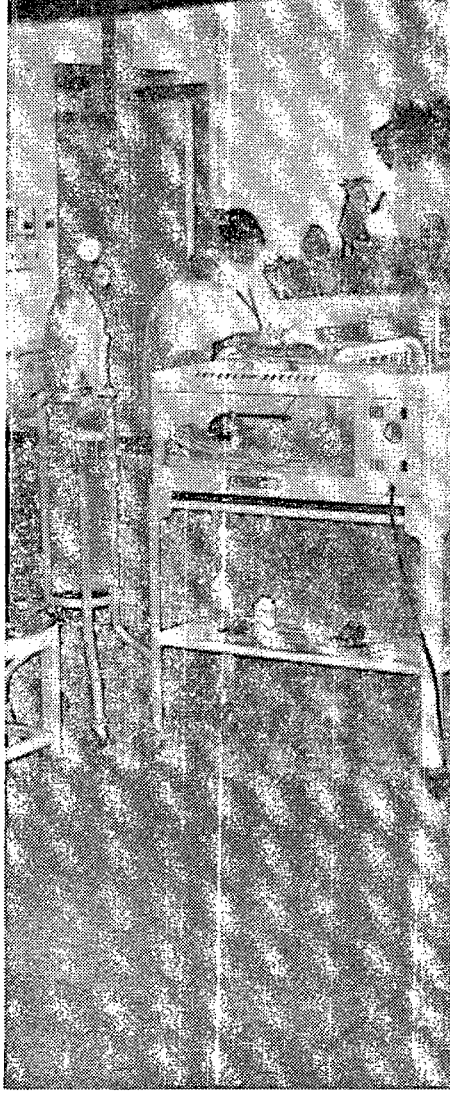
A sum of thirty lakh rupees was collected as donations from several ruling princes. The Countess of Dufferin Funds and the All India Women's Medical Services were closely connected with the scheme. The foundation stone was laid by Lady Hardinge on March 17, 1914, but she died the same year and the college and hospital were later named after her, as suggested by Queen Mary.

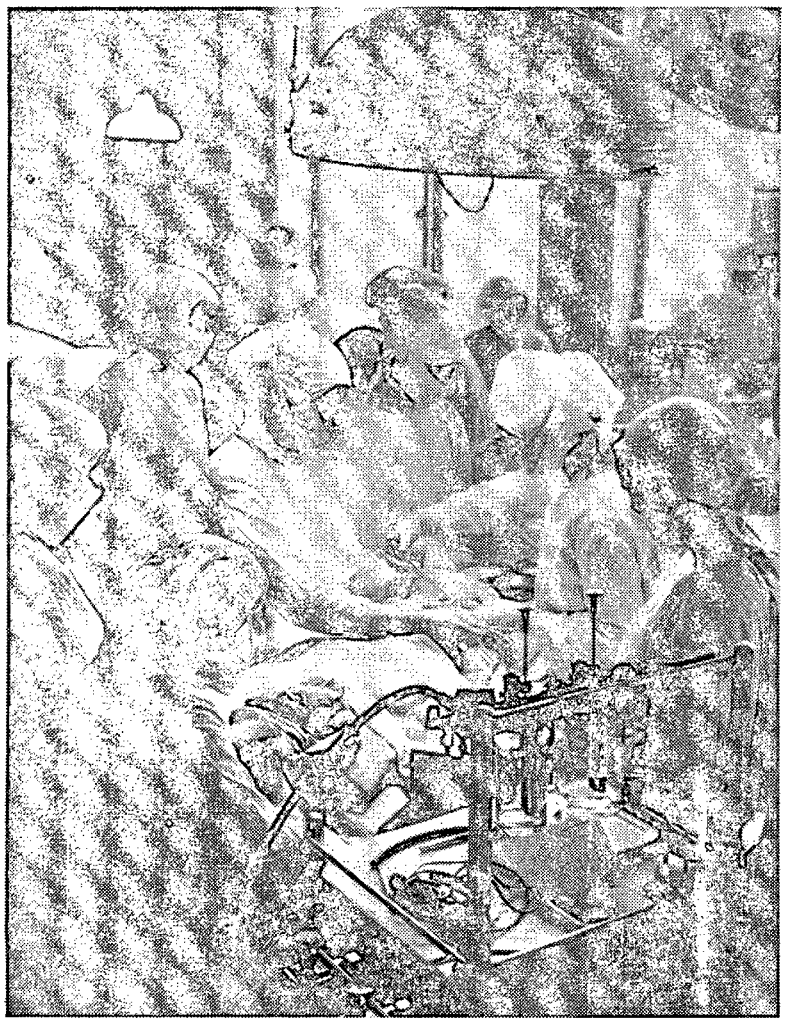
Exclusiveness

The exclusively "women's" nature remains today a zealously guarded feature of this fifty-year-old institution. During the past decade the College has not been without its critics. "How can women doctors nurtured in the cloistered atmosphere of an all-women's college, attached to a hospital taking in only women patients, possibly make good in a world where illness is not the prerogative of women?" they argue. Of course, one can take to specialisation of women's diseases, but is it feasible to produce hundreds of doctors annually—all confined to a narrow field of specialisation? What about the woman doctor, and her marriage?

The Principal had an emphatic reply to the criticisms: "Our college has passed through a series of crises of late. Everyone seems keen to change its 'all-women' character. Our students are not isolated from contact with male patients, for we have 100 beds for two teaching units at Willingdon Hospital where our students are sent for training and experience in treating male patients.

"A number of Hardinge girls have gained distinctions in various specialities in India and abroad. Hardonians have obtained M.D., M.S., F.R.C.P. (London and Edinburgh), M.R.C.O.G., M.P.H. (U.S.A.), D.R.D. (London), F.R.C.S. (England and Edinburgh), M.R.C.P. (London and Edinburgh) and have also earned international recognition in research. And as for marriage—well, to give an example, 70 per cent of the teaching staff of this institution consists of married women. After intensive training in medicine one becomes wedded first to the profession, you know!"





The Present Students

The students who choose 'Lady Hardinge' in preference to other co-educational colleges, do so not entirely because of the orthodox set-up. They are drawn to it more by its excellent training facilities and reputation. Indeed the present students represent a fair cross-section of the various communities and States of the country, as was the case even in its early years. Far from being meek and subdued in spirit, the students have played a useful role in times of national calamities, for

instance the Quetta earthquake in 1935, the Bengal Famine, the 1947 communal riots, and the devastating floods at Najafgarh, Delhi.

Academically too, they continue to show remarkable performances; in the last two years Hardinge students stood first at the final examination of the University.

Research

The College has built up an impressive research section. In the early years it was owing to the efforts of some women doctors of 'Lady Hardinge' that research work on *Osteomalacia*, which used to be one of the most common diseases among women, was carried out. Original work on anaemia and studies on protein malnutrition and vitamin B-12 deficiency are among the research contributions of the institution. Research schemes are now undertaken in most of the clinical and non-clinical departments.

Children's Hospital

An interesting development has been the children's hospital named the "Kalawati Saran Children's Hospital". The medical services here as in the rest of the hospital are completely free. Housed on two storeys, the hospital consists of 200 beds. The children, who look so happy in their various wards, are looked after by a team of 45 specially trained doctors and nurses.

New-born baby in incubator in the Kalawati Saran Children's Hospital. Left: Students watch a surgical operation.

A new training centre and a hostel for nurses were completed in 1964 under the Third Plan, at a cost of about 17 lakh rupees. Two hundred nurses are under training now.

Developments

In order to keep pace with the rapid development of the college in other spheres, hospital services have been increased much. The various departments now have a bed-strength of 567. There are special clinics for ante-natal and post-natal cases. A well-developed family planning clinic has been established; special departments for pediatrics and orthopaedic cases, and dental, venereology, thyroid and club foot clinics are in operation. Besides these facilities, a Blood Bank and a Social Service Department were instituted recently.

Fifty years are enough to prove the worth of an institution. Lady Hardinge Medical College has indeed outgrown the initial purpose which its founder envisaged for it. In March 1966 when some of the early principals and staff arrive for the Golden Jubilee celebrations, it is likely that they may find it difficult to recognise their 'old' institution.

"The Decisive Moment"

The camera is not often present at the moment of life or death. This telling picture of a rescue at Worli Beach, Bombay, won a prize for photographer Sule.

OVER AIR TO PAPER

LIKE the big and small among newspapers there is now a possibility of big and small among news agencies also. The Enquiry Committee on Small Newspapers, in its report placed before Parliament, has made a very welcome suggestion. It says that an Indian news agency should be entrusted by Government with the task of preparing a 1500-word news bulletin and news feature to be broadcast by All India Radio twice or three times daily. The material, according to the Committee, could be prepared in English by the Delhi office of the agency concerned and given to AIR, Delhi. The bulletin could be translated into Hindi and other Indian languages and broadcast at dictation speed at fixed hours from Delhi and various regional stations.

The Committee has done well to make this suggestion. It will only be giving a systematic shape to a practice to which the small newspapers have long been habituated. A similar suggestion was made by the Press Commission some twelve years ago. In several other countries like Afghanistan and China, the broadcasting of bulletins for newspapers at dictation speed has been in vogue. It is true that we have big news agencies of long standing like the P.T.I. and comparative newcomers like the U.N.I. which are among the major recorders of the national scene with large networks of correspondents, reporters and stringers. But the small papers with limited means find the services of these news agencies expensive. Those who have worked on such small papers know the strain they undergo in getting the day's news from radio news bulletins. It is only proper for the radio to help the small-newspaperman by broadcasting separate news bulletins for him as they do weather bulletins for mountain climbers and ships and market reports for businessmen.

The Committee's definition of a small newspaper is that such a daily should not have more than 20,000 circulation and Rs 12.5 lakh revenue and magazines should not have more than 15,000 circulation and Rs 5 lakh revenue. This definition is reviewable after five years. Among dailies, small newspapers constitute 87 per cent but have only a third of the total circulation.

Isotopes

TWO books that came our way recently are on two different subjects which are poles apart—a catalogue of radio isotopes and a handbook on cotton textiles. One is issued by India's Atomic Energy Establishment at Trombay and the other by the Cotton Textile Export Promotion Council, Bombay.

The very mention of Atomic Energy Establishment evokes feelings of pride in every Indian although, of late, a sense of bereavement too in the loss of Dr Bhabha. As in everything that the Establishment has done, even a very routine bit of work like the publication of a catalogue containing details of the radioisotopes available from the Establishment has in it the extraordinary and rare Bhabha mark of excellence. Printed on art paper the catalogue is a neatly tacked collection of loose sheets containing tables of technical details of 53 radioisotopes including the well-known ones like Cobalt-60, Carbon-14 and Iodine-131.

The cover designed by the National Design Institute of Ahmedabad carries a lovely picture of the mechanical hands handling a radioactive material in a glass case.

It is amusing to know what parent, daughter and half-life mean in atomic vocabulary. 'Parent' means a nuclide that undergoes decay into another nuclide, the 'daughter'. 'Half-life' does not mean half the life-time of an atom but the time required for the decay of one half of the atoms of a radioisotope.

...and Cotton

If the science of isotopes came to India from the West, the science of making cloth from cotton, according to the Handbook of the Indian Cotton Textile Industry, was a gift of India to other countries. The Indus valley people wore cotton clothes. The famous Greek historian, Herodotus, in the oldest reference to cotton in European literature, gives an index of ignorance that prevailed then in Europe regarding cotton textiles. He says, "Certain world trees that bear wool instead of fruit, which in beauty and quality, excels that of sheep and Indians make their clothes from these trees." The medieval Arabs took the art of making garments from India and coined the word 'Quattan' which gave birth to the English word 'cotton'.

As terylene, a western artificial product, has now become a status symbol in India, Indian cotton textiles were a status symbol in the leading kingdoms of the West of yore. Even now Indian cloth, especially of handloom, is admired in the West. Next to tea and jute, cotton is India's largest exporting industry, earning Rs 60 crore worth of foreign exchange. The textile industry is the largest organised industry in India and employs a million hands. No wonder that the country has become the second largest cotton textile producer and exporter in the world.

Indian textiles are exported to more than 100 markets all over the world. Ready-made garments form a sizable chunk of the exports. In about five years the exports of apparel have grown from Rs 14 lakh to more than Rs 218 lakh in the first eight months of 1965.

IGNORAMAN

Wants to Know

If with more RICE
there will be
less RISE
in Bengal

Books

Problems of Indian Economy

Studies in Economic Problems. General Editor S. K. Basu. Asia Publishing House, Bombay. · 256 pages. Rs 28.

Narindar Singh

THE book is a collection of nineteen research papers prepared by the Research Wing of the Department of Economics, University of Calcutta. The studies were made way back in 1959-61, but have just been published in book form. Although the papers seek to analyse some of the problems of the Indian economy, the delay in publication does not render them very much out of date. This is because the papers are mostly concerned with problems of economic growth and raise questions that are primarily of theoretical and not topical intrest. The problems range from increased agricultural taxation as a source of development finance to the payments difficulties of a developing economy. These issues are as live and worthy of attention today as they ever were.

Some of the papers in the collection like those on Indian tea exports, international regulation of tea exports and loss-limitation of agricultural investment are of interest to those specialising in the respective fields. But there are others like 'A Case for Higher Land Tax in India', 'Some Problems of Public Industrial Enterprises in India' and 'Foreign Exchange Difficulties of a Developing Country' which are likely to command a relatively wide audience.

The author of 'A Case for Higher Land Tax in India' rightly argues that in their pursuit of greater resources for economic development, the fiscal authorities in India cannot leave aside the agricultural sector. But I do not see how the case gets strengthened by his reference to "our mixed economy with a relatively fast growing public sector". As a matter of fact, the agricultural sector would have to be "exploited" for any kind of industrialisation programme. The word in quotes has to be interpreted rather broadly, in so far as agriculture also enjoys the feed-back effects of successful industrialisation and experiences growth in an absolute sense. But in a relative sense, agriculture cannot help suffering a decline over the decades during which a country gets transformed from a predominantly agricultural to a predominantly industrial economy. In the process, agriculture does provide the resources for economic development. It is immaterial whether such development takes place on capitalist, socialist or a mixed pattern. Not one major country has gone through the process of successful industrialisation without making its agricultural sector foot a significant part of the bill.

It would appear logical, therefore, to insist on a higher land tax in India also. But the question is not purely an academic one. There are thoroughly entrenched political interests that would, in the given circumstances, successfully resist any effort to raise agricultural taxation to any appreciable extent. Little wonder that no more than 14 per cent of increased income in the agricultural sector has been taxed away. But apart from such political forces that impede heavier agricultural taxation, the failure of agriculture to 'foot the bill' of industrialisation in this country is due largely to the agricultural revolution not having materialised so far. It does not matter whether this revolution *precedes* the industrial revolution as it did in Britain or *accompanies* it as it did in Japan. But it does matter that the revolution should occur. And only a brave person can assert that Indian agriculture is soaring high on the wings of a revolution. It is not. The problem of "exploiting" the agricultural sector, therefore, is essentially one of bringing the agrarian revolution into being and not of taxing a sluggish sector more heavily.

It will be readily accepted that our dismal failure on the agricultural front is one of the important factors contributing to our foreign exchange difficulties, and those of many other developing economies. These difficulties form the subject matter of one of the papers included in the collection under review. The thesis, which by now has become part of the development folklore, is offered that the exports of developing countries to developed countries do not have very bright prospects while commodity movement in the reverse direction is bound to be very pronounced for long years to come.

It would obviously be a hard undertaking to review material concerned with such diverse and unconnected problems as those included in the present collection. But it may safely be remarked that the book will find a place in the libraries of research institutes and centres of advanced learning. It has hardly any popular appeal; nor probably was it prepared with that end in view.

A KEYNESIAN STUDY

Keynesian Economics by R. D. Gupta and P. N. Chopra. S. Nagin and Co. Jullundur City. 487 pages Rs 11.

A.V.R. Char

The deep impress left by Keynes's New Economics on economists a well as policy makers is well known. Despite the fact that he took a controversial stand on many issues Keynes was an influential economist. This could be seen from the fact that so much is written about Keynesian economics since the publication of "The General Theory", incorporating many refinements, modifications and extensions.

"Keynesian Economics" is a welcome addition to the series on

this subject. It is a book which is meant primarily for university students of degree and honours classes. The authors have not limited their efforts to merely paraphrasing the basic concepts of Keynes; they have elaborated the Keynesian Economics and incorporated recent thinking on the subject. Their style is lucid and the presentation is cleverly managed. The exposition proceeds step by step and is supported by suitable diagrams and charts. There are a few repetitions, but one should not forget that the book is meant for students.

The book is divided into five parts. Part I deals mainly with Keynesian Economics. The first chapter covers the life and writings of Keynes. Chapters 2 to 5 broadly introduce the Keynesian ideas, concepts and vocabulary to the readers. Chapters 6 to 7 deal with Keynes's attack on classical economics. The chapter on money, wages and employment further examines the classical argument and their assumptions regarding a general wage cut and Keynes's objection to the assumed relationship between unemployment and wage cuts. This leads to the concept of effective demand, its importance in economic analysis, the main determinants of effective demand, the relationship between aggregate demand function and aggregate supply function. The relationship between consumption and income, the distinction between average propensity and marginal propensity to consume, factors affecting consumption, types of multipliers such as employment multiplier, foreign trade multiplier etc. are dealt with in Chapters 10, 11 and 12. Part I concludes with a chapter on the principle of acceleration.

Part II deals with the theory of money and price, whereas Part III deals with the theory of banking. Part IV covers the problem of employment, and the various measures—monetary, fiscal and others to provide employment. The final chapter examines whether or not Keynes's theory is applicable in underdeveloped countries and the authors have come to the right conclusion that "the theory as a whole may be inapplicable, but its tools taken separately are of great use in analysing and solving the problems of underdeveloped economies, and as these economies are becoming more developed, they afford greater chances of Keynesian application".

The authors could have provided suitable illustrations from Indian economic life. While dealing with national income estimation in underdeveloped countries, the authors have enumerated the difficulties involved and have said "recourse has to be made therefore to mixed method". They could have clearly indicated the method adopted in India. Again, while giving the definition of per capita income, they could have given the actual figures for any year for which estimates are available. Similarly, they could have indicated the constituents of money supply in India.

Notwithstanding these, the book has many interesting features. It contains extracts from syllabi of different universities. At the end of each chapter the main ideas covered in the chapter as well as suitable questions are indicated.

On the whole, students will find this book useful.

Fisheries in India

Fisheries in Indian Economy by S. N. Bhattacharya. Metropolitan Book Company, Delhi. 98 pages. Rs 6.

Ashish Biswas

MR BHATTACHARYA has dealt effectively with the state of fisheries in India. In other countries fisheries are an important part of the economy. Not so in India. "Our national income through fisheries," to quote Mr. Bhattacharya, "is only Rs 60 crore per annum. This could very easily be doubled, if not trebled, with bold planning and speedy implementation..." Again, "We produce 9 per cent of the total supply of fish in Asia, compared to Japan's contribution of 43 per cent." Such facts speak for themselves. A considerable foreign exchange earner is certainly not getting its due share of attention from either the planners or the administrators.

Bengal offers the largest scope for the industry, although it has a sorry tale to tell, and Mr Bhattacharya understandably dwells on the problems of the State. As usual, it is again the men in authority that are at fault. The methods of catching and distribution of fish are by international standards primitive. The "aaratdars" are only concerned with getting the highest bids, not about improving the resources.

A shift in the popular taste, particularly in Bengal, could be very helpful—from sweet water fish to other varieties of the 'funny prey'. The Sunderbans, after proper development, might prove to be the paradise for Tilapia. The hilly areas in North Bengal could be equally suitable for the mirror carp. In Calcutta alone, the daily requirement of fish amounts to 8,000 maunds, a third of which used to come from East Pakistan. It is a sad commentary that the West Bengal Government, spending lakhs of rupees on a bid to improve its seafishing, did nothing much to improve inland water resources. Not that there is any mechanical handicap. Mr P.B. Ziener, an expert of the F.A.O., declared after a survey that "some of the types of fishing boats in West Bengal are among the best in India. The fishing ability of these boats can be substantially increased if they are mechanised".

Since the book was written, the Central Government has decided to give the go-ahead signal to the Farakka Project and also to develop the Sunderbans. They promise bigger things to the industry.

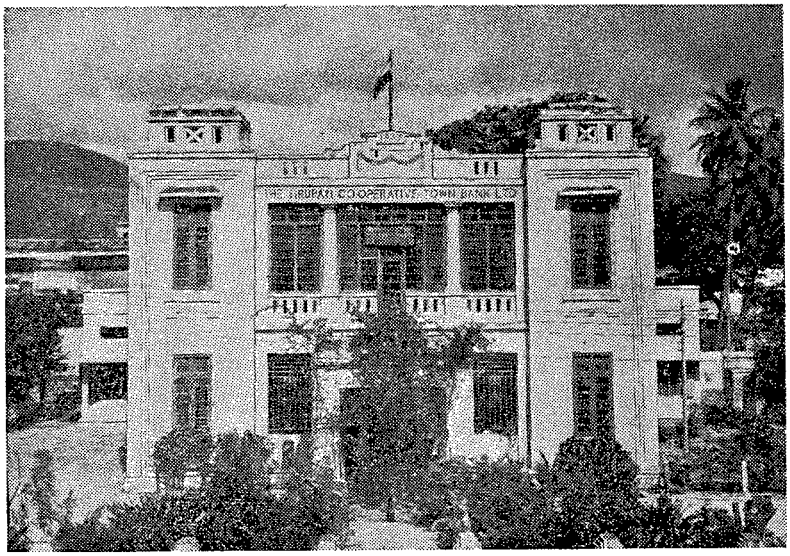
It is unquestionable that a 'Grow More Fish' campaign needs to be launched on a countrywide level. If Gujarat (through the co-operative system), Kerala or Orissa could do it, why not Bengal, which potentially can meet not only its own demand but that of other States and countries abroad?

A stimulating book, and happily not Greek to the layman. Those who control the administrative switchboard should see it.

CO-OP BANK IN TEMPLE TOWN

Chases Moneylenders Away

It Has Taken No Loans from Government or Central Bank and Is



WHOLLY SELF-RELIANT

V. Ranga Rao

VERY few know it: Tirupati, famous for its Sri Venkateswara temple, has the biggest co-operative town bank in Andhra Pradesh.

Its special feature is that it is self-sustaining. It has not taken loans either from the Government or from the District Co-operative Central Bank. On the other hand it has helped the Central Bank by investing its surplus funds. Overdues of loans outstanding against members are as low as 3.5 per cent.

The bank has pioneered various schemes to inculcate the habit of thrift and the co-operative way of life among its members. It serves about 40,000 people, 80 per cent of the town's population.

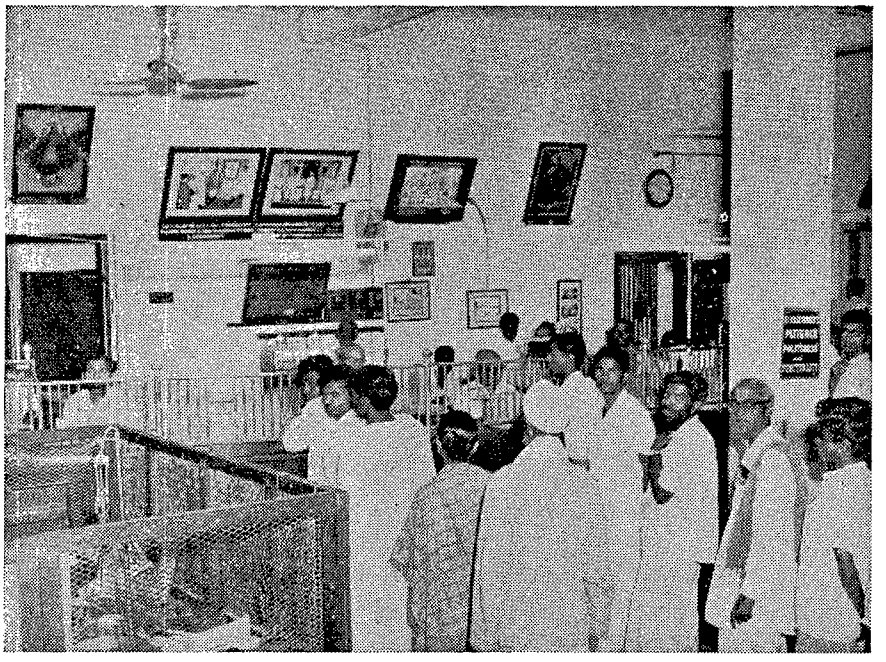
A town of 10,000 population in 1918, Tirupati felt the need for a co-operative bank to cater for the people who had meagre incomes earned mostly from '*dalali*' and from the sale of toys and human hair to pilgrims. The Tirupati Co-operative Town Bank Ltd. was formed in that year with 91 members and a paid-up share capital of Rs 3,024. It was housed in a small rented building. It had only a small iron-chest which it got as a gift. A sum of Rs 320 was collected as deposit. By the end of the year the bank had earned a net profit of Rs 75.

In 48 years it has become the biggest co-operative town bank in Andhra Pradesh. There were 8,135 'A' class members and 5,294 'B' class members last year. And in 1964-65 a net profit of Rs 1,27,563 was earned. The paid-up share capital has gone up to Rs 10,00,272 against an authorised share capital of Rs 10,10,000. The total amount of loans paid to members as on December 31, 1965, was Rs 48,13,453. The working capital exceeds Rs 60 lakh.

For several years the *Nattukotichetti* moneylenders were the chief sources of credit to the poor and middle classes of the town. They used to levy very high interest. The town bank, beginning its credit operations in 1918, had become so popular within a couple of years that the *Nattukotichetti* moneylenders had to wind up their business and leave the town for good. In spite of Tirupati growing in all directions in the past few decades, commercial banks could not get any chance to open branches till late in the fifties as the Town Bank was able to meet the needs of the population.

A visitor to Tirupati cannot miss the bank's imposing building in the heart of the town. Its main feature is a fire-proof, concrete, strong-room fitted with a steel door and grill gate. The building is now valued at Rs 2 lakh.

From its inception the bank has been managed by an elected board. The elections of the board of direc-



Queues inside the Tirupati Town Bank

tors are held by secret ballot. Usually about 60 per cent of the members vote. The polls have always been conducted with great decorum.

The board meets every fortnight. Some of the board directors have been continuously elected for the past few decades. The president devotes a number of hours to attending to the various aspects of the banking business. None of the directors have so far absented from any four consecutive meetings and have ever taken any loan. The board members know all the ordinary members and closely associate with them.

The ordinary members have established a good record of active participation in the bank's work. Not only do they repay the instalments of loans in time and deposit their savings in the bank but they evince constructive interest in the bank's meetings and elections.

June 30 of every year is the deadline for payment of all arrears. All the office-bearers and employees hold a campaign to meet the borrowers in person and persuade them to pay their arrears before that date. More members in fact do not wait to be reminded.

The bank was a pioneer in introducing the daily loans and day deposits schemes in 1926 which has now been adopted by many banks. These schemes help small traders and wage-earners to take loans from the bank repayable in daily instalments and also enable them to deposit their daily savings. The bank has since appointed three bill collectors to collect these amounts from the depositors at their shops or work-spots. The response has been so encouraging that the schemes have attracted more than 300 contributors. Their total day deposits amounted to Rs 75,151 by December 31 last year.

The Rupee Branch

The bank has also started a "RUPEE BRANCH" on the model of the "Penny Banks" of England on the initiative of Mr. K. Subramanyam Naidu, former Registrar of Co-operative Societies. There are two such branches, one at the S.V. Arts College and the other at the S.P.W. College. There has been excellent response from students. Their deposits amounted to Rs 11,172 on the last day of 1965. Parents have taken to sending all moneys to their children by cheque or draft on this bank.

The bank has more than 50 employees. The entire staff is trained. Every year one of its employees is deputed for training and is offered a scholarship. A sub-registrar of the Co-operative Department works as the Bank's secretary. The employees are happy with the conditions of work. They also get an annual bonus equal to two months' pay and scholarships for the education of their children. The bank has raised the pay scales of its employees from time to time taking note of the increase in cost of living.

The bank has a library and a reading room financed from its Common Good Fund. Members as well as non-members make extensive use of the reading facilities.

In recent days the bank has begun to face several problems. Till a few years ago all the funds of local bodies like the Municipality, the Tirumala Tirupati Devasthanams, the *mutts*, the Sri Venkateswara University, and educational institutions used to be deposited in this Bank. But with some commercial banks opening their branches here, some of these funds have been diverted. It is only proper for the Government to permit these local bodies to invest their funds in the Co-operative Town Bank in pursuance of the recommendations made by the study group on credit co-operatives in the non-agricultural sector in December 1963.

Mr P. Radhapathi who had served as honorary secretary of the bank for 22 years from 1921 and then as president for another 22 years till 1965 has a few interesting suggestions to make. He says that the Government should make specific provisions in co-operative acts for the development of urban banks because the existing provisions are inconsistent with the developed banking structure. According to him one third of the directors of the managing boards of these banks should retire once in three years and elections should be conducted to fill them. A third suggestion is that section 60 (1) of the C.P.C. should be relaxed so that salaries of employees who get more than Rs 100 a month may be attached in the case of decrees obtained by co-operatives. The present limit is Rs 200. Otherwise co-operatives will be forced to deny loan to employees drawing less than Rs 200 a month.

Rs 2,081 CRORE for PLAN in 1966-7

Union Budget Has New Taxes to Collect Rs 101 Crore, Offers Spurs to Production

DUTY UPON SUGAR, TOBACCO, YARN: Rs 797 CRORE FOR DEFENCE

EXPENDITURE on development activities will go up by Rs 2,081 crore in 1966-67, the first year of the Fourth Plan.

This was one of the main features of the Budget of the Union Government presented by the Finance Minister, Mr Sachin Chaudhuri, on February 28.

Mr. Chaudhuri announced a series of taxation proposals calculated to spur industrial production and to narrow the overall deficit to manageable size.

By way of concessions he abolished the expenditure tax, did away with tax on bonus issue, raised the level where income tax and the annuity deposit scheme become operative and offered a whole series of procedural reliefs to companies.

To increase the nation's resources for development and defence he announced a levy of 10 per cent surcharge on income-tax and raised the basic corporate tax on companies also by 10 per cent.

In the field of indirect taxes the Finance Minister raised the excise duty on crystal sugar and *khandsari*, cigarettes, cigars and unmanufactured tobacco, diesel oil, and cotton yarn, cotton fabrics and synthetic rayon. He also brought detergents under excise.

The total earning from the increase in levies will be Rs 101.51 crore. The reduction due to the concessions announced would be Rs 9.39 crore.

At a Glance

	1965-6 Revised	1966-7 Budget
	(Rs. crore)	
REVENUE BUDGET		
	Rs.	Rs.
Receipts	2,469.51	2,617.12 +101.51*
Expenditure	2,187.42	2,407.41
Surplus	282.09	209.71 101.51*
CAPITAL BUDGET		
Receipts	2,162.86	2160.50 +92.12
Disbursements	2,247.86	1,952.50
Transfer to Dev. Fund	80.00	325.00
Overall deficit	—165.00	—117.00 + 92.12*

*Effect of budget proposals

FOREIGN AID OF Rs 460 CRORE EXPECTED

PLAN OUTLAY IN 1966-67

	Rs
State Plans (except Nagaland)	**926 crore**
From State resources	421 crore
From Centre	505 crore
Central Plan	**1155 crore**
(From internal resources of public undertakings	189 crore)

Without taking into consideration these proposals, the revenue receipts at existing levels in 1966-67 would be Rs 2,617 crore. The expenditure on revenue account will be Rs 2,407 crore.

Capital expenditure in 1966-67 will be Rs 1,952 crore. This would be met by domestic market loans (Rs 284 crore), foreign borrowings (Rs 460 crore), surplus from revenue budget (Rs 210 crore at existing levels), small savings (Rs 135 crore), addition to P.L. 480 funds (Rs 230 crore), annuity deposits (Rs 44 crore) realisation of loans (Rs 370 crore), and miscellaneous receipts (Rs 102 crore). This would leave a deficit of Rs 117 crore. This being too large, the Finance Minister decided to enlarge the revenue earnings. The net effect of the proposals is to reduce the overall deficit from Rs 117 crore to Rs 25 crore which is now left uncovered.

Revised estimates for the current year place revenue receipts at Rs 2,469.51 crore and revenue expenditure at Rs 2,187.42 crore, leaving a surplus of Rs 282.09 crore.

Defence services will get Rs 797.67 crore in the coming year, an increase over the current year's revised estimate of Rs 769.06 crore. (Besides, Defence capital expenditure will be Rs 120.60 crore.)

The financial stringency and the Government's determination to exercise restraint are seen to effect in the capital budget for the next year. The outlay of Rs 1,952 crore will be Rs 296 crore less than in 1965-6. Plan assistance to State and Union Territories and outlay on railways have both been reduced. Indeed the total outlay on the Plan in the first year of the Fourth Plan (Rs 2,081 crore) is considerably less than in the final year of the Third Plan (Rs 2,225 crore).

Provision has however been made for the Bokaro Steel Plant and for development of atomic energy.

Books Received

Rural Communities in Transition. Communication and Leadership in Baipokhar Gram Sabha (A Case Study of Panchayat Elections) September, 1963. 25 pages. *Factionalism and Leadership Change in Bhurbharal* (A Case Study of Panchayat Elections). 32 pages. *Female Leadership in Deintikar Gram Sabha* (A Case Study). 24 pages. All published by the Director, Planning and Action Institute, Lucknow.

Mass Media and National Development by Wilbur Schramm. Stanford University Press, Stanford, California, U.S.A. and the U.N.E.S. CO., Paris. 333 pages. $ 7.50.

Development Finance Planning and Control by Ursula K. Hicks. Oxford University Press, Bombay. 187 pages. Price (in U.K. only) 28 sh.

Introduction to Agricultural Botany in India. Volume 1. G.V. Chalam and J. Venkateswarulu. 460 pages. Rs 34. *Foreign Trade and Economic Development of Underdeveloped Countries* by Ignacy Sachs. 136 pages. Rs 15. Both published by Asia Publishing House, Bombay.

Fertiliser Statistics 1964-65. The Fertiliser Association of India. New Delhi. 366 pages. Rs 15.

Study on Survey and Reclamation of Ravines in India. 51 pages. Rs 1.40. *Report of Committee on Transport Policy ond Co-ordination.* 340 pages. Rs 3.75. Both published by the Planning Commission, New Delhi.

SOVIET HELICOPTERS FOR INDIA

Soviet Union will supply to India 40 MI-4 helicopters. Each helicopter is capable of transporting one and a half tonnes of goods at more than 200 kms an hour.

PARADEEP Port Opened

India's deepest draft port was declared open on March 12 at Paradeep, 60 miles east of Cuttack, by Mr Petar Stambolic, Prime Minister of Yugoslavia. The port has a draft of 12.6 metres at low tide.

A jetty berth 155 metres long and 13.75 metres wide has been constructed to facilitate export of ore. A ship loader capable of loading 2,500 tons of ore every hour has been installed on the berth. Mechanical ore-handling equipment which will receive and handle ore brought in trucks has also been installed. The first stage is now complete.

Two million tonnes of iron ore from Diaitari Mines, 95 miles north-west of Paradeep, will be shipped from this port. The export will be increased ultimately to 5 million tonnes.

Yugoslavia played a big part in constructing this port in less than four years. Dredging the harbour and approach channel and construction of the iron ore jetty were carried out by Messrs Ivan Milutimovic, a Yugoslav firm of engineers and contractors.

Neyveli Starts Urea Production

THE urea plant of the Neyveli fertiliser factory has started production. Initially it will produce 150 tonnes a day. In three months it will be raised to 300 tonnes and by August it will reach the full capacity of 500 tonnes.

Along with the urea plant the ammonia plant has also been formally commissioned.

Condom Factory at Trivandrum

A factory to manufacture rubber contraceptives will shortly be set up at Trivandrum. Initially it will have two units with capacity to produce 144 million pieces every year. It will further be expanded to four units to double the production.

It is estimated that 40 million contraceptives were distributed up to the end of 1965.

Trade Agreement With Hungary

INDIA and Hungary have decided to expand the trade between them to Rs 27 crore in 1966, to Rs 29 crore in 1967 and Rs 30 crore in 1968. The trade amounted to Rs 18 crore both ways in 1965 as against Rs 3 crore in 1960.

Under the agreement India will import machinery and heavy equipment, chemicals, laboratory equipment, drugs and medicines, raw films, and special tools etc. and export iron ore, tea, coffee, spices, maida, cotton textiles etc.

The trade agreement has also been extended by two years to 1970.

Hungary has also been assisting India in setting up an aluminium factory at Korba (M.P.) and a National Instruments Factory at Calcutta. Hungary has offered India a credit of Rs 25 crore.

India has signed another agreement with Hungary for scientific collaboration under which scientists' delegations will be exchanged between the two countries this year to explore the fields of research in pure and applied sciences for mutual benefit.

The third agreement to be signed between the two countries recently was for the operation of air services.

India recently signed two more trade agreements—one with Czechoslovakia and the other with Rumania.

Trade with Czechoslovakia will be stepped up to Rs 50 crore in 1966, an increase of about 25 per cent over 1965.

With Rumania the trade in 1966 is expected to be valued at Rs 70.5 crore both ways, about 10 per cent more than in the previous year.

54,700 VILLAGES ELECTRIFIED

TARGET EXCEEDED BY 7,700

THE number of electrified villages in India will reach 54,700 by the end of March. This is 7,700 more than the target set for the period.

Delhi and Pondicherry have electrified all their villages. Madras and Kerala have achieved percentages of 48.8 and 40.4 in rural electrification.

By the end of March the number of electrified pump sets is expected to go up to 4,81,251. It represents an increase of 81,906 over last year's number.

Zinc Smelter at Visakhapatnam

A zinc smelter is to be set up at Visakhapatnam with assistance from Poland. A contract has been signed with Centrozap, a Polish firm, for preparing a detailed project report. The zinc smelter is expected to have a capacity of 30,000 tonnes per annum based on imported concentrates. The project will get assistance under the second Polish credit agreement of 1962.

SNIPPETS

THE Rana Pratapsagar Dam at Kota in Rajasthan is expected to be ready by June next.....A radio station with a low medium-wave transmitter has been installed at Pasighat (NEFA).....Another medium wave transmitter has been installed at Shillong station of A.I.R.....The construction of a dam on the Deodo nallah has been sanctioned at a cost of Rs 1.78 crore to irrigate about 25,000 acres in Dandakaranya project.....A new series of 10-year National Savings Certificates has been issued.....Remittances under the National Defence Remittance Scheme had totalled Rs 20.43 crore up to February 25, 1966..... The Railway Board has sanctioned new traffic surveys for the two proposed lines—Rajkot to Jasdan, 61 kilometres, and Bhavnagar to Tarapore, 141 kilometres.

U.P.'s Malady Partly Man-Made

Continued from Page 11

It is worthwhile to test this assumption. Uttar Pradesh has not been an insulated area but a meeting ground of foreign forces. It has received the impact of all the outsiders, Aryans, Greeks, Scythians, Kushans, Huns, Afghans, Turks, Mughals and the British. The Europeans, before settling at Bombay and Calcutta, settled at Agra and Fatehpur Sikri. Again, Uttar Pradesh has been the meeting place of people from all over India, especially the pilgrims. It was never insular; it always received a continuous stream of visitors from all parts of the country. The courts of the rulers of Uttar Pradesh, whether at Hastinapur or Kannauj, Mathura or Agra, were open to visitors from many lands. It was this interchange of ideas and receptivity to current thought that encouraged people like Tulsidas and Kabirdas to speak in a new tone about religion. Earlier, it was from Mathura and Ayodhya that the Mahayana currents of Buddhist ideology arose and great national thinkers like Asvaghosh sprang up. The heartland rigidity theory does not seek to hold up when we remember that even in the recent past it is the rimlands of India, like Saurashtra, Gujarat, Maharashtra, Madras and Bengal that have produced deeply religious and rigid leaders like Dayanand Saraswati, Bal Gangadhar Tilak, Mahatma Gandhi, Mr Jinnah, Sardar Vallabhbhai Patel, Netaji Subash Chandra Bose and Mr Rajagopalachari, while the so-called tradition-minded Uttar Pradesh produced liberal and flexible leaders such as Motilal Nehru, Sir Tej Bahadur Sapru, Jawaharlal Nehru, Govind Ballabh Pant and Lal Bahadur Shastri.

Let us turn to Professor Humayun Kabir's theory that U.P's backwardness in technology is due to the fact that English came last to Uttar Pradesh. Actually Uttar Pradesh had taken up English education even before Englishmen occupied the whole of Uttar Pradesh. The first English-teaching schools were opened in Banaras in 1818, the same year that missionaries opened their college at Serampore, and only a year after the establishment of the Presidency College in Calcutta. The Agra College was started in 1824. The second college in Calcutta, the Scottish Church College, was set up only in 1838. It is to Punjab that English education went late—in 1856. The South had English schools only at the same time as U.P.—Cochin in 1818, Travancore in 1834. Even in technical education, U.P. did not chronologically lag behind. The first engineering college in India was opened at Roorkee in 1847. Engineering colleges were opened in Calcutta, Bombay and Madras in 1856. The Victoria Jubilee Technical Institute was started in Bombay in 1887. Except the Roorkee College, all these institutions had only licentiate courses in civil and mechanical engineering. And it was in Banaras, the city of Hindu bigotry, that a great Sanatanist leader, Pandit Madan Mohan Malaviya, founded a university to give first degree courses in mechanical, electrical and chemical engineering as well as courses in mining and metallurgy. It is interesting to note that the idea to start such a university under title of Bharatiya Vishwavidyalaya, was mooted out in a conference of *sadhus* and *sanyasis* presided over by Jagadguru Shankaracharya in 1906 at the Kumbh Mela in Allahabad. Therefore, much before the Imperial College of Science and Technology had been founded in England in 1907, the people of Uttar Pradesh were thinking in terms of opening engineering colleges and universities.

IRRIGATION POTENTIAL NOT UTILISED

The real malady of Uttar Pradesh is partly man-made and partly the result of its past history. Because the people have been living on the land for too long a time, the land has lost much of its life-sustaining value. According to the *Techno-Economic Survey* the soils of the State suffer from lack of nitrogenous content. There are also some phosphate deficiency pockets. It must not be forgotten that even today Uttar Pradesh produces one-third of the total production of wheat in this country. Its total production of food is 18 per cent while its population is 16.8 per cent. It exports pulses and coarse grain to many States. Although Uttar Pradesh has great rivers like the Ganga, the Yamuna and the Ghagra, except for very early projects, the waters of these mighty rivers have not been used for irrigation. The irrigation potential of Uttar Pradesh is very high, but it has not been cared for and even when potential has been created, it has not been properly utilised. Only 26 per cent of Uttar Pradesh's total area is irrigated for double cropping. The eastern area, which produces sugar and rice, has no river irrigation and tubewell operations have not been successful owing to scarcity of power. The Bundelkhand area has no irrigation system worth the name, though some thousand years ago the local Chandel and Bundela rulers had built several tanks and artificial lakes which have now gone into disuse. According to the Chief Minister of Uttar Pradesh, Shrimati Sucheta Kripalani, if proper irrigation facilities are provided, these districts alone can wipe out the food deficit of the State.

VERY LITTLE MINERAL RESOURCES

As far as industrial development is concerned, as these reports make clear, Uttar Pradesh ranks very low in mineral resources. While going through the book, however, we were heartened to find that next to Andhra Pradesh, Uttar Pradesh has the largest resources of limestone in the country with 4,788 million tons of cement grade and 2,984 million tons of blast furnace flux grade, together making up more than a third of the country's reserves. It has been stated that the limestone found at Khajrahat in Mirzapur district, together with that found in Shahabad district of Bihar, can meet the entire needs of the Bokaro Steel Plant which need not depend on Sundergarh fields which already cater for the other three steel factories.

How deficient the information about Uttar Pradesh is, can be seen from the fact that while Uttar Pradesh produces 1,80,000 tons of silica glass, which is 80 per cent of the

total production of the country, it does not find mention in the report of the Bureau of Mines. There are prospects for portland cement, white cement, phosphatic shale, magnesite, prophylite and talc. The report has also failed to mention the coal reserves in Mirzapur district which are parts of the great Singrauli seam in Madhya Pradesh. According to the late Dr Lahiri, the Singrauli seam has a tremendous potential. With the assurance of water from the Ganga, the area between Allahabad and Banaras can be made into a great industrial centre. Japan has no iron ore, and imports it to produce iron and steel. But in India, we have, by a wrong policy, concentrated our industries only in those areas which produce the raw material. If the same industrial policy as has been followed by Britain, Germany or Japan is followed in India, that is, that goods are produced at points nearest the places of consumption, while the raw materials are imported from any place where they are available cheap, the picture of industrial development of Uttar Pradesh will be different. The electricity prices in Uttar Pradesh are the highest and the *Techno-Economic Survey* as well as the Patel Committee Report has rightly commented upon it. The industrial development programme of Uttar Pradesh thus indicates many projects for electricity production.

OVERALL LAND PRODUCTIVITY LOW

Coming to agriculture, we find the doctors disagreeing in their diagnosis. It is admitted that the net value of agricultural output per acre of gross cultivated area was nearly Rs 167. According to the *Techno-Economic Survey*, the overall low land productivity in the State is partly due to inferior cropping pattern but largely to the low per acre yield of most of the crops. According to the report, food crops which yield less per acre, compared to commercial crops, are grown on a larger area in Uttar Pradesh than in the rest of the country, the Uttar Pradesh percentage being 88 of the total crop area compared to 75 per cent for all India. Oilseeds are grown only in 2 per cent of total crop area, cotton in half per cent and sugarcane in 5.8 per cent.

According to the Uttar Pradesh Government, another disability of U.P. is that the average size of holdings in the State is very small. It is only 5.3 acres, compared to 11.8 acres in Punjab, 13.9 acres in Madhya Pradesh and 7.5 acres for all India. The smaller size of the holding disables every cultivator from putting necessary inputs. Thus, the insistence on producing more food and the existence of smaller holdings and a large number of holders are important reasons contributing to the economic backwardness of the State. That raises a further point: Are land reforms inimical to the grow more food policy ?

HOLDINGS HIGHLY FRAGMENTED

Here we come to the Planning Commission-sponsored study of *Land Reforms in Uttar Pradesh*. This excellent study by Prof Baljit Singh and Dr Shridhar Misra tells us the history of land reforms in Uttar Pradesh. Zamindari was abolished in Uttar Pradesh in 1952 and the State Government had to pay Rs 68.79 crore as compensation. According to the book, which has quoted the F.A.O. report also, "unsatisfactory forms and conditions of land tenure may constitute a major impediment to development by creating or perpetuating social unrest as well as by hampering the modernisation of agriculture". This report has made out a strong case for land reforms. Ceilings have been imposed on holdings in Uttar Pradesh which have encouraged fragmentation of holdings, because it is a human instinct to leave the property to relatives or descendants or to dispose of it rather than surrender it to the State. Naturally, the Uttar Pradesh Imposition of Ceilings on Land Holdings Act 1960 has, in spite of its objective (to ensure increased agricultural production), produced a state where large-scale holdings are not possible. According to this Act, at the present moment the holdings cannot be larger than 12.5 acres. Some land has been vested in Gaon Samaj and the total ceiling on land envisages 40 acres for a family of 5 members.

As far as the size of the land is concerned, the two publications, the *Techno-Economic Survey* and *Land Reforms* differ. According to this, the average size of the land holding is 7.5 acres in western districts, 5.2 acres in the central, 12.8 acres in Bundelkhand and 5.8 acres in eastern districts. As the Bundelkhand districts suffer from deficit rainfall and irrigation and eastern Uttar Pradesh has the problems of annual floods and no river irrigation, the holdings are reduced to a stage where modern agriculture cannot be practised. People who have such holdings cannot provide irrigation and fertilisers needed to produce cash crops like cotton, oil-seeds or sugar; hence the low productivity. It is found that even today the bulk of the holdings between 5 acres and 15 acres are cultivated by *asamis* or subtenants and non-tenure holders. This applies to 51.70 per cent of the area. The *Techno-Economic Survey* emphasises the use of more fertilisers and change-over from food crops to cash crops, so that the economic value may grow. On the other hand, the Planning Commission team has made out a very strong case for land reforms as the sole means of increasing agricultural production. Thus, Uttar Pradesh has been caught between two contradictory ideologies and that has also been one of the reasons for its agricultural stagnation.

The problems of Uttar Pradesh are many. Its involvement in the 1857 Rising was rewarded by the British by keeping it economically backward. Its insistence on rural reforms and prohibition, its refusal to overdraw money from the Central sources and refusal of the Central authorities to pay for certain expenses like the abolition of zamindari have materially affected its capacity for investment in the industrial sector. The policy of locating industries in mineral areas has also contributed to the backwardness of the State.

First Swiss Government Loan

INDIA signed a credit agreement with the Swiss Federal Government in Berne on March 8. It provides for buying capital goods and component parts worth Rs 7.7 crore. This is the first time that the Swiss Government has agreed to provide a part of the amount of credit to a foreign country. Half the credit will be given by the government and the other half by a consortium of four Swiss Banks.

FORUM EVENTS

Reporting the Activities of College Planning Forums

Report of A Survey

FARMING Main Occupation in A Rocky Village

SRINAGAR village near Ajmer in Rajasthan is a handsome valley which lives mainly on the income from agriculture and its famous stone quarries. Stone which is used to construct door frames, roofs, slabs and beams is quarried from here and taken to many towns. Harijans and backward classes constitute 80 per cent of the population. The people are orthodox and superstitious but are influenced by the Ajmer fashions and customs. Muslims of the village very much resemble Hindus in their dress and in some customs.

Twelve students of the Government Degree College Planning Forum of Kishengarh in Rajasthan which carried out a socio-economic survey of 400 families in the village have reported that although the place is rocky and hilly, agriculture is one of the primary occupations of the villagers. Out of a population of 3,350, farmers numbered 385 and landless agricultural labourers 750.

Of the total area of the village only a third is cultivated. Rainfall is low. There is no river or tank. The wells are deep and irrigation is therefore very difficult. Owing to the panchayat's efforts farmers were slowly taking to fertilisers. Among the food-grains cultivated were wheat, barley, maize and bajra. Non-food crops like sesamum, tobacco and cotton were cultivated in about 30 per cent of cultivable land. But the village was tending to go in more and more for cash crops, the acreage under such crops having almost doubled to 700 acres.

The total number of livestock in the village at the time of the survey was more than 4,700 out of which only 200 were milch cattle. Sheep rearing was common and was the main source of livelihood for a few families.

Quarrying, *bidi*-making, handloom weaving, *ghani*, and corn grinding were among the major non-agricultural occupations. About 900 people were employed in these.

Co-operation had to a very limited extent improved the economic conditions of the village. There were four industrial co-operative societies with a capital of Rs 3,400 and one agricultural credit co-operative with a capital of Rs 15,000 and with 350 members. But most of the villagers got their credit from *mahajans* and *sahukars*. The total came to Rs 5 lakh for 570 farmers, the average working out to Rs 880.

The village had a hospital with four beds, a child welfare centre and a veterinary centre. Malaria and typhoid were the common diseases in the village.

There was a higher secondary school, a primary basic school and a girls school. The total number of students in the schools was 460 out of whom 60 were girls. But the percentage of literacy was low in spite of literacy campaigns and education.

The village had an information centre, a reading room and a community radio set. There were a few music and dramatic clubs.

The staple food of the villagers consisted of barley, maize and bajra. The rich also took wheat.

Child marriage was very common among these people. When the bride and bridegroom attained the age of puberty, a second marriage known as 'Gona' and 'Rona' was celebrated.

The village, although near Ajmer town, has no electricity. There was scope to develop small-scale industries and to mechanise stone quarrying by providing electricity. If the panchayat could provide cheap credit and machinery on a co-operative basis, the people of Srinagar could considerably raise their meagre earnings which were not more than Re 1 per head a day.

PLAN WEEK : *C.M.S. College, Kerala* : *Women's College, Surat*

THE Planning Forum of Kottayam C.M.S. College, Kerala, launched an intensive small savings drive during the National Plan Week beginning with November 14, 1965. Forty members of the Forum led by the staff members of the College went from house to house in the different wards of Kottayam town, and collected about Rs 300. The amount was handed over to the District National Savings Officer, Kottayam, for depositing in the post office savings.

The Forum held a symposium on 'The role of students in the present emergency". Both students and teachers took part in the symposium. An elocution competition on 'Achievements of the Third Five Year Plan' was also conducted.

On February 20, the last day of the week a musical evening was arranged. It included a film show and a *Kathapsrasangam.*

LAL Framroze Wadia Women's College, Surat, celebrated the National Plan Week with great enthusiasm.

The week began with an interclass essay competition in which many students participated. A grow-more-food campaign was initiated by planting vegetable seedlings in the College compound.

The College also organised a symposium on plan subjects. Dr R.K. Desai, a medical practitioner of the locality, presided.

Mr A. Jariwala, an industrialist of the place, pointed out the defects in the implementation of the Plan.

YOU ASK US WE TELL YOU

Questions from readers on planning and development will be answered on this page. It might be noted that the purpose of this service is to provide information. But we won't be able to entertain trade queries.

COST-BENEFIT ANALYSIS

Mr. Vidya Sagar Jindal, Ludhiana

What is meant by cost-benefit analysis? What is its relation to economic growth?

ANSWER: Cost-benefit analysis is undertaken, consciously or unconsciously, in every economic activity. It consists in weighing returns against the costs involved in an enterprise. A businessman pursues those activities which he thinks are profitable, *i.e.* where there is a margin left after costs are met.

In development economies, this analysis has added dimensions as also significance. In a developing economy, it is of prime importance that the more rational allocation of scarce resources is ensured for results. It is also evident that in this context, the limited view taken by a private businessman of costs and benefits, is not appropriate. For there is a divergence between the interests of a society and those of an individual. That is why economists speak of social costs and benefits as against private costs and benefits.

In the past, even in public projects which were mostly confined to public works like irrigation schemes, a narrow view of financial returns to money invested was taken in the assessment of economies. Now it is appreciated that direct and indirect as well as primary and secondary effects of a project have to be considered for a proper appraisal. Additional sophistication is introduced through the use of concepts like "shadow" prices, discounting for time-preference, etc.

Cost-benefit analysis is too complex a subject to be dealt with in a couple of paragraphs. It is necessary that one interested in the subject turns to the growing literature on the subject.

Some of the examples in India are the studies of river projects, such as Bhakra Nangal, Koyna-Krishna, Hirakud and Damodar Valley Projects, published by the Programme Evaluation Organisation of the Planning Commission.

For a theoretical study of the subject, the following books are suggested:

1. Formulation and Economic Appraisal of Development Projects, United Nations, New York, 1951.

2. Leading Issues in Development Economics, Oxford University Press, New York. 1964 (Pp 229-284).

3. Allocation of Economic Resources, Stanford, 1959.

4. Cost-Benefit Analysis and Economic Growth—an article by A.C. Harberger in the *Economic Weekly*, February 1962.

CONTAINER FREIGHT SERVICE

R.N. Mehta, Godhra

It is learnt that the Western Railway has introduced a container freight service on the Bombay-Ahmedabad line. May I know what is the speciality of this service?

ANSWER: Under the service, the consigner is given the facility of a specially made container to load his goods. He can also lock the container to ensure the safe delivery of the goods to the consignee without being touched by any outside agency. The container is water-proof and pilfer-proof. It has a capacity of a medium truck (4.5 tonnes). The handling of the container is fully mechanised. The containers are loaded in a specially adapted wagon.

The service combines in itself the best features of rail and road transport. It ensures complete safety from damage or pilferage of goods in transit. It also saves time and packing expenditure on the transport of goods. The consignment reaches the consignee at his door.

At present, the service has been introduced between Bombay and Ahmedabad. For further development of the service other types and sizes of containers and road equipment are being investigated.

Yojana Bhavan Diary

The Planning Commission met on February 24 and March 4 to discuss the programme for iron and steel in the Fourth Plan.

Mr Bernard Bell of the World Bank Mission met Mr Asoka Mehta, Minister for Planning, on March 6 and Sir Percival Griffiths, President of the India, Pakistan and Burma Association, London, met him on March 9.

Prof. V.K.R.V. Rao, Member, Planning Commission, accompanied by Dr A. Vaidyanathan, Assistant Chief in the Perspective Planning Division, left for Bangkok on March 6 to lead the Indian delegation to the Asian Conference on Planning for Children and Youth, being held from March 8 to 15.

Mr Asok Mitra relinquished charge as Additional Secretary in the Planning Commission on his appointment as Secretary, Ministry of Information & Broadcasting with effect from March 5.

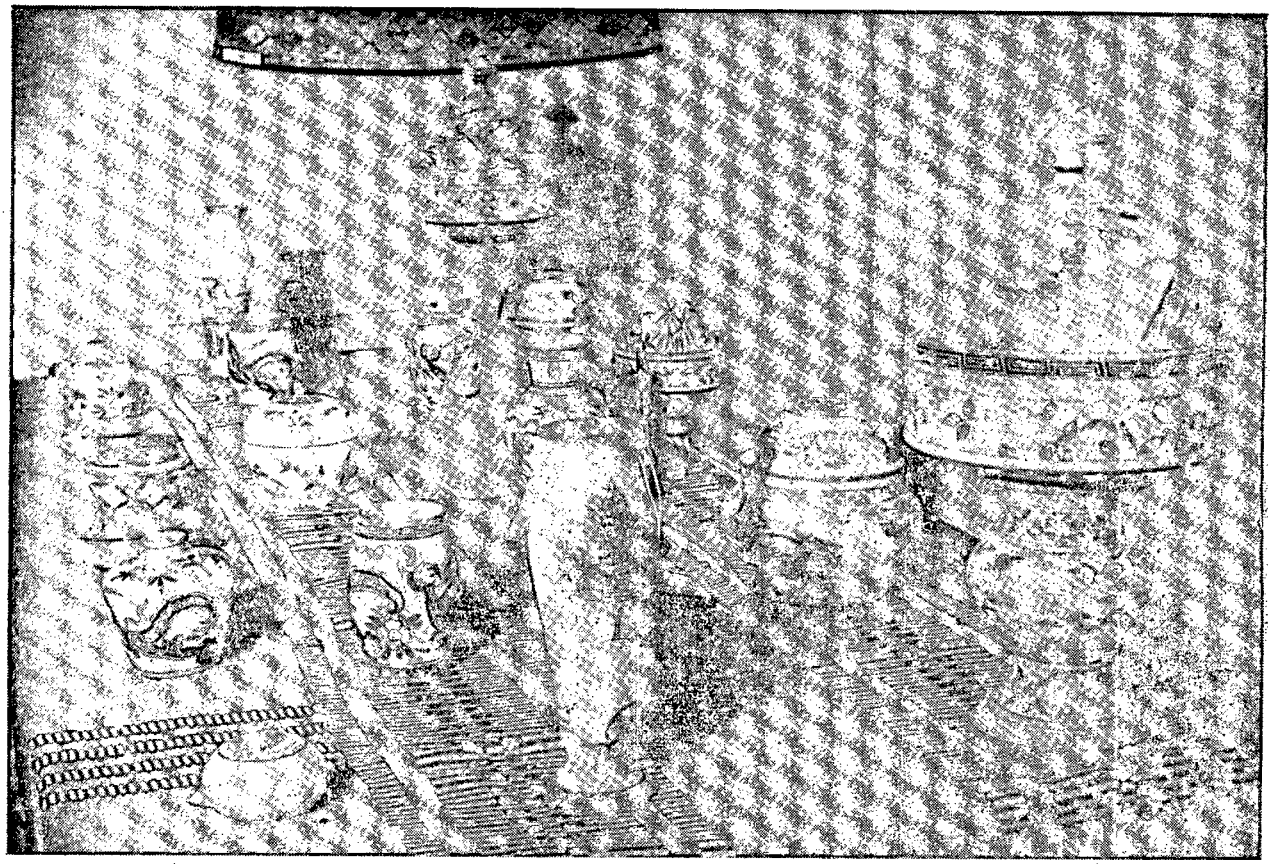
Dr K.S. Krishnaswamy, Economic Adviser, has left for Washington on March 11 for discussion with the Executive Directors, International Monetary Fund and the International Agency for Reconstruction & Development, regarding the Fourth Plan.

Mr Ameer Raza, Joint Secretary (Land Reforms), Planning Commission, who has proceeded on leave preparatory to retirement was given a farewell party by the staff of the Commission on March 1.

Dr R.G. Nayak, Senior Research Officer, Economic Division, Planning Commission, left on March 9 on deputation to the International Monetary Fund to take up appointment as Technical Assistant to the Executive Director for India.

Mr H.Y. Sharada Prasad relinquished charge as Chief Editor, *Yojana*, on March 4 on his appointment as Deputy Information Adviser in the Prime Minister's Secretariat.

Regd. No. D—876



PRIDE OF PLACE

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WOOD CRAFT OF NEFA

Wood carving and painted mugs made of wood are among the beautiful handiwork of the Monpas in NEFA. Inhabitants of Kameng division which is the seat of the famous Towang monastery, they are skilled in arts, dancing, singing and carving. Mythology and tradition nourish their arts.

The designs painted on the wooden carvings are symbolical. Their details are deeply rooted in the tribal consciousness and reflect their heritage.

For wood carving, certain trees are not used because they are sacred and even their fallen branches may not be used.

The Monpas paint delicate images of Lord Buddha, figures of dancers and human heads on wooden bowls, dishes, cups and masks. It is a surprise that only Monpas, among all the tribal people of NEFA, know the art of painting.

In Tirap and Tuensang districts of NEFA, wood carving was closely associated in the old days with head hunting. Wanchos and Noctes, who inhabit these districts, were head hunters once upon a time and so perhaps, as a recollection of their past, they paint the human head as their centre motif on the wooden ornaments made for their necks and hair. Their mugs depict warriors gleefully carrying off heads.

For Khampti priests of Lohit, wood carving is a pastime. They show great skill and taste in the designs.

The Khambas and Membas of Northern Siang make wooden masks.

The houses of most tribes of NEFA are made of wood. The walls, pillars and roofs are made of massive blocks of wood and carved with fantastic designs and images. Every design and motif has a religious or magical basis.

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