

YOJANA

25 PAISE

No-10

THIRTEENTH YEAR

10

JUNE 1, 1969





To help them reap better...
help them
sow better



We help them sow better by making better equipment possible like tractors that plough an acre an hour, bulldozers, scrapers, traxcavators, superphosphate plants. This is only the groundwork behind our efforts in making more food possible. We've been thinking of food from other angles as well. Like dairy, for instance. Leading dairies depend on us for complete dairy equipment. And that's not all. We also supply and install cattle feed plants, bulk handling equipment, refrigeration plants, bacon factories, slaughter house equipment... Our efforts in making more food possible are backed by collaborators like Caterpillar—people who move the earth; Chemiebau who are well known for the design and supply of chemical plants all over the world; Atlas—famous for refrigeration plants, bacon factories, slaughter house equipment; Niro Atomizer, Paasch and Silkeborg, Wright Hargreaves—manufacturers of dairy equipment, Buhler—designers of bulk handling and grain storage plants...

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Yojana seeks to carry the message of the Plan, but it is not restricted to expressing the official point of view.

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LEST WE FORGET

The Plan is, in a sense, a battle for economic betterment—a battle far harder than the battle for freedom. It is a battle in which the entire nation should join.

— Mrs Indira Gandhi

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A GROWING FAMILY

NONE will, today, deny that an essential pre-requisite for the success of the Plans is people's co-operation in their implementation. This co-operation has, of course, to be sought and built up and may not come unsolicited. There is, no doubt, that people's participation in planning will come only when they are inspired about its socio-economic goals and feel confident about attaining them.

The use of the mass communications media to spread understanding and knowledge among the people about planning and its progress is imperative to attract their purposeful participation. The need for this was felt right from the First Plan. It was precisely with the objective of carrying the message of the Plan to the people and inform public opinion on the different aspects of the country's regeneration that *Yojana* began to be published from January 26, 1957. Over the last twelve years, the two editions of this journal—English and Hindi—have tried their utmost to act as a mouth-piece of planning and as a mirror of India's development.

Right from the start it was felt that it was necessary to bring out the journal in all Indian languages so that the message of the Plan could percolate down to the villages and reach the masses of the country. It is only now that we have, at last, begun to realise this long-cherished dream. On June 8, this year, *Yojana* is entering its second stage of expansion with the publication of its Bengali edition DHANADHANYE. And, some time next month, there is to be a further addition to the *Yojana* family when THITTAM, its Tamil edition, makes its appearance.

Jawaharlal Nehru, in the message that he sent to the first issue of this journal, said that although there were many magazines and periodicals in the country, the field of planned economic development and its popularisation had been left largely untouched by them. In his view, *Yojana* would be doing pioneering work of great importance.

All these years, the journal has tried to create an awareness among the people of the country's planning process and to give a graphic picture of the massive economic endeavour of a nation reborn in freedom. It has portrayed the pangs and joys of developing India. It has told, without exaggerating, the story of the enor-

mous achievements of the Five Year Plans. It has not minced words in placing before its readers the problems and difficulties that the country has faced in trying to implement the Plans within a framework of democratic socialism.

Its pages have provided glimpses of India's endeavour to bridge the yawning gap of centuries, from the bullock-cart age to the space-age, of its rapid strides in industrialisation, of the forward march of its 550,000 villages, of the unceasing toil to provide its 525 million people with more schools, more houses and more hospitals, and of the attempts to secure for the nation a place in the twentieth century civilisation of science and technology. A special feature of *Yojana* reporting is that it has always been in word and pictures.

While trying to serve the major purpose of drawing the people's attention to the country's planned growth, it has also thrown its columns open as a forum of debate on themes of national importance.

Although it is a Government journal, *Yojana* has never been restricted to expressing the views or publicising the activities of the Government or the Planning Commission. This was spelt out in the very first issue. And, in keeping with this, it tries to reflect the people's aspirations as well as their irritations, frustrations and anger, whenever planning has failed to fulfil those aspirations. It gives praise where praise is due and criticises when criticism is constructive. As a result, it has been able to build up its image as a people's journal.

It needs no emphasis that planning has to be a national endeavour involving all parts of the country and all sections of the people. However, the editions in different languages will try to highlight developmental activities in their respective regions. These will be placed in their proper perspective on the broad national canvas. While emphasising the successes in regional development, the problems and failures of planning in the States will also not be lost sight of. *Yojana* will ensure adequate coverage of the States through its chain of Special Correspondents based in State capitals. In this way it is felt that this journal will be able to serve better the cause of national integration and inspire united endeavour in the country's economic growth to prosperity and happiness.

COMPARATIVE ROLES OF COMMERCIAL AND CO-OPERATIVE BANKS

C. DINESH

THE enunciation of social control on commercial banks has raised a few questions: Foremost, whether this new development would benefit or adversely affect the farmers; secondly, what will be its social, political and economic effects; and finally, would it hamper the growth of the co-operative banks?

Commercial banks, it is said, cannot reach millions of individual farmers and, therefore, cannot compete with the co-operative banks. This is seeing the problem from credit distribution point of view which does not bear upon the entire issue.

In the initial stages, direct lending to the farmers by different agencies may appear to be beneficial to the agriculturists. The so-called multi-agency approach would be practical only in an economy where people are conscious of the benefits of saving and productive investment. The Keynesian twin factors, namely income and expenditure, leading to saving and investment, may not be fully applicable to Indian rural economy. Saving consciousness and habit have to be taken into account while measuring the saving potential of an economy, more so in an underdeveloped one.

While agreeing with the fact that size of income is one of the important economic factors determining the volume of savings, saving habit is no less important a social-psychological variable.

Deposit Position of Commercial and Co-operative Banks in 1967 (in lakhs of rupees.)

	Scheduled Banks	Co-operative Banks
Fixed	185555	15646
Savings	88644	9882
Current and contingency	143515	12042
Others	—	3098
Total	387714	40668
Relative Proportions of the deposits of co-operative banks	Fixed	8.4
	Savings	11.1
	Current & Contingency	10.6
	Total	10.5

AREA OF FRICTION

Among the many areas of friction between the commercial and co-operative banks, caused by the entry of commercial banks in the field of agricultural credit, is the competition in deposit mobilisation which may ultimately hamper the growth of co-operative banking structure unless proper safeguards are devised to prevent this drift in the initial stage itself.

Basically, commercial banks operate on the principle of maximum investment (profits) with minimum risks which naturally leads them to operate among more affluent and creditworthy farmers. Added to this, the centralised control and scientific management would provide the commercial banks an operational superiority. On the other hand, maximum benefit (service) to the largest number of people is the watchword of co-operative institutions. Demo-

cratic control and the difficulties in introducing scientific management, weaken the competitive power of the co-operative banks. Therefore, the operational optimum of a co-operative bank would always be achieved at a little lower level of economic activity than that of a commercial bank.

So far the commercial banks have not directly penetrated into our rural areas excepting in a few cases. Their operation was restricted to urban areas, as well as industrial and commercial centres. Deposit mobilisation is one of the major functions of our commercial banks. Indian commercial banks, unlike those in the West, depend on their own resources and deposits and very little on borrowings from the Reserve Bank of India. Providing facilities and incentives to attract deposits is a technique developed very well by our commercial banks and which co-operative banks would take decades to catch up with, because the deposit mobilisation goes with two important variables, namely saving habit and operational efficiency. In both these areas, co-operative banks would be the losers. Saving habit of our rural sector is quite discouraging and it would take a long time to develop this habit. Operationally commercial banks have an edge over co-operative banks.

The commercial banks would be too happy to compete with the co-operative banks in the field of deposit mobilisation in the rural sector which was hitherto monopolised by the co-operative banks. The total credit requirement of the cultivator households in the country is well over Rs. 100 crore, of

It Would Be Unwise To Allow Two Agencies To Operate In The Same Field At The Village Level

which about 25 per cent is being met by the co-operative sector. The remaining 75 per cent is met either by money lenders, traders or relatives and friends. Secondly, the co-operative credit is disbursed in such a way that only partial requirements of the maximum number of farmers are tried to be met. Therefore, the farmers who borrow from the societies are always obliged to borrow again from other sources to meet the remaining requirements.

As for the actual lending operations of the co-operative central banks, in a majority of States, except perhaps in Maharashtra and Gujarat, they are entirely dependent on the borrowings from the Reserve Bank of India through the State Co-operative Banks. In spite of the monopoly enjoyed by the Central Co-operative Banks during the last so many decades they have not been able to mobilise substantial amounts of rural savings through bank deposits. It is so disheartening to note that the ratio of bank deposits to net income of the agricultural households is only 0.2 per cent, percentage of net saving is 4.7 and bank deposits to net saving 4.6 per cent.

In the first instance, the commercial banks would be inclined to follow the prevalent investment pattern of the farming households in planning their advances, because the commercial banks are more accustomed to operate on the basis of investment potential of their borrowing parties. They have not tried to assess the moral aspects of any investment either from the point of view of the society or the economy as a whole. Their criterion of advancing has always been "safe and profitable investment" within, of course, the legal framework.

Then the selection of clientele. It is evident that commercial banks would select the higher saving group farmers. Farmers in the

lower income groups do not save at all, on the contrary, they run into debt. The farmers who would really come under the scope of borrowing from commercial banks are those who fall in the income group above Rs. 4800 whose net saving is above 15 per cent, because only this group has more than 10 per cent physical investment to their credit which is really productive. And this is the group which has the highest financial investments in bank deposits, small savings and life insurance. These are the fields in which commercial banks could provide effective service to their customers.

Against this background, if we compare the relative deposit positions of all the Indian scheduled banks with those of co-operative banks, the situation will become clearer (see table). Individually as well as relatively, the deposits of the co-operative banks (only State and Central Co-operative Banks) appear to be stagnant, in effect declining. This is not an encouraging situation to reckon with in an economy where the contribution of agricultural sector to the national income is about 50 per cent.

SOCIAL & POLITICAL HANDICAPS

With their entry into the field of agricultural finance, the commercial banks along with their direct and selective finance are likely to introduce a scheme of compulsory deposits for their borrowers which may not be possible for the co-operative banks due to social and political reasons. Co-operative leaders are inclined to place social benefits and their own political interests above the commercial and financial interests of the banks. The capacity of co-operative banks in competing with commercial banks in this field depends very much on the quality and character of leadership and efficiency of

management. Evidently, though the competition is not in advancing loans but in savings or deposit mobilisation, the threat of the co-operative banks being edged out remains.

We are quite aware that an average depositor, excepting in a few cases, would always prefer to have an account with a big commercial bank rather than in a co-operative bank. It is considered not only safe but also a matter of social status. One cannot expect an individual member of the society to go against the values of the society in which he lives. These values must change through a process of education. And a precondition to this change is the efficiency of co-operative banks in serving their customers and creating confidence in them.

If that be so, they can tap another important area of investment, that is, investment in gold and silver. This investment is already over 26 per cent of the total financial investment of the farming households which is not a small sum.

If the members of the board of directors of a co-operative bank keep their deposits in good commercial banks, and instances of this kind are not very few, not much confidence can be created in favour of co-operative banks among the farmers. Another significant factor is that the saving-investment pattern of the farming families is *least influenced by the levels of education*. For instance, farmers with no formal education together with people who attended primary school account for 68 per cent of the net savings and remaining classes account for the rest. Higher education may, perhaps, drive people to commercial banks.

Though the prospects of commercial banks being able to tap the additional income generated in the agricultural sector

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A NEW PHILOSOPHY OF FOREIGN AID

K. RAMACHANDRAN NAIR

OUR planners do not advocate an isolated economy. They consider that foreign aid must be like a walking stick and not like a crutch. It is welcomed only as an addition to the pool of investment resources capable of quickening the pace of development. The foreign aid given to us so far has given able support to our economy. The aid already utilised by us has increased our productive capacity. It has brought the possibilities of modernisation to our agriculture by enlarging power and irrigation potential. It has played a crucial role in railway rehabilitation and trans-

its export earnings to pay interest on foreign debt. In the U.S.A., the take-off was assisted by huge foreign investments in her railroad and transportation industry. In 1914 when the Scandinavian countries had their take-off, nearly half of their national debt was foreign-held. In countries like the United Kingdom and Japan, on the other hand, take-off was largely the result of expanding trade. Trade acted as an engine of growth. In 1881 Britain exported 22 per cent of her national product. She was also making huge investments in the colonies which enabled her to

present calculations, by the First Plan, exports should average Rs 1,500 crore a year to enable us finance a part of imports and the entire amount of service charges on foreign debt. This means that exports will have to grow well over 3 to 4 times the present level. This looks an extremely formidable task for a country like ours, struggling in a world in which prospects of expanding trade are constantly shrinking.

ASSISTED TAKE-OFF

The alternative open to India, therefore, is an assisted take-off with foreign aid. As a proportion of total investments for the three Five-Year Plans put together, foreign aid contributions averaged 20.3 per cent. That is, out of Rs 18,110 crore of total investment, only Rs. 5,6882 crore came as foreign aid. This clearly shows that we ourselves have provided the bulk of the development capital. Only 20 per cent of our total debt is now held abroad. This is in contrast

Assisted Take-off Only Alternative For India

port development. The expansion of steel-making capacity is entirely due to the capital and technical assistance from friendly countries. In short, foreign aid has brought us near the take-off stage. We fully realise that more economic aid is required to bring the economy nearer self-reliance. In spite of this, we have explained our stand that we cannot be forced by anyone to accept a Plan prepared to please the aid-givers. Economic growth is always an endless struggle against the forces of stagnation. A cut in foreign aid at this critical stage of development may only strengthen these forces.

OTHER COUNTRIES

While we admit the fertilising effect of foreign aid, we may ask, is it vital for take-off and self-sustained growth? The answer is yes and no. Canada, New Zealand and the United States offer typical examples of assisted take-off. In 1913, 60 per cent of Canadian national debt was held abroad. New Zealand used 14 per cent of

expand her trade. Japan was exporting 13 per cent of her national product during the take-off.

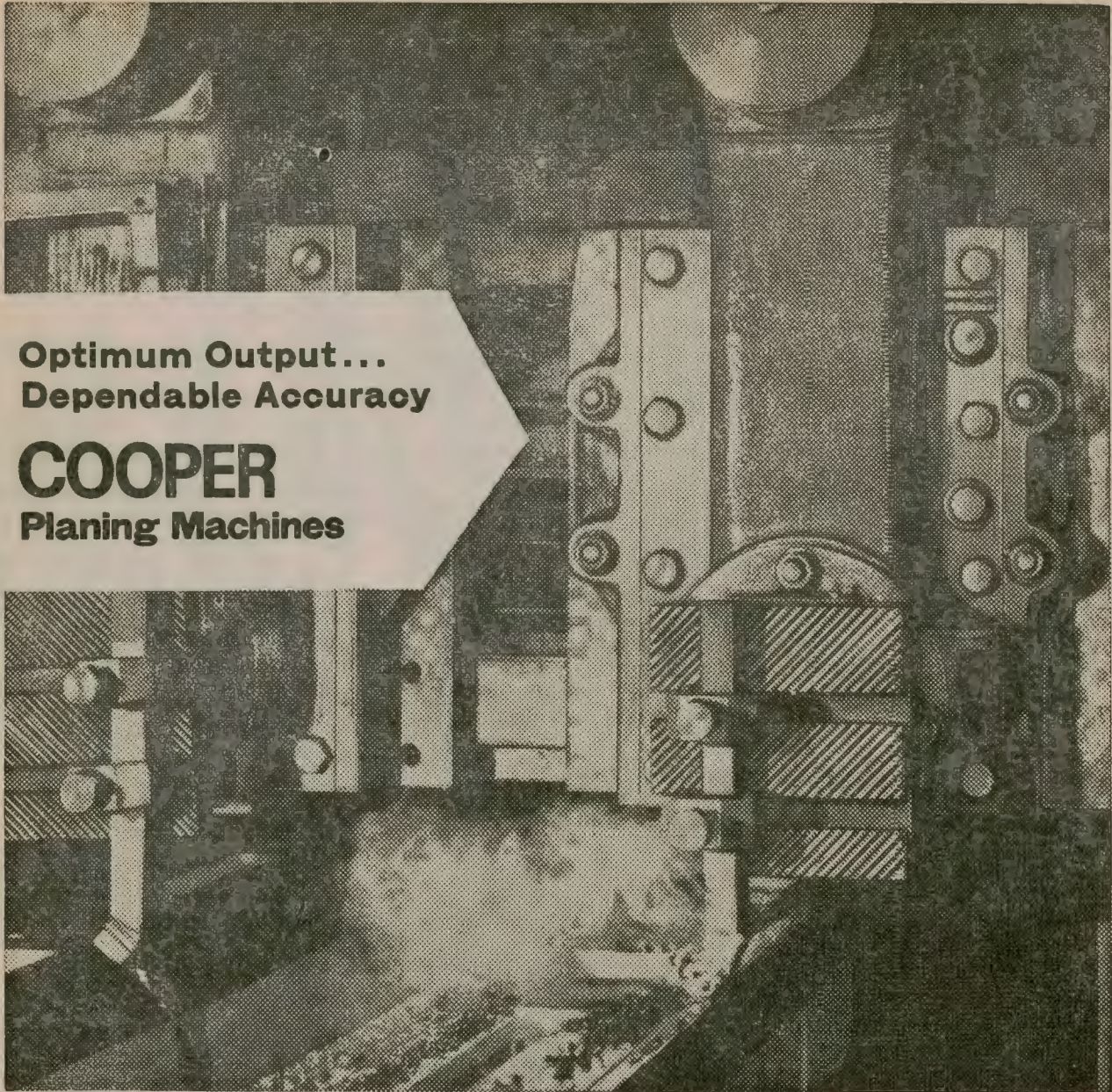
Three broad conclusions emerge from this. First, a developing country will reach assisted take-off with foreign aid and the proportion of foreign-held debt may be, on the safe side, as large as 50 per cent of total debt. Secondly, unassisted take-off is possible if the country can export 15 to 20 per cent of its national product. And lastly, a combination of foreign aid and high export growth will take the country more quickly to take-off.

An examination of trade figures indicates that the case for unassisted take-off in India is weak. In 1950-51, we exported only 6.3 per cent of our national product. Since then it has fallen to 4.5 per cent in 1960-61. It is expected to fall well below 3 per cent by 1975. Most of our exports composed of goods the world prices of which are falling, and the rest are largely handicapped by increasing costs and prices. According to the

to the case of some countries where foreign aid had supplied around half of the total capital formed.

The growing dependence on aid in the form of loans rather than private foreign investments has, no doubt, aggravated the problems of debt servicing. For the loans contracted till the end of 1966, these charges would average Rs 300 crore a year during the Fourth Plan. We are exploring the possibilities of consolidating debt, expanding repayment periods and refinancing of debt. The problem of debt servicing should be faced squarely. It must be noted that the mounting service charges cannot be managed entirely by the normal export growth. The magnitude of the problem of debt servicing would have been very small if we had put the emphasis on private foreign investment on a commercial basis.

The final solution, however, lies in the new philosophy of foreign aid, "from each area according to its resources, to each area according to its needs".



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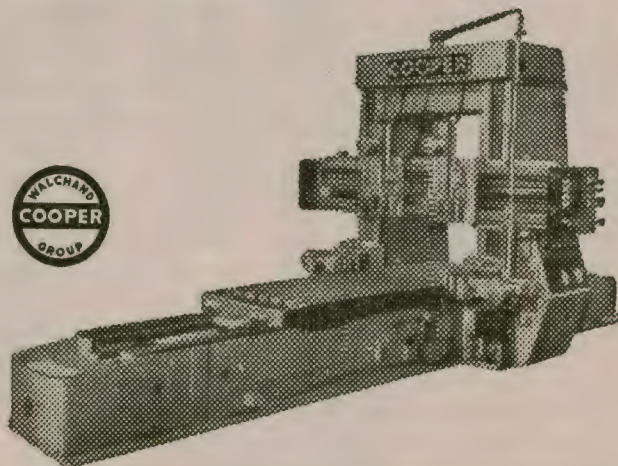
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SCIENTIST HAS A ROLE IN ADMINISTRATION

RAM K. VEPA

Two important pronouncements have been made in recent months by two distinguished individuals on the role of scientists and technologists in administration. Speaking on the occasion of the Fourth J.N. Tata lecture at the Indian Institute of Science, Bangalore, Mr J.R.D. Tata pointed out that the scientist has virtually displaced the politician, the warrior and the priest as a major agent of social change and went on to ask the significant question: "Should he not (then) play a major role in policy-making and in planning the social and economic evolution of society?" After enumerating the many contributions science and technology have made for the progress of mankind, Mr Tata invited science "to march into the citadels of power and re-orientate that power from political ends to worthwhile and beneficent ends...to shape the pattern and techniques to the solution of human problems". He, however, cautioned that if and when the "levers of power" come into the hands of the scientist, he should not restrict himself to the purely technological problems, but continue to partake in the ferment of ideas.

The questions posed by Mr Tata are of such basic importance that it is necessary to analyse them in some depth. In an age which is primarily technological in its motivation, is it not proper that the crucial decisions affecting the community should be made by persons who are well-versed in that discipline and if so, how does one bring about this desired transformation in the nature of the power elite that governs the society? Even

after such a transformation is achieved, how should the scientist-administrator function so that society is benefited by his wisdom and awareness of the new forces?

Lest Mr Tata's pregnant words be dismissed as those of a wishful thinker, it is comforting that much the same ideas were expressed by the Prime Minister herself recently at the Indian Institute of Technology at Delhi. Referring to the co-existence of bullock carts and jets in India, Mrs Gandhi said that this phenomenon, far from being comic, was a tribute to the ability of the scientists and engineers. She spoke of the differences that seemed to arise often between the scientists and bureaucrats and quoted a popular saying that "a scientist in Government is worth two in the laboratory", meaning, presumably, that scientists were required not merely in the laboratory but also at policy-making levels in administration, a point which Mr Tata had also made.

CIVIL SERVICE

The administrative apparatus in India obtaining today is largely a legacy of two centuries of British Rule. It rested on a great deal on the "steel frame" of the Indian Civil Service, and now rests on the Indian Administrative Service. That these services have served the country well in the two decades since Independence is beyond dispute; they have provided, in the midst of much confusion and uncertainty, an element of stability and continuity that has enabled the country to weather many storms. To have consolidated the political

The concept of a general administrator who can administer the portfolios of oil as well as family planning, steel as well as education does not hold good in present day India. There is need for a conscious building up of a more professionalised and technologically-oriented cadre of administrators.

unity of the country, amidst the welter of princely states that abounded when the British left, to have conducted four general elections and two censuses and to have made impressive progress on many fronts are no mean achievements for which all concerned can take credit. In the midst of the self-deprecation that is the current mood in the country today, it is good to realise that the record of the civil service is not inconsiderable.

But the critics have a point when they ask: set against the many needs of the people and considering the tremendous progress made, not merely by such countries like Japan, Germany or Italy, but even by Asian countries like Taiwan, Korea, Malaysia, or even Pakistan, is it enough? One of the reasons for the comparatively poor performance of the Indian economy is that our administrative apparatus has not changed with the times and has not been made suitable for the changed concepts of governance. The appointment of the Administrative Reforms Commission (whose labours are shortly to come to an end) is a tacit recognition of the need for a new look at our administrative structure. The recent report of the Fulton Committee in the U.K. has also made it clear that even in that country, whose Civil service pattern closely parallels ours, there is a new awareness that a drastic change is necessary if it is to function as effectively as it did in the past.

The problem of administrative reforms is a vast one which involves many facets but fundamental to the problem is the question of personnel, for, ultimately, the quality of the administration is determined largely by the nature of the persons it can attract to itself. If the Indian Civil Service has been regarded as one of the six best in the world (in the estimate of Paul Appleby) it has been largely due to the rigorous selection of candidates assisted by systematic training and assumption of wide responsibilities at a young age. But with a large proportion of our young people seeking scientific and technological careers, the choice for the administrative services tends to be severely limited and coupled with the large annual intake, the standards of recruits in recent years have not been uniformly good.

SCIENTIFIC MINISTRIES

Further, it seems somewhat ironic that with technological consideration playing an increasingly greater part in Government decisions, there had been no conscious attempt to provide avenues for scientists and technologists to come into the administration at various levels. In Ministries such as Steel, Petroleum and Chemicals, Industry or Agriculture, most decisions have a scientific content for which a broad knowledge of the discipline is indispensable in tendering correct advice to an admittedly lay Minister. Even if it is conceded that the administrator need not be a specialist, he has to have enough knowledge of the subject to be able to appreciate fully what the specialist says. It is this what the Prime Minister meant when she talked of a scientist in Government being worth two in the laboratory.

Only once after Independence has the administrative cadre been enlivened with fresh blood drawn from diverse disciplines; in 1956, an emergency recruitment was conducted based on a qualifying examination and interview and of the 100 odd then selected, many had not only advanced scientific and technical degrees but had attained some recognition in their professional fields. Now that a decade has passed since they came into the service, it would be useful to make an

objective assessment of their performance and to compare it with that of the pure generalists. There is no doubt that it would reveal that many of these recruits had brought to their jobs a broader interdisciplinary outlook leading to a better all-round performance.

But to make such a selection once in a decade is not adequate; there ought to be periodic and fairly frequent recruitment to the general administrative cadre of persons from various disciplines and particularly from the technological field and fit them into appropriate layers of decision-making. It is reasonable to assume that such persons will display a greater comprehension of the technical facets of the country's problem than one who has only delved into the mysteries of English literature! Public administration must be recognised in this country (as in fact it is so in many Western nations) as a common pool to which many professions can and must contribute... and not just the monopoly of a small group versed in the Classics or Humanities.

However, it is not enough merely to recruit scientists and technologists into the general administration but they must be given sufficient opportunities for enlarging their administrative acumen as well as their professional expertise. For this purpose, the old concept of a generalist administrator that can flit gracefully from Oil to Family Planning or from Steel to Education is somewhat outdated. There is need for a more conscious and methodical placement programme so that administration becomes more professionalised and the "Technocrat" can over a few years build up a rich mixture of technology and administration that is essential in today's world. Such cadres can be consciously built up within even the existing framework and would help to bridge the dichotomy that seems at times to exist between the specialist and the generalist. And it is the administrator of this type that will largely determine how well Administration in India is able to meet the challenge of the complex times in which we live.

QUOTATION BOX

"C.M.F. Suratgarh; Age 13, pulse rate and heart beat subnormal, blood pressure alarmingly low, guardians' vision very poor. Diagnosis: a case of malnutrition and 'acute bureaucratitis' combined with politicasteritis".

—From "The Hindu"

Heckling is a British term, and it is something of an art in which speaker and audience debate one another.

—Lyndon Baines Johnson

People who travel by suburban locals in Bombay perform a miracle every day of their lives by just remaining alive at the end of their journey.

—From a letter in "Blitz"

American females are awakening at last from the stupor caused by centuries of male oppression and have started a new petticoat revolution with this stirring call: "Women of America, unite! You have nothing to lose but your men."

—From "The Times of India"

In London every other person, young and old, has long hair. Gone are the days of the close crop. Hair covering a man's mane and shoulders is the rule rather than the exception so that it is difficult to distinguish man from women.

—J.D. Singh in a news report

A tax break is an exemption when it applies to us and a loop-hole when it applies to others.

—A letter in "Time"

One cannot hope to understand an author if one cannot even pronounce his name.

—Vladimir Nabokov

Nearly three years ago, when the Education Commission submitted its report to the Minister of Education, Dr. D.S. Kothari, in a prefatory letter, apologized for the size of the report. "It could have been shorter," he wrote, "but that would have cost more money and time, and delayed action." (The quip was first made by Pascal who once wrote: "I have made this letter longer because I have not had time to make it shorter.")

—Prof. V.V. John

There are so many men's lotions these days that the well-supplied male must decide whether he wants to smell like a saddle, a wild animal, a secret agent, a sailor, a moon-shiner, a business executive, a king—or witch hasel.

—From "Redwood Gazette", U.S.A.

THIS INDIA

YOJANA invites contributions to this feature from its readers. Each anecdote must be true to life, of less than two hundred words, capturing something significant of India's rich and varied life. Each published anecdote will be paid for.

Not long ago, I was waiting for a bus in front of National Archives of India at Janpath in New Delhi. Fierce glare of the mid-day sun was right on my head. As I turned back to look for a shady place, I saw ten middle-aged women, sitting closely in a straight line, their faces towards the sun. They had water-filled pots in front of them.

I asked them why they did so. They replied: "We are praying to goddess Sheetla Mata to save our children from small-pox. We pray for you also. In fact, for everybody."

"But why in the open and with water like this?"

"Why, this is according to the scriptures. We offer this water to pacify Mata's wrath and pray to her to bless her children with health and happiness."

"Are other women also doing the same?" I enquired.

"Yes, all over Delhi. Come on Saturday. A big yajna will be held under that big tree near India Gate. Now get out of the way and let us pray," said one of them.

Then they bent their foreheads and touched the earth. After some-time they got up and emptied the pots with their eyes fixed on the sun. As they turned back, I could see that their faces glowed with a sense of fulfilment and calm.

New Delhi

RAMA KANT

Daily I saw someone picking up something from the road outside our office but never bothered to enquire. One fine morning around ten o'clock, a PWD jeep rushed to the scene and caught hold of the "stealers". Their thick bags were searched and to everyone's surprise these contained dry pieces

of bitumen tar. And, the "stealers" were none other than the local Post Office employees. But why on earth were they doing so? They hadn't had the sealing wax without which the mail bags could not be despatched, it was explained. They had discovered that the bitumen pieces could be used for sealing the precious mail bags.

Kozhikode

P.G. BALAKRISHNAN

In Tamil Nadu, the Lottery ticket-selling agents adopted a new method to sell tickets. At the platforms, the agents collected ten paise from each commuter by giving tokens and after collecting from ten individuals they would draw out a number. The person with a winning number would get the one-rupee Lottery ticket, by giving ten paise only. And others would not mind losing ten paise. A lottery within a lottery!

Vridhachalam K. THIRUVENGADAM

It was my grandfather's death anniversary. As usual, two Purohits were invited to chant the Mantras and perform the necessary rituals, which they faithfully did. Everyone was pleased that the departed soul was satisfied and 'fed' properly.

As the priests sat in the parlour, digesting their lunch, I asked them what the idea was in performing the ceremony. The learned brahmins explained that the departed soul would be invited on that day by reciting Mantras and that whatever the deceased liked best during his life-time in this world, would be fed to the brahmins. I told them that my grandfather was a smoker and liked cigars most and enquired of them why cigars were not offered to them to please the departed soul. The priests were obviously not pleased.

Hyderabad

P. GOPAL RAO

Recently one Very Very Important Person connected with the State's Education presided over a specially convened meeting of the college principals to assess latter's views on the recent legislation regarding the introduction of regional language as the medium of instruction at all levels. The VVIP in his address was categorical about the Government's keenness in implementing the proposal right from the next academic year.

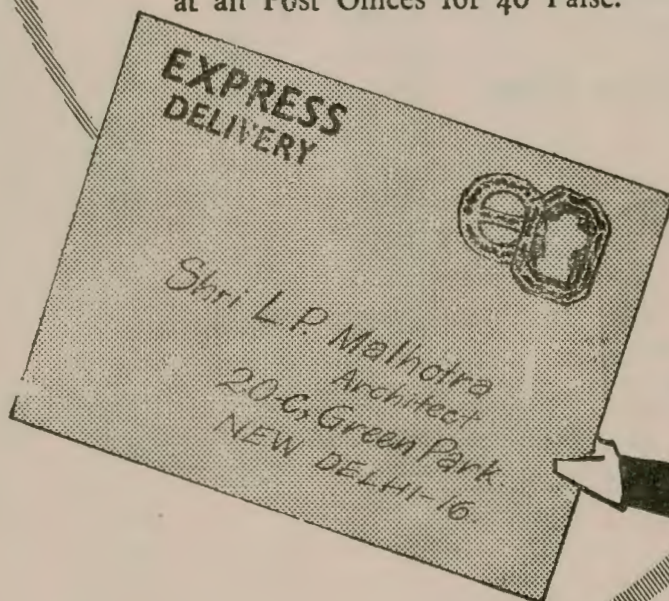
After the meeting, one of the press reporters finding the VVIP in a jovial mood, asked: "Sir, now that you are for the vernacular as the medium of instruction, would you transfer your daughter from the English medium school to some..." Before the reporter could conclude, the VVIP answered: "Oh! That question has to be decided not as a policy-maker but as a father."

Kodaikanal

A. XAVIER

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YIELD

Agriculture has been given top priority in Planning. The author here discusses the "other problems" which have to be tackled so that the extra 30 million tonnes of grain can be produced.

THE core of the Draft Fourth Plan for agriculture is an enlarged and revised version of the high-yielding varieties programme. This is being relied upon to produce two-thirds of the extra 30 million tonnes of grain expected each year by 1974. This means jacking up India's output of foodgrains by nearly as much as a third over the present level of 98 million tonnes. Can this be done?

The answer to this question must be looked for in the strengths and weaknesses of the high-yielding varieties programme itself. The strategy underlying the programme is fairly simple. It relies for its success on the operation of a self-

generating dynamism. The new high-yielding varieties make a striking addition to the progressive farmer's income. This acts as a powerful motivator, driving the farmer to do everything he can to learn the new techniques the moment he becomes aware of their possibilities.

In the process, he also begins to exert powerful political pressure to ensure that the other inputs required to produce higher yields are made available. The existence of these pressures is substantial reason for believing that both the Centre and the States will make a determined effort to satisfy the material requirements of the pro-

gramme in the Fourth Plan. As it is, the last year provides ample evidence of the energetic efforts that have been made to plug the loopholes.

The outlook for the supply of fertilisers is a good deal more optimistic now than it was two years ago. The search for additional sources of credit for the cultivator is being kept up. The seed production programme is at last receiving the attention it deserves. The problems of relative over-production in the short run are also being taken in hand. The term over-production is used here to connote a level of production that is in excess not of India's requirements but of the handling capacity of its purchase, storage, transportation and distribution agencies. Several States have initiated ambitious storage and village road construction schemes, and popular demand can be relied upon to exert pressures leading to similar developments elsewhere too, as and when the need arises. There is also evidence that the country's research institutions and agricultural universities are not neglecting the disease control and other problems that invariably follow the widespread use of imported strains.

OTHER PROBLEMS

All this augurs well. But the problems of a developing agriculture are not limited to ensuring adequate supplies of tangible inputs and services for which there is an immediate and effective demand. There remains a sizeable list of other problems.

Unless taken in hand, some of these will almost certainly make it impossible to produce an additional 30 million tonnes of grain by 1974. As it is, the high-yielding varieties programme is way behind the original targets set for it. By 1971 it was to have lifted the production of foodgrains to 120 million tonnes. This is 20 million tonnes more than is being produced at present.

One obvious clue to the gap between Plan and performance is the alarming discrepancy between the

Key Role of Power and Irrigation Engineers

results obtained by growers in different areas from the same high yielding varieties. The original programme was intended to cover 39 million irrigated acres in selected areas which already produced roughly a tonne of grain per acre, to begin with. Under the impact of the new strategy their output was expected to rise to roughly two tonnes per acre.

But it is now clear that only a handful of districts have been able to produce the additional tonne of grain. The rest are lagging behind, because of a glaring underestimation of the water requirements of the high-yielding varieties programme.

It was taken for granted that any district with a reasonably good canal network, which could provide the older *desi* varieties with all the water they needed, could just as well serve the requirements of the new varieties. This was a grave error. The presence of a canal network does not mean that every cultivator who requires water can get it when he needs it. A distributary, which is only capable of carrying a certain amount of water at a time, cannot simultaneously meet the requirements of all the farmers located on its right as well as its left bank. Each has to wait his turn. Very often weeks pass between one watering and the next, and this, as far as the extra-sensitive high yielding varieties are concerned, is a hopeless state of affairs.

SUPPLEMENTARY FACILITIES

In the long run, the ideal answer to the problem is, of course, to supplement existing canal irrigation facilities with tubewells over as large an area as possible. This is precisely what has been done, and with such excellent results, in a few districts such as Ludhiana, Tanjore and West Godavari. But in the short run, the availability of resources remaining what it is, no such programme is ever likely to get off the ground. More tubewells need more power and this is expensive. The total bill may amount to Rs. 1,000 crore before existing canal facilities in even a third of the new strategy area are adequately reinforced with lift irrigation. Compared with this, the amount the Planning Commission has been

able to spare for minor irrigation schemes is only Rs 475 crore. This gap is, in my opinion, perhaps the weakest point in the Fourth Plan proposals relating to agriculture.

In the circumstances, it becomes all the more necessary to tackle the problem on another front, with the same swift and purposeful energy that the Centre and the States have in the last year brought to bear on easing the supply of fertilisers, after realising that shortfall of, say, 100,000 tons of nitrogen could reduce the potential production of foodgrains by 1.5 million tonnes. Everything possible must be done to make sure that the management of existing supplies of water in the districts is effective in practice, and not just in theory. This might sound a bald statement but the difference involved is vast.

WATER EFFICIENCY

What passes for water supervision at present is a near disaster. By the time a gallon of water from the reservoir reaches a Kalyan-227 seedling in the progressive farmer's field, as much as 75 to 85 per cent of it is lost along the way. What is called the overall efficiency of water utilisation is as low as 10 per cent in this country. An available supply of water that is enough to irrigate four times the present canal-fed area is thus quite needlessly thrown away.

The greatest loss takes place not during the hundreds of miles that are travelled from the reservoir but on the very last lap of the journey, the 30 odd minutes from the main channel to the farmer's field. Rapid evaporation, undue seepage, ignorance of plant-water relationship, light top soils, poor lining, imperfect levelling, unscientific slopes, badly planned field lengths—each of these takes its cut. Between them they rob the gallon of as much as 60 per cent of its content.

It is this loss that needs to be dealt with first. What is possible is outstandingly illustrated by Israel which has achieved a 70 per cent water efficiency. In India's case, a mere 5 per cent increase in efficiency from 20 to 25 per cent would automatically increase the present commanded area or, alternatively, the amount of water available to plants,

by as much as a fourth.

The real deficiency here is not the lack of funds or facilities. The problem is one of not making use of the right personnel. What is called for is an abrupt shake-up in the staffing and recruitment patterns of the Irrigation Departments in the States. The exclusive employment of civil engineers will no longer do. In fact it is harmful. Their training equips them to manage dam sites, headworks and main canals. It does not provide them with an understanding of the cultivator's requirements. Nor does it equip them to teach him how to get the most out of his quota of water once it actually reaches his field.

As a result, all too often civil engineers chart out water distribution schedules that are models of mathematical perfection, rotating equal amount of water to cover all four points of the compass in a stipulated "command area". But a uniform amount of water at certain arbitrarily fixed intervals is not what the cultivator needs. What he wants is just the right amount of water at just the right time, in order to get the best from his high-yielding varieties. This is not an impossible task. It can be achieved by staggering and regulating planting and sowing schedules. But this calls for planning for the kind that can be undertaken only by someone whose training combines a knowledge of both agriculture and engineering.

But incredibly enough, irrigation departments are still a long way from recognising the importance of this dual-purpose figure—the agricultural engineer—either as an executive officer who has a say in the drawing up of distribution charts, or as an extension agent responsible for keeping cultivators informed of optimum water utilisation and efficiency techniques. Ideally, an irrigation department should consist of equal numbers of civil and agricultural engineers. The sooner a start is made towards bringing this about the better. The key to higher yields now lies not in the hands of the farmer and the research scientist but in those of the country's power and irrigation engineers.

Courtesy : News Services Division,
All India Radio

ASIAN HIGHWAY

A Continuous Link Through Fourteen Countries

S.C. Bhatt

A motor rally is normally a sporting event and, therefore, of limited interest. When, however, the rally embraces several countries and the underlying purpose of its organisation is not merely to promote motoring, it becomes a subject of much wider interest. The recent Vientiane-to-Singapore motor rally over a distance of 2,880 kilometers was an event of still greater significance.

The rally was timed to coincide with the annual session of the United Nations Economic Commission for Asia And The Far East. This body had itself sponsored the rally. The object was to give the first physical demonstration of the fact that Asia now has a highway spread across its length and breadth. A highway is not only a link between places, between towns and villages but also a means of developing commerce and industry as well as promoting cultural exchange. Over long phases of its chequered history, Asia had its caravan routes, and travellers went from country to country. But during the colonial era, these land links were snapped. Road development had been neglected within each country, so that when it came to a matter of linking up the national highway systems of different countries, it was found that the first task was to expand the highway system within each member state and strengthen it wherever the deficiencies existed.

THE HIGHWAY PROJECT

ECAFE is often accused by some inadequately informed critics of just talking and doing nothing. But it is justly proud of its Asian highway project. Over the past years,

it has stimulated interest among member-countries and the developed nations as well as other aid-giving agencies in the development of the road networks of Asian countries which form the links in the chain called the Asian Highway. The highway is a project to provide a continuous link through fourteen countries lying in the land mass of Asia. It extends from Turkey to Vietnam in one direction and to Singapore in the other. In between, the Asian Highway branches off from India to Ceylon in the south and Nepal in the north.

Starting from Turkey where it meets the European network, the highway crosses Iran from where it goes in two directions—one to Afghanistan and the other to Pakistan. Passing through India, the highway branches off in a southward direction, towards Ceylon, while the main route goes along eastward towards Nepal and East Pakistan. Again entering India, the Highway moves to Burma and then on to Thailand from where one route goes straight to Cambodia, Laos and Vietnam and the other southwards to Malaysia and Singapore. The main route called the Asian Highway-One from Turkey to Singapore, is some 12,800 kilometers long while the route from Turkey to Saigon, called Asian Highway-Two is nearly 11,000 kilometers long. The total route length, including the national networks linked by the main routes is several times larger.

MISSING LINKS

Thanks to the Highway project, several Governments have paid special attention to the early development of the roads forming part of it, or linked with it. ECAFE now estimates that 193

per cent of the main routes and 83 per cent of the total route mileage is now ready to the point where it comes up to the minimum standards laid down by the Commission. Even so, some links are still missing. These are in Iran, Nepal, Burma and East Pakistan. At places, as in East Pakistan, the roads are ready but the intervening rivers have not been satisfactorily bridged. There, it is hoped, adequate ferry services will be provided to keep up the continuity of the Asian Highway.

The recent Vientiane-to-Singapore car rally helped to highlight the importance of the Asian Highway and its great potential to the economic progress of the region. As the date for the rally drew near, Thailand was led to upgrade sections of the route passing through its territory which needed this attention. Similarly ECAFE authorities hope that the missing links along the entire route will be made good as the time for the proposed Asian Highway rally from Turkey to Saigon draws near. This is hoped to be organised for the ECAFE meeting in Kabul in April next year. Already, the ECAFE has been able to attract the attention of the Japanese Automobile Association as well as some organisations in Europe. These bodies have offered to collaborate with ECAFE in organising the entire route rally and possibly extend it to Europe. There are also possibilities of the rally finishing in Osaka in Japan where the next World Fair is due to be held in 1970. For that purpose, the vehicles will have to be transported from Saigon to Japan by sea. The fact that an Asia-wide rally will be attempted is itself proof of the success of the Asian Highway project.

BUS & TRUCK SERVICE

The rally from Vientiane to Singapore passed through four countries—Laos, where it started, Thailand, Malaysia and then the city state of Singapore where it finished. The 138 vehicles which completed the entire drive, included two trucks and one bus. The economic potentialities of the route have been immediately grasped by the Japanese. A Japanese business firm has begun a feasibility study

of running a bus and truck service along the length of the entire four-nation highway. For a successful business venture, the customs and transit formalities will have to be reduced to the minimum and trained staff will have to be provided for this purpose,

This should not, however, deter the ECAFE and the countries involved in pushing through with the roadway scheme which will do a great deal of good not only to trade and agriculture but also benefit the traveller of moderate means. For even in this age of jet travel, the vast majority of people, particularly in Asia, have to stick to the more modest and cheaper form of travel. Recently, during my visit to Vientiane I met several Indians working there who had reached that rather remote city by ship from

Madras to Penang in Malaysia and then by railway and car from Penang to the Laotian capital. There are many more travellers in that category from different countries who would welcome the institution of a bus service on a regular basis on that route. What goes for that section goes for other parts of Asia too. The Asian Highway could act as a spur to the development of truck and bus transport in different sectors of Asia across national frontiers. It is through such projects that the concept of Asian regionalism will be given concrete shape. India has given her full support to the Asian Highway scheme and even encouraged the Vientiane-Singapore rally by donating a Cup.

*Courtesy : News Services Division,
All India Radio*

First Industrial Estate in Iran

The first tenants have moved into the newly constructed factory blocks of Iran's first industrial estate at the provincial city of Ahwaz.

The two small industries—one will produce grinding wheels and the other neon signs—are starting off with an initial investment of \$10,000. Other people getting ready to move in include manufacturers of such diverse products as commercial refrigerators for food shops, vacuum flasks, agricultural machinery, ready-made garments, steel structural materials, electrodes and tyre retreads.

The estate, intended as the forerunner of a network of similar establishments, was set up with assistance from UNDP and UNIDO under a two-phased project.

At the present time the Ahwaz estate consists of six factory buildings with business offices attached, a general administration building, a central services workshop with laboratories, pattern shop, foundry and storage warehouse. Six more factories are to be constructed.

Land Reclamation in Syria

Syria has launched a massive scheme to turn the 180,000 acre Ghab Valley into a fertile, highly productive plain. The scheme is being implemented with the assistance of FAO and the United Nations Development Programme.

The Ghab Valley lies south of the major city of Aleppo between the parallel mountain ranges of Amsarieh and Zawiyeh. The prospect of opening up this area became a reality when soil experts discovered in 1949 that the stretch of water was not a true lake but was formed as a result of a landslide which blocked the northern end of the valley. In 1956, a Dutch company blasted out the barrier of rocks and earth and restarted the normal flow through the valley of the River Orontes. Regulations of the river by two big dams, one at Mahardeh and another at Asharneh, resulted in the total disappearance of the "lake" and the emergence of large tracts of cultivable land.

In 1963 a team of FAO experts came to Syria to assist in regenerating the land. Four years later the work of transformation had started. Fields of cotton, maize and barley began to appear. Some areas even

proved highly suitable for wheat. Small settlements began to take shape.

PILOT AREA

A 250-hectare pilot area was established in the northwest part of the valley. In this experimental tract, a co-operative farm lay-out was devised, crop rotations were tried out, co-operative use of agriculture machinery and irrigation facilities was tested and a network of irrigation channels and shallow drainage pipes installed.

Under the scheme which has entered its second phase, villages will be planned. Farm holdings will be marked out and allocated; improved farm layouts as well as more productive agricultural and livestock practices will be introduced and a system of field irrigation works will be installed and private holdings re-distributed to fit new irrigation patterns. Special attention will be given to training a team of Syrian engineers and technicians including land settlement officers, agricultural and irrigation engineers, agricultural economists, surveyors, extension experts and co-operative officers.

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A POET REMEMBERED

MAY 31, 1969, marked the 105th birth anniversary of the American poet Walt Whitman whose poetry has a special appeal for Indians. It breathes the spirit of Indian philosophy and senses the stirrings of divinity in the common place and the common people. Though the space of almost an age separates us from him, Whitman's denunciation of slavery and enunciation of democratic freedoms and international brotherhood hold good for the Space Age too.

Walt Whitman was born in 1819, the second of nine children, on the family farm on Long Island in rural New York in the town of Huttington. His father was a farmer of meagre means and his mother was not an educated lady. Whitman's childhood, none too happy, was spent among the sturdy, uneducated people of the working community. At the age of 11 Walt left school to work as an office boy. A year later he became a printer's apprentice in a newspaper office. At 15 he was appointed a compositor and by 20 he was a promising reporter. For a short period he edited the Brooklyn newspaper *Eagle*, until he was dismissed for opposing the extension of slavery into new States.

From his childhood Walt seemed to yearn to be in the company of nature and simple folk. The urge to wander about kept Walt on the move. He loved people and crowds and wanted to know the mind of the average man. Walt's long walking trips brought him in touch with people of many races, colours and beliefs.

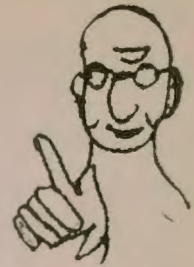
All of Whitman's poems, numbering about 423, are collected in a single anthology titled *Leaves of Grass*. But when it first appeared in 1855 the book contained only 12 poems. He had to publish the first collection at his own cost. Very few copies were sold. The second edition had 32 poems. By 1860 the book had swelled to 132 poems. There were at least 10

more editions before the last one—published in 1892 (the year of Whitman's death). Whitman's poems have been translated in about 25 languages including Tamil. One of his eminent contemporaries, Henry David Thoreau noted that Whitman's poetry was "wonderfully like the Orientals".

Except for a few encomiums, Whitman's debut as a poet was heralded with the most bitter criticism. A leading critic denounced the anthology as "a heterogenous mass of bombast, egotism, vulgarity and nonsense." While Whitman's critics failed to find in his verse any musicality and refinement, his admirers were struck by the vigour, robustness and exuberance of Whitman's feelings and expression. Whitman took upon himself the task of being the spokesman of the common man who had never before been thought fit for the role of the 'hero' of 'polite verse.'

Whitman was a great democrat. He was an avowed enemy of all social, cultural and racial divisions. The national ideals of the United States were a part of Whitman's personality and have found eloquent expression in many of his poems. This feeling of identity that Whitman expresses with other human beings and with the universe as a whole, through his poems, is strikingly similar to Indian Vedantic thought. In 1871 Whitman wrote his poem "Passage to India," propounding the regeneration of the human race by uniting the spiritual wisdom of the East with the materialism of the West.

Whether through prose or poetry his ideals of liberty, democracy and equality always found eloquent and insistent expression. Even as he lay dying in 1892, Walt Whitman scrawled, painfully, his last message reiterating: "More and more it comes to the fore that the only theory worthy of modern times for great literature, politics and sociology, must combine all the people of all lands..."



IGNORAMAN

Wants to Know

If Yojana

only preaches

family planning

and not practise it

THE MOOD IS BLACK!

The Japanese are great tea drinkers, who consume millions of gallons of pale green tea every day, with every meal.

Of late, there seems to be a change in taste. The mood now is a preference for black tea, which India produces in great quantity. The Japanese consumed last year 88,000 tonnes of tea, of which 13,200 tonnes came from India.

According to the leader of a delegation of All-Japan Black Tea Association, who was recently in India, Japanese preference for Indian tea is showing an upward trend. And, if India could produce green tea suitable for the Japanese market, importers would place orders in spite of a 35% protective duty on tea imports.





ASPIRING FOR STARS : SAGA NATIONAL DEFENCE ACADEMY

SITUATED 120 miles southeast of Bombay alongside the picturesque Khadakvasla lake is a unique institution—the National Defence Academy, a place which nurtures the elite of India's armed forces, prepares them into the tasks of leadership and sustains a steady stream of man-power of the highest calibre, integrity and resolve who form the backbone of the defence of a country that is of pivotal importance in the Indian Ocean. There we met him—a self-assured, smartly-clad young man of 19. Madappa is his name. He comes from a village in Mysore, where life still centres round the banyan tree and womenfolk bring water from the village tank in earthen vessels. He walked a good many miles to and fro to get his early

schooling. His turbaned father, a goldsmith by profession, was by no means a rich man and could little afford to help his son through college education. Madappa, himself did not know what he could or could not do. He had finished matriculation and felt uneasy staying in the village where he happened to be the highest educated man. His father believed that everything was preordained in life. Madappa, who used to watch planes fly across the skies from the nearby airbase, did not share his father's fatalism. Madappa was right.

While on a visit to Bangalore, Madappa saw an advertisement in a Kannada paper which urged

SARADINDU SANYAL

The 36 h passing-out parade of the National Defence Academy takes place next week on June 7, 1969.

young and able-bodied matriculates to apply for a three-year course of training to prepare for a chequered career in the armed forces. Madappa, his limitations and his father's poor economic conditions apart, took a chance and found his name in print when the results of the successful candidates were out in the papers.

Madappa was happy but his father was sad. He was a poor man and could spare his son nothing more than the fare to Poona. And Madappa's imagination, aspi-

(Top) Gentlemen-cadets at a passing-out parade

rations and ambitions were soaring into the heavens—he had opted for a career in Air Force, while his feet still ached down on ground with the painful thought of being the only son of his father and leaving the old man alone at the hearth, blowing the long iron pipe to melt the gold for ornaments. Madappa braved the parting.

He arrived at Khadakvasla—a boy of sixteen, dressed somewhat shabbily, hesitant, shy and even shaky. He was transplanted into a new world, where everything separated Madappa and his village by centuries. Till now he had lived in a small dingy house, with little ventilation, sleeping on ground, going out into the open for his natural necessities and taking his bath in the village tank along with the buffaloes of Ramanna.

Now, Madappa lives in a well-furnished room, all to himself, is dressed in the most smartly looking service uniform and walks with head held high, confident of his steps and in unison with others. He eats on a table using fork and knife. His food is 5,000 calories-rich and costs Rs 6.50 per day. He enjoys a different menu every day and there are as many menus as are the weeks in a year. And the dining hall where he takes his food is the biggest in the whole country, with a seating capacity of 3,000. Everything from peeling potatoes to washing dishes is done mechanically. The elegantly-furnished dining hall is spotlessly clean.



(Left) Manning the mask

(Centre) Camping outdoors



(Below) Training in horse-riding forms part of the curriculum



He surely now is a different man and that we could see from the difference between his appearance today and that in the photo taken on his arrival at the Academy. The shy boy is a confident officer-to-be, with a wealth of acquisition going into his making.

"What are you learning here?" we asked him.

"Everything", snapped the gentleman-cadet, who might someday reach the peak of the ladder in his chosen career. Madappa, like hundreds of others at the Academy, is really learning everything. He told us that though they are selected for three different Services—the Army, the Navy and the Air Force, they put on the same uniform and live and learn together. An Army cadet learns gliding and aeromodelling; the Naval cadet is trained into route march and the Air Force aspirant does the knots and splice in the sprawling lake.

The training is really broad-based. The Commandant Rear-Admiral R.N. Batra told us: "We want to produce all-rounders." Though the duration of the training is three years, the special training for their chosen career commences only in the third and final year of the course at the Academy and goes on concurrently with the continuing combined instruction, 75% of which is general academic education and only 25% pertains to 'defence'. The schedule includes basic training, drill, physical training, equitation, science, mathematics, history, languages, current affairs, games and sports. A lot of outdoor activities like horse-riding, rowing, mountaineering and camping are designed to inculcate qualities of leadership and co-operation. They learn all the trades from carpentry and smithy to foundry and survey. There is less emphasis on examination and greater stress on overall performance and bearing which are judged from day to day. Commandant Batra told us: "I want discipline to the book but certain amount of exuberance of youth is welcome."

Madappa and every other cadet begin their day at 5.30 a.m. to the echoing sound of "Reveille" and pass through the difficult, strenuous regimen that transforms the shy, teenager into an informed leader of men in times of crises when life or death, triumph or tragedy and victory or defeat hang in delicate balance on one man's decision.

He also enjoys a good social life. With eleven naval cadets from Ghana and five army cadets from Ethiopia, he has an experience in international living. These foreign cadetes have not been lodged separately but distributed among several squadrons. Each squadron of



(Left) Learning cartography

(Above) A cadet learns aeromodelling.

125 cadets is captained by the best cadet in the squadrons.

"Where would you go from here?" we asked him.

"I would buzz off to the Air Force Training College, Jodhpur, while my naval friends will steer themselves to INS 'Kistna' and the Army cadets will make for the Indian Military Academy at Dehra Dun."

"Is not this Academy the same as the one at Dehra Dun?"

"No," said our friend.

In the beginning there was the Indian Military Academy, Dehra Dun, founded in 1932, by the then Commander-in-Chief, Field Marshal Sir Philip Chetwode. During the Second World War, it was converted into Officers' training School in 1941 and was renamed Armed Forces Academy after independence in keeping with their new role resulting from the creation of the Joint Services Wing. Later, in 1949, the Academy acquired its present name.

But why did these changes become necessary? "During the Second War" Madappa told us, "it was found out that army needs air cover and its supplies and reinforcements can

be arranged by the Navy. Inter-services co-ordination is a lesson born of the experience of the Second World War and the Academy at Khadakvasla, conceived on the pattern of the West Point Academy in the United States is based on that principle. NDA has only one parallel in the Commonwealth—the institution in Canada.

The Academy brings together new entrants to the three Services. Apart from the combined and common course of instruction that provides greater and more intimate understanding of each other's operational strategy and role, the associations built up here give defence co-ordination an extra official touch that is we work not only as colleagues but also as friends sharing a host of common experiences and memories. "As we

atories and workshops, stadium and playing fields, hospital, library and museum, cinema and open air theatre, shopping and market centres, power and water supply, parks, gardens and lawns, roads and walks, school for children and staff, canteen and co-operative stores a welfare centre and a post office. The *piece de resistance* of the entire setting is the lavish dining hall. Equipped with electric appliances for preparing meals hygienically, economically and quickly, this is a symbol of the sleek new look of the country's armed forces.

What is the most memorable time of a cadet's stay at the Academy?

Well, Madappa for some time could not decide. His stay was coming to an end. It seemed as

The associations built up at the Academy give defence co-ordination an extra-official touch and serve as bridges and links between the three services.

go up in our respective careers we become bridges and links between our Services."

"How long does it take you to climb up the ladder?"

"We are about 19 when we leave this Academy and about 52 when we reach the top echelons of the Services."

How long has NDA been in existence?

Set up in January 1949, following the recommendation of Auchinleck Committee for a single academy for precommission training of cadets of Army, Navy and Air Force, it moved from Dehra Dun to Khadakvasla in December 1954. The present premises was formally inaugurated on January 16, 1955.

We then followed Madappa on a sight-seeing round of the Academy.

Laid out on a sprawling 7,000, acre area, the Academy is a "unipurpose township", self-sufficient and complete with its own residential quarters, office buildings, lecture halls and training areas, labor-

if the entire period at the Academy is a single moment frozen into his subconscious for eternity. Finally, he gathered himself and said, "Though every moment we spend here remains embedded in our memory, our story reaches its climax in the passing-out parade, which marks the parting, the trifurcation of our associations. Someone gets a gold medal for overall performance while some others shine in academics but all of us look back to the portals of the Academy through which we entered—uncertain and unknowing—and through which we exit into the world of tomorrow. I feel, I have come a long way in life. Probably my father will still say—"This is as was indicated by my stars". Perhaps, he is right. Only that it is now open to everyone in this country to aspire for stars."

He then gave us a gripful of a handshake in the true Services fashion, smiled and as he walked away from us, we could hear the music of a thousand feet marching in unison towards a new destiny.

Miscellany

JEALOUS JOURNALISTS

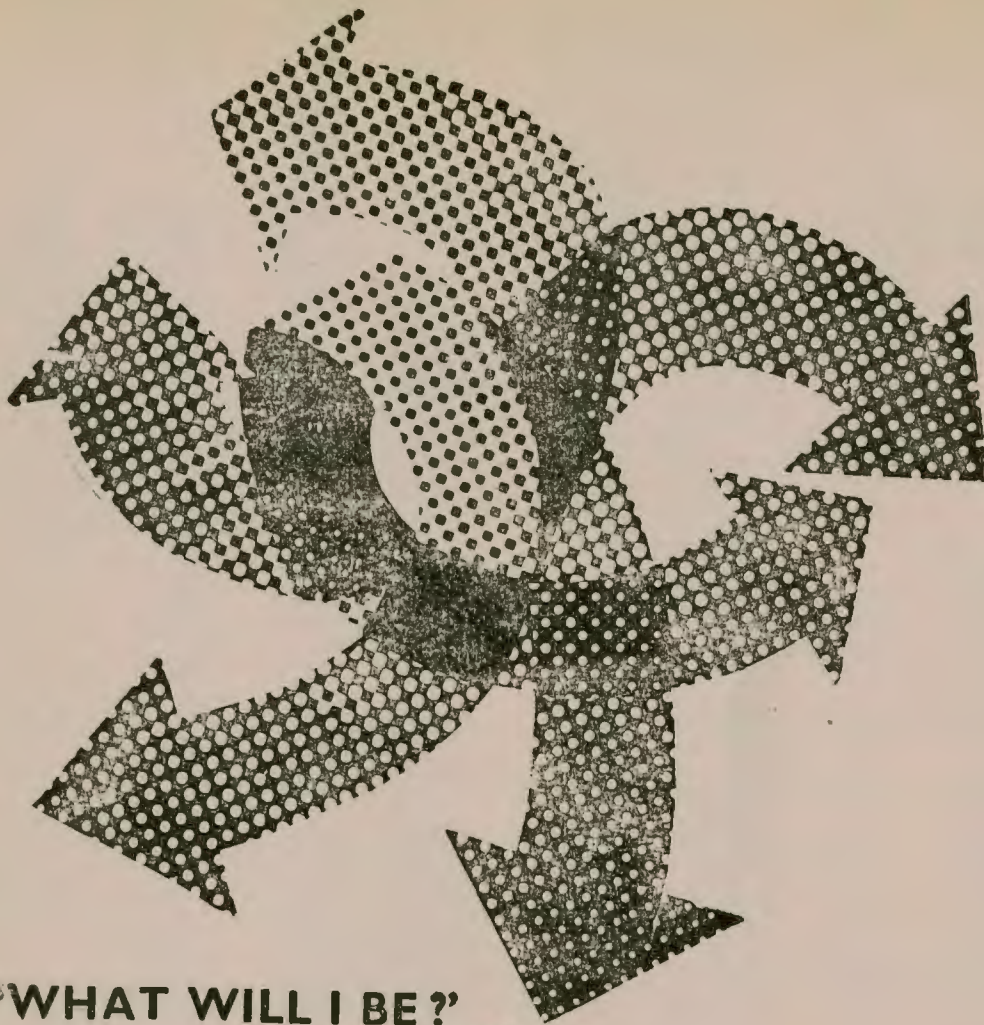
THE conservative 'Le Figaro', one of the most important French newspapers, did not appear on May 19 because of a strike of the editorial staff.

'Le Figaro', which, has a circulation of over half a million, has for the last 19 years been run by an editorial company which leased the publishing rights from the owners of the capital behind the undertaking. The agreement came up for renewal this year and the owners of the capital, and notably, M Marcel Prouvost, wished to be given the chairmanship of the editorial company, thereby, it is claimed by the editorial staff, giving capital a say in editorial policy and thus threatening the independence of editorial judgement.

Mr Hubert Beuve-Mery, editor of the influential 'Le Monde', feels that the incident concerns not only the whole of the French Press but the French reading public also. He says: "Over the past 20 years, an idea has gradually taken root in France that the press should be entirely subject to the laws of ownership and profit. Journalists, whether they like it or not, are subjected to responsibilities which are entirely their own, and if they do not accept these responsibilities they fail in their profession and in the long run hoodwink their readers.

Whatever the form of undertaking, it is necessary that the business side should be properly run. Journalists are not necessarily the most qualified to do this. On the other hand, it is essential that the editorial side should have the right to emphasise and if necessary, impose respect for the moral and intellectual norms for which they work. Both in France and elsewhere, certain Press organs have managed to reconcile these two points of view.

The system under which 'Le Figaro' has worked for the past 20 years has proved satisfactory, even if certain changes must be made, it should be possible to safeguard essentials.



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studies, the National Science Talent Scheme offers attractive scholarships to cover the course of study in college, from 1st year B. Sc. to Ph. D. Similar facilities are available to promising students, for study in India and abroad, through numerous scholarship schemes. Every year scholarships worth Rs. 30 crores are distributed to students in high schools and colleges.

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HOUSING CO-OPERATIVES

NORWAY

THE co-operative housing movement in Norway is a comparatively recent growth. Before the First World War the building industry was entirely in private hands, although at that time housing was not a particularly profitable investment. The years immediately before the First World War saw the emergence of a number of building associations along co-operative lines through which the middle classes endeavoured to solve their housing problem by pooling their own capital. But these were short-lived associations which were wound up as soon as the buildings were completed.

When the housing shortage became more acute during the First World War, local authorities first tried to encourage private investment, and when that failed, they set up their own building departments which catered mainly for the lower income groups.

This system of direct building by local authorities did not work, for the management of building operations and of completed homes imposed a new burden on the administration.

This led to a shift in policy, which began when the city of Oslo decided to stop building municipal housing estates and instead gave

encouragement and aid to co-operative associations. In 1934, the Oslo city authorities gave financial support to the Oslo Building and Savings Association, founded in 1929 but reorganised only five years later.

As members' savings were sometimes inadequate, the Oslo city authorities agreed, in certain cases, to lend the money for the initial contribution so that families without means were not excluded. These loans, repayable in easy instalments, were not made to the associations

themselves, but to the members who needed the money.

It was, however, only after the second World War that co-operative organisation became important in Norway as a way of tackling the housing problem. There were two factors which gave impetus to this development: the large-scale destruction of buildings during the War and the new emphasis in government policy on encouraging the provision or modernisation of housing for the lower income groups.

Taking advantage of this shift in national housing policy, the co-operatives reorganised themselves to improve their operating methods and lowering building costs. This reorganisation led to the establishment of the National Federation of Housing Co-operatives.

By the end of 1959, the Federation consisted of 910 'daughter' societies belonging to 88 'mother' co-operatives in various parts of the country, with a total membership of 122,000. The biggest of the 'mother' co-operatives is in Oslo. One of the world's biggest, the Oslo Co-operative had 63,000 members by the end of 1959, and it is estimated that the number increases by about 3,500 every year.

ORGANISATION

The Norwegian housing co-operatives have borrowed many features of the Swedish movement, and have adapted them to Norwegian needs.

However, one feature which distinguishes Norwegian co-operatives from their Swedish counterparts is their decentralisation. In Norway the 'mother' co-operatives are independent of each other, which is not the case in Sweden, where, 'mother' and 'daughter' co-operatives all belong to the same national organisation. In Norway, the national federation maintains a central secretariat which looks after the interests of the co-operative housing movement throughout the country and provides it with technical, legal, economic and administrative assistance.

The 'mother' co-operatives set up 'daughter' societies consisting of the residents or future residents of their housing estates. On completion of the building or buildings, as the case may be, the 'mother' co-operative hands the homes over to its 'daughters'. It also supplies details of construction costs and submits proposals for the gradual repayment of the loans needed to finance the scheme. It is quite common for the 'mother' co-operative to be asked to manage the estate on its completion.

Unlike pre-war co-operatives, modern co-operatives are open to anyone needing and willing to undertake certain obligations and abide by co-operative rules.

Under Norwegian law, members of co-operatives must contribute towards their capital by buying a share certificate. However, bodies corporate which join co-operatives, e.g., the city of Oslo, are allowed to acquire more than one share certificate, provided their holding does not exceed 10 per cent of the total certificates subscribed by individual members. Usually the latter are required to purchase a share certificate in the 'mother' co-operative as well as in its 'daughter' co-operative. It should be noted that although municipalities or other bodies corporate which care to join can hold more than one share certificate, they may in accordance with co-operative principles only have one vote like any other member.

Co-operative housing is not the individual property of members, nor is it rented in the strict sense of the term. The co-operative re-

tains ownership of the property and allots housing to its members for occupation by their families in perpetuity.

A deceased member's widow or children can inherit co-operative houses in the same way as any other family asset. Before transferring or bequeathing to any person who is not a close relative, the rules require a member to secure the approval of the co-operative management. If a member wishes to leave his co-operative accommodation, the procedure is as follows: If the transfer is not made to a close relative, preference must be given to another member of the same 'daughter' society or of the 'mother' co-operative. If no other member is interested, the accommodation can be transferred to any other person who accepts the rules and undertakes to carry out the obligations involved; this person must also be accepted by the management. In order to avoid any speculation in the sale of rights to live in co-operative houses, the terms of sale must first be approved by the management.

YOUTH CO-OPERATIVES

In 1948, a group of young Norwegians launched a housing movement in Oslo based on spare-time work. This movement began its first housing scheme in 1950 and forms an interesting example of members' own labour playing an important part. It aims at uniting in one nation-wide organisation young people who wish to acquire a home through their own effort and are willing to take part in all the activities needed to build houses for young people. It is also engaged in establishing youth clubs, kindergartens, recreation rooms, playing fields and other community welfare facilities on new housing estates. Besides it gives publicity to the shortage of adequate housing, especially for young people, and to ways and means of overcoming it.

In allotting new accommodation, the decisive factor is the personal contribution of each member in the form of labour. For this purpose, each member has a special book in which he is credited with as many housing points as the number

of hours he has worked on the project.

The 498 members of the movement at that time, contributed 53,000 hours' work. The member who contributed most worked for 1,413 hours, obtaining an equal number of points, and the lowest contribution was 445 hours. Three years later the total contribution by members amounted to 730,000 hours' work, equivalent to about 2 million kroner in value (Re. 1=0.95 kroner).

Nevertheless, by the end of 1933 the increasing complexity of modern building techniques compelled the Youth Co-operatives to change their policy but the idea of personal participation by members in the building work has been retained, especially in the construction of single-family houses. By changing its policy in this way, the association considerably extended its scope and by the autumn of 1958 had completed 2,000 homes.

In order to increase its efficiency, while at the same time reducing building costs, the association has set up its own technical departments at headquarters and has also established contracting firms specialising in various branches of building industry. Since 1957, it has opened its own factories for the production of building components.

FINANCING

The first experiments in co-operative house building were mainly financed by personal contributions and loans from private sources. But after the War, when the housing shortage became one of the most serious problems and building costs rose sharply, the government intervened by supplying low-cost credit to co-operatives and thereby became the main source of finance for the modern co-operative housing movement. On their part, the co-operatives made their organisation and facilities available for carrying out official housing programmes.

It is always the 'mother' co-operative which bears responsibility for arranging finance for a project, although the members themselves must take the initial step by contributing towards the cost of their future homes. The practice in

recent years has been to require members to contribute between 15 and 20 per cent of the estimated cost of the accommodation they require.

After housing has been allotted to members, the Oslo co-operative together with a number of big co-operatives throughout the country, opens another special account to cover the cost of maintenance and decoration. This is based on the example of the Swedish co-operative movement.

VITAL STEP

In 1946, Norwegian Government took a vital step when it established a special bank to assist the building industry. The Housing Bank, as it was called, launched a programme of easy credit involving low interest rates and long repayment periods. The Government also accepted that residents should also be allowed a share in the ownership of the dwellings they inhabited. Co-operatives were given preferential treatment for official assistance through the Housing Bank.

The Bank loans are first mortgages, but are usually sufficient to cover the whole cost of the building or buildings in the scheme. The loan is made over in one instalment. Since 1948 another banking institution, the Smallholders' Bank, which formerly used to operate in rural areas and financed other farming activities as well as house building has been reorganised by the Government and now works in close collaboration with the Housing Bank and along the same lines, although concentrating on rural housing. Loans by these banks are not calculated on the market price of the housing, but are based on the banks' own estimates which, in turn, make allowance for the social aims of the country's housing policy.

REPAYMENT

If a house is built of non-inflammable material such as brick or concrete, the annual repayment is 1 per cent of the loan, which means that the process takes a hundred years. In the case of wooden houses, the annual repayment is 1½%, that is, it takes 75 years.

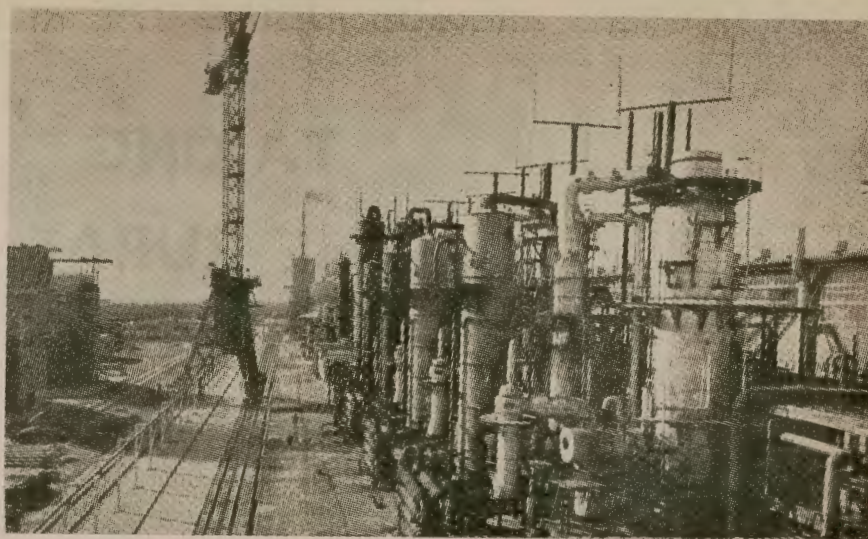
No repayments are made on loans by the Smallholders' Bank during the first two years, and thereafter annual repayments have to be made for 47 years. The annual amount may, however, be changed by the Housing Bank, if circumstances make it necessary, but only after ten years. When these banks began operations, their loans bore interest of only 2½ per cent, but 3½ per cent is charged on all loans granted since January 1957. (The average interest charged by mortgage banks before the Second World War was 5 per cent) The rate of interest charged by the Housing Bank remains unchanged for five years, as against 15 years until January 1, 1957.

Co-operatives financed by the Housing Bank cannot be wound up or change their rules without prior approval by the Housing Directorate, which is the official body in charge of national housing policy.

• SOCIAL SIGNIFICANCE

In 1946, there was an acute shortage of housing in Norway, specially in the towns. It was estimated that, because of the complete standstill in the building industry, between 60,000 and 70,000 homes were needed to meet the needs of normal population growth. Further, 22,000 homes had been completely destroyed by military action. By 1959, the housing co-operatives had 47,000 houses. They were continuing to build at a steady rate of 6,000 houses a year with an approximate value of 276 million kroner. They have also tried to carry out official social policy by taking care not to create separate neighbourhoods for workers, for the elderly or the disabled, or for large families in the lower income groups. They have done this by throwing membership open without discrimination to anyone in need of housing.

Courtesy—Co-operative Information, published by the International Labour Office, Geneva



The Navoi Chemical Works in Uzbekistan

A DESERT BLOOMS

RENAT URAZOV

THE Village of Kermine once lay along the ancient Bokhara-Samarkand caravan route. There was life along the road, but to venture to any distance from it meant to perish in the arid, sun-scorched desert. It was here ten years ago, that the town of Navoi, now a big industrial centre was founded. Today it appears like a mirage, with its tall buildings, broad avenues, large squares and fine architectural ensembles. The town has several cinemas, a hospital, a polyclinic, a stadium, a swimming pool with warm water all the year round, and public service establishments.

Its population of 42,000 lives on more than 300,000 square metres of floor space. Navoi continues to grow. Several sports clubs, a 12-storey building of the House of Soviets, cinemas, libraries and an automatic telephone exchange are under construction there.

The abundance of greenery, the large number of fountains and irrigation canals and the network of

small reservoirs have a moderating influence on the summer heat, which sometimes reaches 45°.

The largest industrial enterprises of Navoi, a capital of Uzbek chemists and power engineers, are a district electric station and a chemical factory, both situated at a certain distance from the town.

The Navoi chemical factory is expected, in the next few years, to move to the top among the factories in the U.S.S.R. producing mineral fertilisers. Most of its workers and employees, whose average age is 27, have a higher or secondary specialised education.

In accordance with Lenin's plan for the country's electrification, a hydro-electric station, with a capacity of 2,000 kw, the first in Uzbekistan, was built near Tashkent in 1926. At present, the daily production of all the Uzbek electric stations exceeds 36 million kwh.

There is a big trend towards building big heat-and-power stations working on natural gas. The Navoi District Electric Station is one of these power plants. Its first turbine with a capacity of 25 kw started generating power in 1962. Now it has six turbines with a total capacity of 450 MW in operation and five more turbines with an aggregate capacity of some 600 MW under construction. The station will continue to expand as the town grows and as its industries develop.

S. C. SRIVASTAVA

TAXING THE RURAL SECTOR

THE proposal to tax the rural sector has given rise to a big controversy. One view is that it is inopportune to tax agriculture till we have reached a stage of self-sufficiency in foodgrains. On the other hand, it is argued that the rural economy is continuously prospering and this sector is not making the required contribution towards the general economic development.

It is a well-established fact that the rural sector is comparatively under-taxed. People in the urban areas having income around Rs 4,000 or Rs 5,000 a year pay more taxes than those with similar incomes in the rural areas. It is estimated that in agriculture, not more than 6 to 7 per cent of the total income is taxed, while outside agriculture as much as 25 per cent of the income is subjected to taxes. The rural sector pays 2.6 per cent of its income by way of taxes as against 17.4 per cent of the net income paid by the urban sector.

Within the rural sector itself, under the existing tax system, the tax burden on the poor farmer is comparatively heavier than on the well-to-do farmer. This is because direct taxes in the agricultural sector are only nominal and the bulk of the revenue derived from this sector is in the form of indirect taxes. Moreover, there is a selective approach in agriculture today. Under the various development programmes, we are concentrating only on 10 per cent of cultivable land with assured irrigation, seeds, fertilisers, pesticides and other inputs. The farmers in these areas are naturally making much more profit than their counterparts on the remaining 90 per cent of the cultivable land. But the taxation ratios are the same for both. In other words, the poor farmers are

subsidising the affluent farmers. This anomaly can be removed by taxing the top 10 per cent farmers a little more heavily.

The Taxation Enquiry Commission had observed as early as 1953 that the level of urban taxation was on the whole higher at all stages of income than that of rural taxation. It said that there was greater room for increased taxation of higher rural incomes than in the case of urban incomes.

A lot of new income has been generated in the agricultural sector and the process is expected to continue. It is only fair that the rural areas should contribute their share to the national exchequer.

TWO DIRECT TAXES

The two important direct taxes levied at present in the rural sector are the land revenue and the agricultural income-tax. The agricultural income tax is in operation in 13 States but it falls largely on plantations only and accounts for not more than Rs 12 crore out of the total revenue of the states of Rs 2,587 crore. The land revenue yields about Rs 120 crore annually. As a percentage of the total revenue of the States its significance is on the wane. It constituted about 26 per cent of the total revenue from the State taxes in the First Five Year Plan, but declined to 17 per cent in the Third Plan and went down to about 10 per cent in 1967-68.

Some time ago, the Planning Commission suggested that land revenue could be enhanced through a graduated surcharge. Far from heeding this advice, some of the

States abolished land revenue on the ground that it is inequitable inasmuch as it treats the big and the small farmers as well as fertile and arid lands on the same footing. Consequently, the yield from land revenue is likely to decline further in the coming years.

It has been suggested that in view of the general poverty in the rural area, we should not tax this sector. This argument is not tenable because when a proposal for taxing the rural income is mooted, the concept of average per capita income is irrelevant. It is a fact that the top 10 to 15 per cent farmers own two-thirds of the total cultivated area. The total income from agriculture in 1964-65 was a little over Rs 10,000 crore and the total area under cultivation was a little over 300 million acres. This means roughly Rs 300 an acre. The big farmers who have a little over 65 per cent of the area under them, account for about Rs 6000 crore of national income. If this income is taxed even at 5 per cent, Rs 300 crore can be collected annually. This would come to Rs 1,500 crore over a period of a single Five Year Plan.

It has also been said that the levy on the farm sector may act as a serious disincentive to the agriculturist and thereby adversely affect agricultural production. This argument, like the previous one, does not seem to carry much force. It should be remembered that a normal rate of taxation does not affect the will to produce. Taxes affect incentive to work only when they cross a certain limit. In fact, a mild dose of taxation often stimulates the assessee to work more and maintain his income.

The crux of the issue is that the problems involved in tapping the rural income are not economic, but mainly political. The rich farmers command complete hold over the rural electorate. They are influential in the political set-up.

It is necessary to introduce soon a progressive tax system in the rural sector and reverse the present system under which the poor farmer subsidises the rich farmer.

Computers in India's Development

Is India prepared for the great Computer Revolution? The author, a young college student, says "yes".

K. JAVANTHEESWARAN

THE computer is one of the most powerful inventions of science. It is an electronic marvel playing an active part in the "Information Revolution" in the world. To-day electronic computers are used all over the world in measuring orbits, controlling and guiding missiles and space vehicles, data-processing, etc. It also helps students do things easily. The computer, which has already established itself in developed societies, is making inroads into developing and under-developed areas of the world too.

In India, the advent of the computer dates back to 1956, when a British-made HEC machine was installed at the Indian Statistical Institute, Calcutta. In 1959, another machine from the Soviet Union was installed at ISI. Some months later the Tata Institute of Fundamental Research, Bombay, designed a computer and put it into operation. In 1964, the CDC-3600 machine became operational at ISI. This is the most powerful computer in India today. Mention may be made of the TDC-12 (Trombay Digital computer) and the OLDAP (On-Line Data Processor) of TIFR (Tata Institute of Fundamental Research). These computers are of limited capacity. The Jadavpur University in West Bengal was the first in India to have a computer installed in 1966 under a joint project headed by the ISI. IBM International Business Machines Corporation of USA and ICT International Computers and Tabulators are engaged in computer production within the country. To-day, there are nearly a hundred electronic computers in use in this country.

The urgency with which our varied problems have to be solved has compelled us to adopt new techniques in managerial and other

fields. Work on data-processing, information-handling, computer circuits, etc. has been undertaken at a number of research institutions and Institutes of Technology. Research on highly-sophisticated computer system is going on at TIFR, Bombay.

Computers solve many of our difficult problems. The computing centre at Delhi, set up by the Government of India in 1967, serves both big and small users alike. More than 60 per cent of the computers in the country are used in business concerns. They are used in data-processing, sales analysis, billing, sales accounting and pay-roll. In banks, they are used in a wide range of transactions. In the Railways, they can be used in traffic accounting and commercial statistics. In the LIC, they are used in policy-servicing and statistics. Volume-handling is not the only job the computers do. They have given impetus to research and development activities in the country. They are being used in diverse fields—medicine, engineering, aeronautics, demography and nuclear physics.

The rapid growth of computerisation in the country has caused many fears in the minds of employees. The question raised is whether computerisation can be sought after in a country like ours, where is considerable waste of manpower. Employees are also afraid that computers will replace them in the not too distant future. Since those replaced by computers have been given alternative jobs, their fear has no basis. But can all those replaced be accommodated elsewhere? There are some other problems that computerisation has brought in its wake. We will need more and more cards, ribbons and magnetic tapes. Some of these items are not available in adequate quantities in the country. Therefore we will have to resort to imports. Computer education also becomes important. More and more insti-

tutes and training personnel will have to be built up at great cost. But our resources are meagre. Another problem is programming. A programme is a series of instructions given to a computer to do something. This will need experts in "computer language." It may be noted here that many Indians have made valuable contributions in the field of computers. The computer has thus come to stay in the country. "In the space of ten years, we have seen the computer evolve from a cumbersome luxury article for solving mathematical problems into a basic economic necessity."

AUTOMATED SYSTEM OF PLANNING

Soviet specialists are developing an automated system of planning calculations. In the long run, it will become the single "thinking" electronic mechanism for all the aspects of the economic development in the Soviet Union.

A Single State net work of computing centres will form its basis. It is planned to establish 800 of such centres in the USSR in the next five years. They will receive information on the situation in the separate branches of economy and enterprises, process this information and thus permit to suggest scientifically-substantiated planning solutions,

- A new process for the manufacture of ceramic pickups, on which depends the quality of reproduction from record players, has been developed at the Central Electronics Engineering Research Institute at Pilani.

- The export of Coir has earned Rs. 14.47 crore worth foreign exchange during 1968-69. Quantitatively, the exports in 1968-69 amounted to 61,570 tonnes.

SEVENTH ALL INDIA BASIC LITERATURE COMPETITION, 1969

Entries in the form of manuscripts/books (including dramas) on the subjects mentioned below are invited from Indian authors for the Seventh All India Basic Literature Competition of the Govt. of India :—

1. Political Democracy through Panchayati Raj as visualised by Gandhiji. 2. Economic Democracy through Panchayats and Co-operatives as viewed by Gandhiji. 3. Gandhiji's concept of Social Democracy through Panchayat and Rural Development Programmes. 4. Planning from below through Panchayats. 5. Conflict and Consensus under Panchayati Raj institutions. 6. Panchayats and Local Resource Mobilisation. 7. Nyaya Panchayats for speedier justice. 8. Leaders in the making—Panchayati Raj in Action. 9. Food, nutrition & community. 10. Student participation for strengthening Community Development & Co-operation. 11. Youth and Panchayati Raj Institutions. 12. Welfare of women & children under Panchayati Raj. 13. Land Reforms and Role of Panchayati Raj Institutions. 14. Role of national federations in Co-operative Movement. 15. Poultry & Poultry-feed Co-operatives. 16. Irrigation & Power Co-operatives. 17. Co-operative Institutional finance for Agricultural Production. 18. Role of Co-operatives in distribution of inputs for increased Agricultural Production. 19. Creation of cadres for Co-operatives. 20. Education & Training for Co-operative personnel. 21. Fisheries Co-operatives.

Twenty-one prizes of Rs. 1,000/- each will be awarded. Not more than one prize will be given under any one subject.

LANGUAGE AND STYLE—Entries may be in any of the following languages :—

(i) Assamese (ii) Bengali (iii) Gujarati (iv) Gurmukhi (v) Hindi (vi) Kannada (vii) Kashmiri (viii) Malayalam (ix) Marathi (x) Oriya (xi) Sindhi (xii) Tamil (xiii) Telugu and (xiv) Urdu

SIZE—Length of the manuscript should be about 10,000 words or about 40 pages, if printed, in demi-octavo size in not less than 16 point type. If books, they should be adequately illustrated. Entries should be in simple, lucid style so as to be understood by, and to appeal to, the workers connected with the Community Development, Panchayati Raj and Co-operation Programmes for whom it is meant.

COPYRIGHT—Copyright of the prize-winning entry shall be transferred to the Government of India free from all encumbrances. Suitable amount, mutually agreed to, will be paid for the copyright.

ENTRY FEE—Rs. 3/- for each entry submitted by author.

LAST DATE FOR RECEIPT OF ENTRY IS 15TH SEPTEMBER, 1969.

Detailed particulars regarding the rules and instructions of the competition can be had on application from :

Ministry of Food, Agriculture, Community Development & Co-operation
(Departments of Community Development & Co-operation)
Krishi Bhavan, New Delhi

THE TEACHERS' LOT

A PLANNING FORUM SURVEY

MAYURAM is a town in Thanjavur district of Tamilnadu. Its population of 60,000 is served by 30 schools with a total of 376 teachers. The Planning Forum of A.V.C. College Mayuram recently undertook a survey of socio-economic conditions of the teachers in the town. It covered all but 10 teachers.

According to the survey 208 of the 366 teachers were males and 158 were females. Their age ranged from 19 to 58, the average age being 37 which means youth and vigour predominate among the teaching community. No less than 266 (92.5%) of them were married and only 100 (40.9%) were single. The married teachers have a total of 824 children, yielding a welcome average of 3 which is the goal of the national family planning drive. As many as 236 teachers (64.5%) are ardent supporters of family planning scheme. Twenty nine per cent of the teachers not only favour but profess to be sincerely following the scheme and thereby extending their support and co-operation in solving the problem of population. The total number of other dependents being 866, the average size of a family comes to 5.5.

GLOOMY PICTURE

Compared to the above state of their domestic obligations, the picture of their living condition is rather a gloomy one. Only 138 of them lived in their own residences while as many as 228 of them or 60.5 per cent lived in rented accommodation paying an average rent of Rs 31. They received a total of Rs 75,694 in monthly salaries. The average salary thus works out to Rs 242.5. Cancelling the average rent of Rs 31, a family of five members has Rs 211.5 to spend for the entire month. Thus the per capita monthly expenditure for each dependent member of the household is about Rs 40.

Of the total, 162 teachers had additional sources of income totalling Rs 10,991 per month, the sources being land, shares dairy and, of course, tuition.

Their actual monthly expenditure totals Rs 79,979 against their total earnings of Rs 75,694. This yields a monthly average deficit of Rs 17.5 per household. Though as high as 40% of their income is spent on food—the size of the cake, leave alone its nutritious value, is not worth mentioning. Clothing and rent eat away 20.2 per cent of their income.

However, 237 of the 366 teachers manage to save an average of Rs 11.75.

One hundred and seventy five teachers were in debt totalling Rs 2,43,519, averaging over Rs 716 per teacher. This is a high incidence of indebtedness compared to their resources and responsibilities.

The survey reveals that the teacher's salaries did not compare favourably with those earned by less qualified persons in other vocations. The average supplementary income from tuition works out to Rs 4.50 only and therefore it cannot be a major addition to their purse. In these circumstances a cheap housing or "own your home" scheme can go a long way in ameliorating the condition of teachers.

Ninety six per cent, of the teachers liked being in the teaching profession, a small fraction thought better of other professions,

There is a general feeling among these teachers that the standard of education has deteriorated. They think that reduction of teacher-pupil ratio, stopping of free education, avoiding frequent changes in the curriculum and modifying the present system of examination would help the situation.

They are wary of increasing indiscipline among the students and almost all of them favour adding one period in a week for moral instruction.

BHILAI EXPORTS

Pig iron and steel products worth Rs. 4 crore were despatched for export from the Bhilai Steel Plant during the month of April, 1969. In terms of tonnage, it includes over 21,000 tonnes of pig iron and around 47,000 tonnes of saleable steel.

The total production during the month was over 130,000 tonnes of saleable steel, 40,000 tonnes of pig iron and 48,000 tonnes of bye-products, of a total value of Rs. 11.6 crore.

Two new daily production records were set up during the same period. The Rail and Structural Mill rolled 2,298 tonnes of export rails on April 26, 1969 and the Merchant Mill rolled 1,459 tonnes of beams on April 28, 1969, both of which were the highest rolling records for a single day so far.

Arresting Steel Rusting

Using rust to rust-proof steel is the core of a new technique developed by a German steel firm. By coating a special steel with a special rust further corrosion is halted. The result is a weather-proof building material that needs no paint, lacquer or other orthodox protective coating. The product is called Resista steel. It is made by the addition to the "mix" of certain alloys, including phosphorus, copper, chrome and nickel.

Like other steel, the Resista steel begins to rust soon after exposure to weather. But the rust is a tightly textured coating—a shield against further corrosion. After two to three years the special steel stops oxidising or rusting. It is now completely covered with a reddish brown or violet skin that protects the underlying steel—somewhat as the greenish skin of patina, protects an exposed copper surface. No further protective measures are necessary.

Planning at Block Level — A Case Study

Formulation and Execution of Block Plans By R.B. Das and D.P. Singh, Institute of Public Administration, Lucknow University; 154 pages. Rs 12.

Sunil Guha

COMMUNITY Development has been defined as a process by which the efforts of the people themselves are combined and co-ordinated with those of the Government to improve the economic, social and, to some extent, cultural conditions of communities. The basic factors in this process are realisation by the community of its needs, ranking those needs in their order of priorities and preparing a programme on that basis, developing attitudes for self-help, self-reliance, cooperative effort and strengthening their organisations for implementation of the programme and attainment of their objectives. Careful formulation of Block Plans and their efficient implementation are thus the base on which the success of the Community Development movement depends.

The Research Programme Committee of the Planning Commission has done well in sponsoring the case study on formulation and execution of Plans in Banki and Mewai blocks of Barabanki Districts of Uttar Pradesh, the findings of which form the subject matter of the book under review. The essential role of the Block as a unit of planning has perhaps come to stay; and it is as well that studies in depth are constantly undertaken to unravel weaknesses and streamline the process of planning and implementation of Block programmes.

The main findings of this case study are not very different from

those of earlier case studies undertaken by the Indian Institute of Management and the Indian Institute of Public Administration. Target fixation in Block Plans is often unscientific and inconsistent, inter-departmental rivalry coming in the way of effective co-ordination; dual control over the Block staff, often resulting in non-co-operation with the B.D.O., lack of initiative on the part of *Kshetra Samities*; poor follow-up of decisions; and the effect of "subsidy" and 'grants-in-aid' programmes in corrupting people including officials. Targets are imposed on the Block from above rather than from village level upwards. It is also interesting to note that, like the Indian Institute of Public Administration's case study, otherwise known as Dr.

Pelz's study, the present study also says the Revenue Department has been showing the poorest co-ordination with Block organisation. The craze for uni-linear line of command is hardly conducive to integrated rural development which the Community Development movement has sought to achieve all these years. It is indeed unfortunate that the department still looks upon the Community Development Agency as a rival rather than as a co-ordinating agency.

The study has rightly recommended imparting education to the members of *Kshetra Samities* in citizenship and public affairs, gradual transfer of powers to non-officials on the basis of competence and proven ability, strengthening of the office of B.D.O. by adopting the principle of 'unity of command'; planning of programmes with reference to capacity for implementation and drastic reduction in programmes providing 'subsidy' and 'grants-in-aid'. If the institution of Panchayati Raj is accepted as an article of faith, what is needed is to devolve responsibility and resources on them without any mental reservation.

SCIENCE A DECADE AGO

View from A Height by Isaac Asimov. Published by Vora & Co., Publishers Pvt. Ltd., Originally published by Doubleday & Company Inc. 252 pages. Rs 4.

The Century of Science by Watson Davis. Published by Vora & Co., Publishers Pvt. Ltd., Bombay, 1969. Originally published by Duell Sloan and Pearce, New York, 1963. 313 pages. Rs 7.50.

A. Rahman

THE major difference between science and technology is that while the former is international, the latter is not. Facts of science are the same for every country and the knowledge is as valid in one country as in another. This is amply borne out of Isaac Asimov's books.

This collection of seventeen essays was a delight for the reviewer, more so to read it again after nearly a decade. The essays have not lost their vigour and freshness over the period. The publishers are to be congratulated for selecting the book for republication and making it available at such a low cost. The book is valuable for scientists as well as for the lay public. The various essays in the book represent a real synthesis of knowledge.

While discussing a topic, Asimov not only throws light on the subject but also gives an insight into the process of acquiring knowledge—how scientists think and arrive at various conclusions through devious routes, the convergence of various channels to develop a unified theory, the interplay of various branches of science and make it all a fascinating story as well.

simov, in discussing a problem only gives you knowledge but the history pertaining to that inch of knowledge and the complementary areas of science which have contributed to the growth of knowledge.

He makes delightful excursions into wider horizons. For instance, his essay on "Now Hear This" ranges far and wide, including mythology, but his one remark is particularly worthy of attention in India, where we are busy translating English terminology in Indian languages or reviving ancient terms. He says :

"Nowadays, to be sure, we restrict the word fish to vertebrates which have scales and breathe by means of gills. Invertebrates such as clams, oysters, lobsters and crabs are not fish. However, the English language has never caught up with the modern subtleties of taxonomy. These non-fish are all lumped together as 'shell fish'. Even more primitive creatures receive the appellation, so that we speak of starfish and jellyfish."

THE second book, divided into 21 sections, cover a range of subjects. It is well brought out and amply supported by photographs. The book was meant for American readers, to excite the young minds with the advances of American technology and to make the lay public feel proud of American achievements. The reviewer, therefore, finds it hard to discover its relevance for India. Actually, the title is misleading. There is very little science in the book and the "proud record of man's great scientific and technical achievements in the 20th century" turns out to be a record of American achievements.

To republish the book in India after nine years of its first publication, when science and technology have made major strides, is to serve out-dated material and cannot be justified on any grounds. Further, modern science and technology in India have, in the minds of the people, been regarded as western phenomenon and this book is likely reinforce such an impression and add to the alienation.

It is time India produces her own books based on the work being

done in India and the recent developments which have taken place in the country. And there is much that requires such reporting. This is the only way to make Indian culture absorb modern science and technology. In the absence of such an approach, the dichotomy between Indian culture and science and technology would continue, much to the detriment of both science and technology as well as national development. The policy and the economics of republishing foreign books for Indian market at cheap prices require much greater scrutiny than appears to have been done.

Rich Heritage

Legends of India by Muriel Wasi, Narrator National Council of Educational Research and Training, Publication Unit, New Delhi.

M.R. Chilana

As the concept of education transcends mere textbook teaching in schools, the need for supplementary material for students is keenly felt. This type of reading material for children has to have a purpose either enrichment of their learning in different subject areas or development of particular interests or creation of certain habits. Such material has to be appealing and interesting so as to compel the readers go through it even during their leisure hours.

The declared purpose of the volume under review is to acquaint young readers with India's rich heritage, through legends selected from the country's rich mythology. As Mr. L.S. Chanderkant puts it, "Nowhere is the continuity of India more strikingly evident than in the aliveness of these legends, some collected over more than twenty centuries ago".

The collection consists of a narration of twelve fables and myths, which deal with the themes from "joyful" to "philosophic". It attempts "to strike a balance between the gay and the philosophic". The period covered begins from the origin of Ganga river to Guru Nanak. The picture of the country that emerges is really fascinating.

The stories generated a sense of responsibility. Stories from Hinduism and Buddhism do help in understanding some important aspects of the two great religions of the world.

The book has been well-printed and well-illustrated. It is printed both in Hindi and English, the one in English being the original writing of the author. The language is simple. The price could, however, have been kept lower so as to be within the reach of an average, especially so because it comes out from N.C.E.R.T. The book is useful also for the children of higher secondary sections, though it is meant mainly for those up to the age of 14.

On Aiding Voluntary Agencies

Grants-in-aid to Voluntary Agencies: study of procedures, process and problems by Central Institute of Research & Training in Public Cooperation, New Delhi, 1969. pages 251 Rs 10.

Dipak B. R. Chaudhuri

THE social and economic development of a country is the joint concern of the state and the people. To enable the people play their legitimate role and to encourage their maximum participation in nation-building, the state aids them in a variety of ways. 'Grants-in-aid' is one form of assistance to voluntary agencies engaged in community services work. This is reckoned as a necessary and active form of aid to development process.

Since the beginning of planning in our country, the Government is continually striving to consolidate, strengthen and develop the activities of the voluntary agencies. Governmental leaders realised the pivotal and vital role of the voluntary bodies in the field of social welfare work. With the introduction of the grants-in-aid scheme, a working relation was established between the Government machinery and these agencies regulated by

the rules prescribed from time to time to govern grants-in-aid.

In the working of the grants-in-aid programmes, both parties have expressed several difficulties. Of late, each is complaining about the other and in practice the system had proved an irritant to both.

The main functions of the Central Institute of Research and Training in Public Cooperation are to promote voluntary action, step up people's participation in Plan programmes study the activities of the voluntary agencies, conduct research into the problems of voluntary agencies and evaluate programmes. It was only natural that this Institute was asked to collect facts on the subject which throw light on various aspects of of the grants-in-aid system, with the hope that it would stimulate thinking and review of the system.

This volume comes out of the report of the above-mentioned research-study of the system's functioning. A major finding is that the system presently suffers from its undefined concept. According to present practice a grant is discretionary, to be given or not at the will of the government. This does not fit in with the basic concept about the role of voluntary agencies in developmental effort and community services.

The data of the present study were collected from all-India voluntary agencies situated in New Delhi and the Union Ministries/Departments providing the grants-in-aid. The study has been made on the basis of eight cases selected purposively from different programmes and Ministries Departments from which the grants were given.

The study also exposes the hardships caused by the Finance Ministry's control and reminds Dr. Appleby's observations: "The Ministry of Finance needed to shift more of its attention to better budgeting and away from detailed expenditure control over budgeting."

The Government is trying a new experiment by converting the Central Social Welfare Board to an incorporated company. Let us hope that the new organisation will be able to improve the working rela-

tion between the voluntary agencies and the government.

John Barnabas describes the gratitude of all those who are active in voluntary community service and who are involved in the developmental efforts.

As It Rains

*The Monsoons By Dr. P. K. Das.
Published by the National Book Trust,
New Delhi. 162 pages Rs 4.25.*

M. K. Dharma Raja

This monograph, the twentieth in the series 'India—the Land and the People,' is by a distinguished meteorologist and an award-winner in his subject. The book describes the meteorological aspects of the Indian monsoon. It recounts the story of the monsoon in a lucid style and in fascinating detail and goes on to set forth in interesting sequence some of the more recent and novel concepts which an average reader ought to know.

The author succeeds in the skilful task on getting us interested in the subject through accounts of the genesis of the monsoon, its march through sea and land, the deflections of current and the effects it produces on our climate. It is after gripping the attention of the reader that he begins to unfold the wealth of information revealed through sophisticated techniques which can be illustrated only through technical jargon.

The genesis and progress of the south-west monsoon over the Arabian Sea and the Bay of Bengal are traced and delineated in a easy style that draws the reader into succeeding chapters of mysteries known only to the weatherman. Explanations of technical terms are given in the Glossary which is preceded by references intended to help advanced students of the meteorological science.

With the advance of weather technology and the perfection of

devices like the, radar, the we rockets and satellites and high speed electronic computer, to speak of the vista of possibilities opened through inter planetary spacecraft, man need not remain after-all a hapless observer of the fatalities of weather. The cost-benefit ratio is on the side of the weatherman. Dr Das points out, for instance, how a recent study has established that the benefits for World Weather Watch to which India is to be a party would exceed some sixteen billion dollars a year, about fifty times the cost of carrying out the project !

More than any other country, India, is so much dominated by the monsoon. Forecasts of its course are closely linked with the various segments of our national life, the crop pattern, schemes of river control, aviation, shipping, space research and the check on virus diseases.

An invaluable observation of Dr Das relates to the possibility of reclaiming desert areas. Destruction of vegetation over the centuries has made the Rajasthan desert. A protective vegetation cover can reverse the process. A series of diagrams and illustrations, some of them, the very latest, makes this book as much useful to students of meteorology as to our planners and policy-makers. Dr Das has attempted a clear statement of the problem of the monsoon and the rains, so that it may stimulate more thinking on the subject.

OTHER BOOKS RECEIVED

Electricity and Economic Development of Madras State by K.S. Sonachalam. Published by Annamalai University, Annamalai-nagar. Pages 256. Rs 22.50.

Opinion Leadership in India—A Study of Interpersonal Communication in Eight Villages by Lalit K. Sen. Pages 61. Rs 4.50. *Resource Use And Productivity on Farms—A Comparative Study of Intensive and Non-intensive Agriculture Areas* by T.P.S. Chawdhari, R.N. Tripathy, T.V.S. Rao, and J.N. Sharma. Pages 111. Rs 12. Both published by the National Institute of Community Development, Hyderabad.

AGRICULTURAL FINANCE

(from Page 4)

through deposit (saving mobilisation is a welcome contribution to the stability of the economy and to combat inflationary pressure, it may not prove to be a welcome proposition to the co-operative banks.

The formation of agricultural finance corporation is a first step in this direction. Though at the outset it may appear to be an organisation designed to pool the resources towards a common end, it is implicitly aimed at preventing competition among the commercial banks. I would go a step further and call this as a "trade union" of commercial banks.

GRAVE IMPLICATIONS

Of course, there is a gestation period till the commercial banks could establish their hold on rural savings. Due to lack of knowledge and understanding of the rural economy, sociology and psychology, the commercial banks may take quite some time to get settled and may even incur losses in the beginning, but they are bound to

be very cautious in this matter because they would be operating with the depositors' money. If the co-operative banks fail to consolidate their positions during this gestation period they are sure to be the losers in the game.

Another point of importance is that the people, who are already in the higher investment-saving group, would get more facilities which may result in widening the gap between higher and lower income groups.

Instead of allowing the commercial banks to operate independently, the whole system of agricultural credit may be reorganised gradually by establishing a national credit co-operation and the commercial banks may be obliged to contribute a certain percentage of their loanable funds towards the capital of this corporation, alternatively, there can be a clear demarcation in the areas of operation between the co-operative and commercial banking sectors. It would be unwise to allow two agencies to operate in the same field at the village

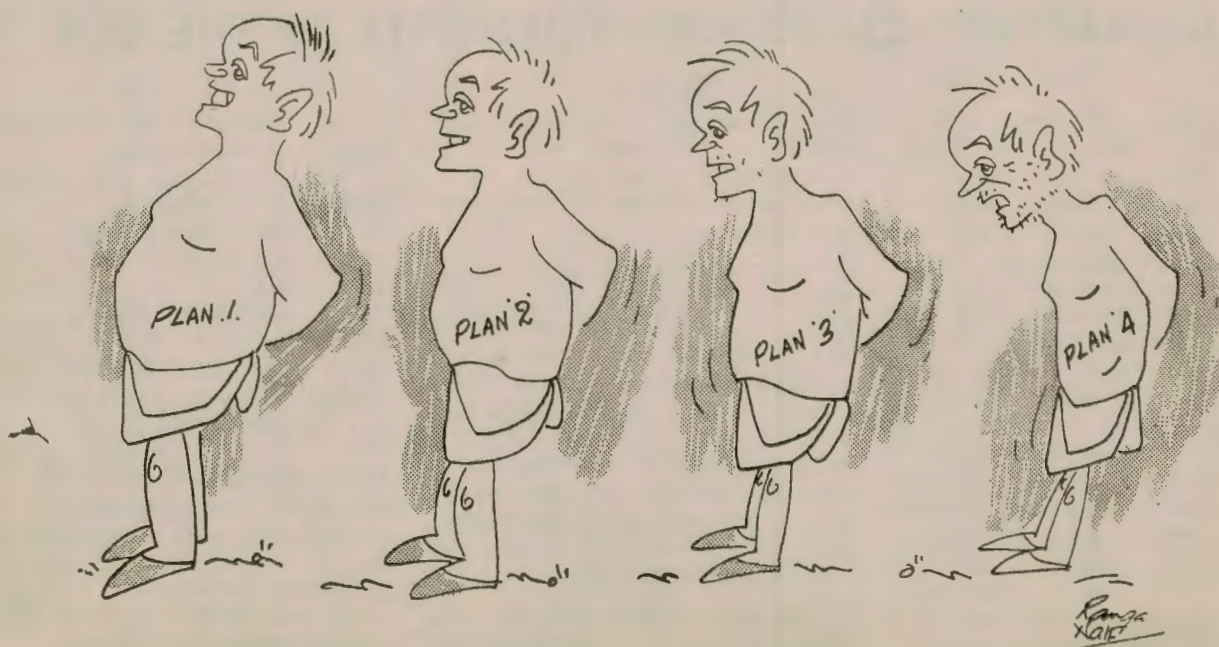
level. This would give rise to more and more personal, political and social rivalries. The selective financing of the commercial banks would alter the economic balance of the rural economy. Affluence among certain people would result in the formation of new power groups which would lead to political and social rivalries in the rural society which is an integrated whole.

THE WAY OUT

Another alternative would be to make the commercial banks advance through the village co-operative societies and the respective State Governments can stand surety to these loans. If a properly co-ordinated pattern is evolved in the beginning, it will help avoid bitterness between the two agencies later. Co-ordination can be achieved and harmony established by

- (i) demarcating their separate areas of operation and
- (ii) by channelizing the funds to the agricultural sector through a common agency and by ensuring equitable income distribution by introducing proper monetary and fiscal measures.

A Cartoonist's View of Planning



LETTERS

A PLEA FOR TAX ON AGRICULTURE

Agriculture contributes approximately 54% to the national income; at the same time it escapes without a corresponding contribution to the exchequer in the form of taxes. Its direct taxes are much lighter than what city people pay. It enjoys the benefits of the Plan, without contributing much to the pool of resources. We can here recall the burden carried by the Japanese and Russian farmers in the early decades of industrialisation of their countries. Today, Pakistan is planning to augment resources by mobilising agricultural income.

According to the Kerala Taxation Enquiry Committee's survey, the per capita incidence of tax (direct or indirect) in the State was Rs 13 in rural areas and Rs 112 in urban areas, which also points to the unequal share of the burden between rural and urban areas. The position is likely to be more or less the same in other States.

Further, the quantum of economic benefit enjoyed by the rural population is in no way less than that by the urban population in our country. Besides, the level of taxation between them has been more or less equal as has been stated by the Taxation Enquiry Committee in 1953 thus: "the level of Urban Taxation is on the whole higher at all stages of income than that of rural taxation. There is a great room for increased taxation of higher rural incomes than in the case of urban incomes."

In corporate sector, the tax-burden is already higher and any further increase will only add to it and may kill the incentive in this sector. The public sector may not be depended upon for a substantial contribution to the exchequer in the near future.

So the proposition of increased taxation for agricultural sector is economically sound. Some kind of hardship is always there in taxation. But on the principles of equity and benefit, it is necessary that agricultural incomes are brought within the purview of full Income Tax gradually, because the injustice of a century cannot be liquidated in a day, and in the long run, full Income Tax must be levied on Agricultural Income too.

Hence we are left with other alternative than to enlarge the share of the agricultural sector in finding resources for the Fourth Plan, which, of course, postulate a large taxation effort in that direction.

There is definitely a trend among big business towards conversion of their profits into non-taxable income through agriculture, thereby avoiding income tax. Some others evade income tax by using agriculture as a tool for converting their unaccounted money into avoidable incomes. The Finance Minister estimates that the inclusion of agriculture for wealth tax purposes will fetch about Rs 5 crore to the exchequer.

On economic as well as social considerations and on consideration of benefit and equity, there is no justification for the continuance of the privileged position enjoyed by the agricultural sector, and the Finance Minister has to be congratulated on his revolutionary idea in including agricultural land and buildings in the computation of wealth tax so that the rural sector too may soon become resource-conscious.

Gandhigram

K. Shivkumar

INDIAN PHYSICIANS AND SCIENTISTS IN THE U. S.

THE Institute of Applied Manpower Research, New Delhi, carried out a study of the problem of migration of scientific manpower in 1966 with a view to determining its nature and magnitude. During the course of the study it was discovered that pertinent data were more readily available in the host countries, specially in the United States, than in India. The Institute has brought out three reports on the basis of the data obtained from official and non-official agencies in the United States. The first of these, involving Indian engineers, scientists and physicians admitted to the United States as immigrants, has already been published. Two other reports have now been released.

These are essentially stock studies of physicians and scientists admitted to the United States either as permanent residents or as non-immigrants.

It is striking that most Indian physicians in the U. S. were trainees. Only 405, that is 21.6 per cent of the physicians, were attached to professional activities other than training. Of them, less than one-fourth pursued private practice while the others were engaged in salaried activities of one type or the other. The number of non-trainees who were naturalised citizens of the United States was 117.

As regards scientists, the data relate only to those who volunteered

for registration in the United States National Register.

The scientific and technical personnel may be broadly divided into two groups—those pursuing higher studies and those in employment. An analysis of the registrants by their citizenship or visa status indicates that 635, that is 48.3 per cent of them, have acquired status which has paved or can pave the way for their stay in the United States on a permanent footing. The remaining 681, that is, 51.7 per cent, held non-immigrant visas. Of the 635 registrants constituting the first group, as many as 450 held permanent resident or immigrant visas and the rest reported themselves as naturalised citizens.

Development Diary

● The fifth co-operative spinning mill, set up by cotton growers at a cost of about Rs 2.5 crore, has been commissioned at Himatnagar in Gujarat.

● Electric traction on the 311-kilo metre long Igatpuri-Bhusaval section of the Central Railways has been formally inaugurated. Electrified at a cost of about Rs 12 crore, the section will facilitate the quick movement of traffic between Bombay on the one hand and Delhi and Calcutta on the other.

● Work has started on the arch dam of Kerala's biggest Hydro-electric project at Iddiki. The project for which Canada is giving aid, envisages six generating units of 120 MW each. Three units which will be installed in the first stage are expected to be completed in 1972.

● The Mogul Line of Bombay, a State-owned Shipping concern, has signed an agreement with a ship-building and engineering firm of Denmark for construction of an air-conditioned modern pilgrim passenger-cum cargo diesel vessel. The new ship to be delivered in September 1971 will be operated on India-West Asia service. It will be designed to accommodate eighty cabin and 1,500 deck class passengers.

● India has earned Rs 47 crore of foreign exchange through coir exports during 1968-69. The total export of coir and coir products during the year amounted to 61,470 tonnes.

● A teleprinter circuit between Bhutan and India has been inaugurated at Phuntsholing.

● An Indian firm has secured orders worth Rs 30 lakh for sale of converters for tractors being made by a Yugoslav factory.

● Rumania, the third largest buyer of iron ore from India, will buy 8 lakh tonnes of iron ore during the year 1969-70.

● A new process for the manufacture of ceramic pickups, on which depends the quality of repro-

duction from record players, has been developed at the Central Electronics Engineering Research Institute at Pilani.

● The United Arab Republic will buy from India 200 Tipper trucks and 8 Mercedes buses for its iron and steel factory and 7 lakh books from an Indian Publishing house for the teaching of English.

● A co-operative hospital, the first of its kind in the country has been built in Bombay. The big and modern hospital named, the Sushrusa Citizen's Co-operative Hospital, has cost 26 lakh rupees.

● The second in-shore minesweeper built by the State-owned Mazagon Docks for the Indian Navy has been launched in Bombay. The 32.46 metre long minesweeper has been named INS BULSAR.

● The foundation-stone of a fifty-lakh rupee modern cricket stadium has been laid in Bangalore. The new stadium would give a big boost to cricket in Bangalore.

● An ultra modern 12727-DWT Cargo Vessel, Visva Shobha, built by the Hindustan Shipyard Visakhapatnam has been delivered to the Shipping Corporation of India.

● India's trade with Eastern Europe soared to Rs 497 crore during the last year, the highest recorded so far.

● The exports of finished leather and leather goods fetched Rs 33 crore during 1968-69.

● The exports of wollen hosiery goods made a new record during 1968-69 touching the figure of Rs 6 crore.

● The Japan Ammonium-sulphate Industry Association has agreed to supply to India 1,45,000 tonnes of fertilisers this year.

● India has signed a contract in Tokyo, valued at \$3.17 million, to supply 300,000 tonnes of Ferro-Manganese to a group of nine Japanese Steel Mills.

● A new 100-kilowatt medium-wave transmitter of All India Radio has been installed at Dibrugarh with Japanese collaboration. The transmitter will serve the areas of Assam and NEFA and will broadcast programmes in five tribal dialects of NEFA.

● The Central Warehousing corporation has earned profits worth Rs 13,55,000 in the last two years. The Corporation set up three new warehouses last year bringing the total number of warehouses in the country to 101.

● A new strategy is being adopted in the country to increase agricultural production. This is the multiple cropping programme, designed to raise more crops per year on the same land. The schemes will cover 60 lakh hectares this year and 1.6 crores hectares all over the country during the Fourth Plan. This will mean 3.3 crore tonnes of more foodgrains by 1973-74.

● Production of tea in the country last year totalled a record figure of 382.5 million kgs. This was 6.5 million kgs. more than the previous record figure in 1956.

In the sphere of exports also, there was a significant improvement last year, showing an increase of about 34.5 million kgs. over the 1965 figure.

● The Rice Research Station at Pattamoi, near Calicut in Kerala, has perfected a system of raising paddy seedlings without soil. Based on the Philippine method, the system involves spreading of water-soaked seeds on plastic sheets or green banana leaves and pressing them with wooden board every morning for three days; in a fortnight time, the seedlings are ready for transplanting in fields, which require only two centimetres of water.

● The Nangal Unit of the Fertiliser Corporation of India has exceeded its target of production of 'heavy water' and fertiliser production for the year 1968-69. The heavy water plant, the only one in Asia, produced over 14,000 kgs. of heavy water during the year, against a target of 13,500 kgs. The factory also exceeded its target of calcium ammonium nitrate.



WORDS THAT INSPIRE

We may call ourselves Christians, Hindus or Mohammedans. What we may be beneath that diversity there is a oneness which is unmistakable. As far as my experience goes, at one time or other, we the Mohammedans, Christians or Hindus discover that there are many points of contact and very few points of difference...

The need of the moment is not one religion, but mutual respect and tolerance of the different religions. We want to reach not the dead level, but unity in diversity...

...Hindustan belongs to all those who are born and bred here and who have no other country to look to. Therefore, it belongs to Parsis, Indian Christians, Muslims and other non-Hindus as much as to Hindus...

Man and his deed are two distinct things. A good deed should call forth approbation and a wicked deed disapprobation.

Hate the sin and not the sinner is a precept which though easy enough to understand is rarely practised, and that is why the poison of hatred spreads in the world

Moral training should be given to all alike, no matter how different their age and their up-bringing.

A devotee of Truth may not do anything in deference to convention. He must always hold himself open to correction, and whenever he discovers himself to be wrong he must confess it at all cost and atone for it.

Love never claims, it ever gives. Love ever suffers, never resents, never revenges itself.

Anger is a sort of madness and the noblest causes have been damaged by advocates affected with temporary lunacy.

Light brings light, not darkness, and nobility done with a noble purpose will be twice rewarded.

Those who are engaged in the noble task of ridding society of the evil will have to work in a systematic manner and not become dissipated if they do not find their effort crowned with success at once,

Ignorance is at the root of failures, partial or complete.

Do not judge others. Be your own judge and you be truly happy. If you try to judge others, you are likely to burn your fingers.

A public worker should not make statements of which he has not made himself sure. Above all, a votary of truth must exercise the greatest caution.

I think the political life must be an echo of private life and that there cannot be any divorce between the two.

We may not look forward to reaping the reward of our labours, but it is my firm conviction that all good action is bound to bear fruit in the end.

Any one who overpowers a tyrant by killing him will one day be tempted to become a tyrant himself, for, instead of looking to God for support, he will have learnt to depend on his own brute strength...

We must break through the provincial crust if we are to reach the core of all-India nationalism...

—GANDHIJI

ধন ধান্য

Dhanadhanye

Bengali Edition of Yojana

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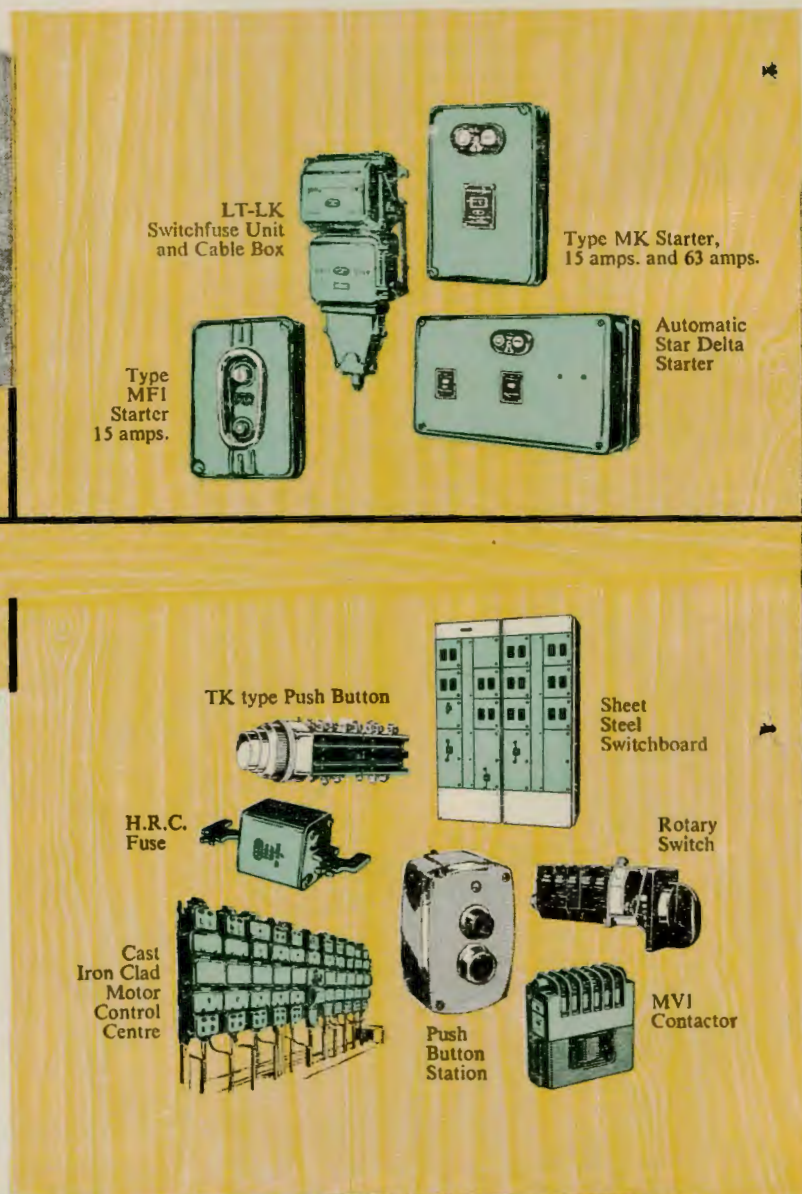
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LEST WE FORGET

We should hold our heads high. Whatever we have to say need not be said with our heads bent and our eyes to the ground.

—Jawaharlal Nehru

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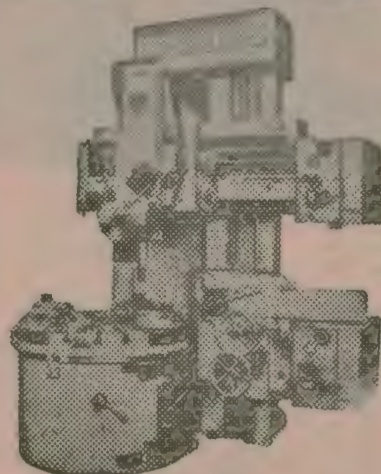
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A CENTURY OF ENTERPRISE

IN celebrating the centenary of the birth of Laxmanrao Kirloskar, the nation honours the memory of a man of unusual courage and vision. His main achievement, apart from the success of his pioneering enterprise in agricultural engineering, was in demonstrating how industrial planning in India could simultaneously bring about a vast change in the countryside. Laxmanrao Kirloskar will be remembered for integrating industrial development with the transformation of our traditional village society.

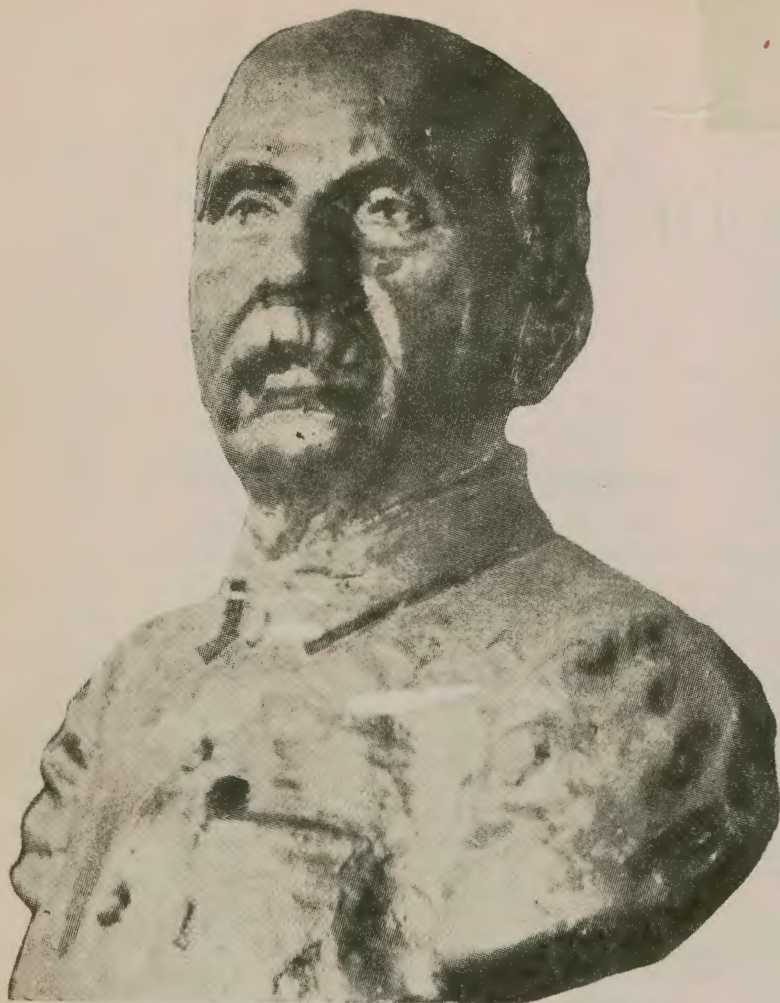
When, sixty years ago, Laxmanrao Kirloskar chose a remote village for his experiment, he had neither the backing of infrastructure nor any assurance of government support. His only aids were his sense of mission and a determination not to fail.

Enterprise had not advanced even to the stage to which it has now reached in India, when this pioneer started his ambitious project to modernise rural India. His achievement was doubly remarkable because it was performed in an environment of apathy. His valid message for the present-day Indian development is that a good entrepreneur does not have to wait for government patronage. Equally valid was the principle implied in his effort that Indian planning could not be merely related to considerations of economy of scale and operation but to the larger purpose of building the whole of India.

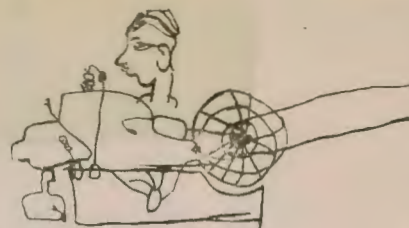
This is an important principle which India will do well to respect now. So much of argument goes on about the considerations for locating an industry that the paramount need of development comprehending the whole of Indian geography is often lost in lesser, however valid, considerations. If factors like easily available capital, management and technical skills and infrastructure were alone to guide Indian development, large areas in the country would be languishing for decades in backwardness. Laxmanrao Kirloskar not only proved that this was not necessary but demonstrated how the absence of many facilities could be made up by resolute purpose and imaginative enterprise. In fact, while the region flourished, the entrepreneur flourished too. If Indian planning is to be related to the political principle of democracy, it should be retrieved from the trend of urban concentration which inevitably would bring with it remote oligarchies. Gandhi's village idea was based on recognition of this danger. If it is thought that decentralised village industry is not consistent with the scales of modern economy, Kirloskar's successful experiment can give a clue to worthwhile development which would not affect the core of the democratic principle.

The impress of Kirloskar's missionary purpose is to be seen in the villages around which he started his first industry. Large numbers of people in these villages, without any formal education, have learnt many modern skills and have themselves become entrepreneurs. This has had its inevitable impact on farming methods and also on ways of living. Lack of capital has been made up by the spirit of cooperation and the whole area, thanks to the leadership provided by the local authorities, has now been converted into an enterprise in partnership.

This issue of Yojana carries a report on the development of the region.



Laxmanrao Kirloskar Birth Centenary : June 20, 1969



A YOJANA SPOT REPORT

by ROSSCOTE
KRISHNA PILLAI

Photographs by
T. S. NAGARAJAN

THIS MAN SPARKED OFF AN INDUSTRIAL REVOLUTION IN RURAL MAHARASHTRA

ONE wouldn't believe it. That a modern cupola, which can melt 2 tons of iron every day for moulding and casting, was designed and set up in that out-of-the way village by a famished-looking, old man who had studied only up to the second standard ! But it is true.

Mohammed Dada Shikalgar (55), in Palus village in the Sangli district of Maharashtra, still acutely conscious of his lack of education, had designed it without guidance from

any skilled engineer. His partners in the Vikas Industrial Co-operative Organisation in the village are understandably proud of Mohammed, whose face and body are testimony to the ravages of long toil.

How could Mohammed achieve this ? "It was all due to the old man over there", Mohammed told me pointing to the modern industrial township, two kms away. "In that factory, I was a worker for more than 30 years. I grew old

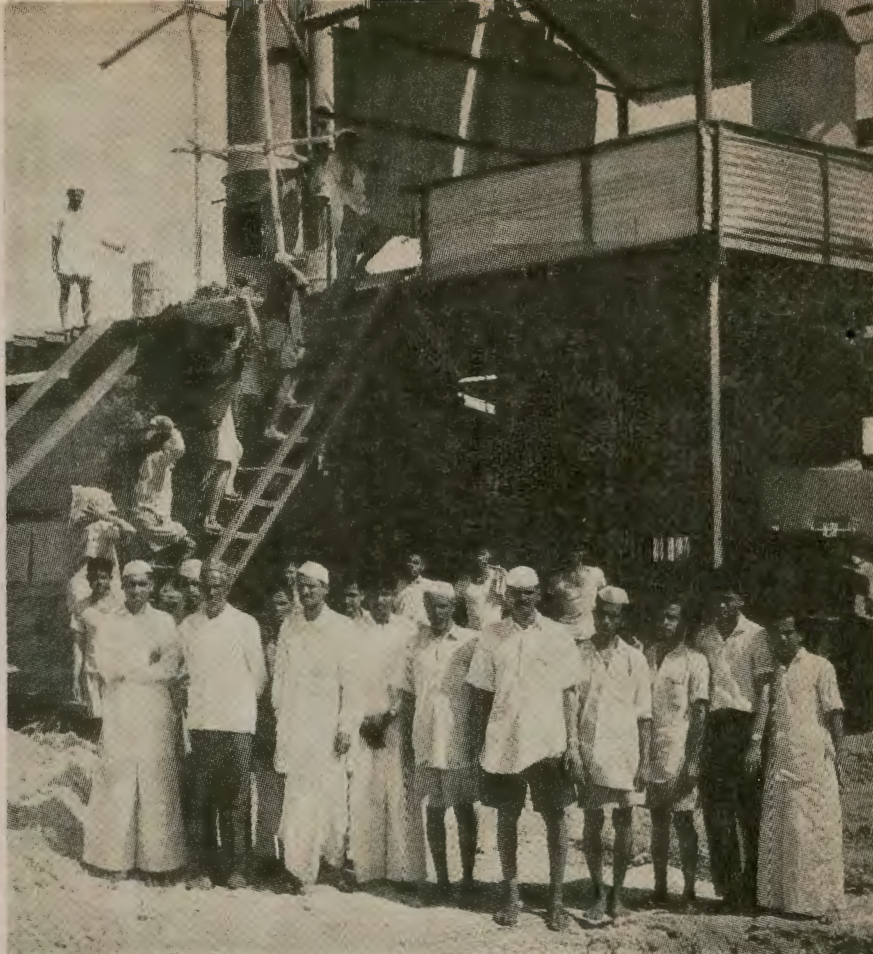
The industrial centre of Kirloskarvadi has helped villagers learn many skills, set up ancillary plants, mechanise their farms and increase their earnings.

"My own slogan has always been 'work is a pleasure', and unless you feel that, you can't possibly be successful. But you've got to persevere and work hard. You may find life very difficult; there may be times when you don't even get enough to eat and wonder whether it wouldn't be better to die. Then you've got to have the will to live and persevere." —Laxmanrao Kirloskar



there, logging on all kinds of machines, learning to know every bit of them and acquired the skill designing them. The old man gave me the motive power to learn; not only me but all workers who showed promise. He would coax and cajole me; he would give all kinds of encouragement. I would tell him, I am not educated. But he would not listen; he would persist in saying, 'why bother about your education? You can do it, you can do it.' "

Almost the same refrain I heard from all the partners of Mohammed in that organisation which manufactures castings worth Rs 50,000 a year. Raja Ram Sawat (65), who gathered expertise in casting the hard way, Annavagha Shutar (70) who had studied only up to the sixth standard but who makes patterns according to the complicated machine drawings supplied to him, and a host of other workers, who formed the thriving co-operative with their contribution of Rs 60,000 and Government contribution and loans of more than Rs 3.5 lakh, all looked towards the industrial township across the rocky terrain and referred to the old man as the fount of their work. Most of them had been at one time workers in that nearby industrial township and their reminiscences of 'the old man' could fill volumes. He had provided them with the skill and know-how to make a dignified livelihood in their village. And not only this particular co-operative; wherever we went in Sangli district—to a



The semi-literate villagers of Palus, who were at one time workers at Kirloskarvadi, have organised a co-operative and built a factory to manufacture mouldings and castings and supply them to Kirloskarvadi. Below: Mohammed Dadu Shikalgar, who has studied only up to the second standard, stands beside the cupola that he has designed.

farm, to a small industry or to a co-operative sugar factory—we heard praises being sung of him as a crusader and pace-setter in modernisation of agriculture, industry and social services, the herald of a rural renaissance.

'The old man' and the industrial township named after him are names to conjure with in the evolution of industrial India. Laxmanrao Kirloskar, the centenary of whose birth is to be celebrated on June 20 this year, and Kirloskarvadi, the industrial centre he built, are bywords in Maharashtra not only for entrepreneurship but for pioneering efforts for social change. Any sign or stirring of progress in that part of the country, be it an iron plough, a power pump or a cane crusher, can in one way or the other, be traced to Laxmanrao Kirloskar and his enterprise. This industrial wizard, who died 13 years

ago, made a remarkable contribution to changing the face of the villages surrounding Kirloskarvadi.

Modern farm implements like iron ploughs and chaff cutters made at Kirloskarvadi have replaced outdated ones in many Indian farms. Sugarcane crushers supplied on hire-purchase terms have given a boost to co-operative sugar factories. Power pumps, of which Kirloskarvadi is among the largest manufacturer, have helped in considerably raising irrigation potential. In fact, these pumps have switched on the green revolution in Sangli district. These distinct contributions of Kirloskarvadi and its founder to the gathering tempo of rural renaissance have earned for them a place in the affections of the people of Maharashtra.

Kirloskarvadi and its founder rose from humble beginnings. To-



day's Kirloskarvadi is not the desolate God-forsaken spot to which Laxmanrao came 59 years ago. It is now part of modern industrial India, throbbing, bustling and growing. Massive factory buildings. Tree-lined pavements and promenades. Sirens hooting at intervals, hundreds of workers trooping in and out; huge machines chattering the story of industrial progress all the 24 hours. Kirloskarvadi is a well-kept industrial township of 194 acres with about 2,000 people, with a high school, a dispensary, a

bank and almost all other modern amenities.

But in 1910, no man went even near the area. The place was one long stretch of thorny cactus abounding in snakes. An occasional train used to whistle past a ramshackle railway station called Kundal Road nearby. For miles and miles around, there was neither an electric light nor water. Only a man with an iron will and driven by a sense of mission would have dreamt of going to such a place for starting an industry.

Laxmanrao, when he came there, was not too young. He was already 42. Bitten by the bug of enterprise, he was determined to face and overcome all odds.

Kirloskar hailed from a village in Belgaum. He was born in a humble family. He dropped out of his village school and went to Bombay seeking a job. Machines were his craze and he learnt machine-drawing at the J.J. School of Art in

Bombay. Being a lecturer in the Victoria Jubilee Technical Institute, he was not the man for an armchair job. Back in his village, he began turning out small products like buttons and later switched on to selling and repairing bicycles. He and his brother shifted to Belgaum where they opened a cycle shop—the start of the enterprise of Kirloskar Brothers.

Laxmanrao's was a restless mind. His ambition was matched by energy. To these was added a mission—a new deal for the poverty-ridden farmers of the villages struggling with age-old implements. He set up a small workshop, equipped with a lathe, an emery grinder, two drilling machines and a one-horse-power engine to make hand chaff cutters. That was how one of the largest industrial complexes in the country making agricultural machinery began.

India's first iron plough is reported to have been made 64 years

Ample Freedom to Experiment and Invent



B.V. Deshpande, who joined the factory as an ordinary worker, now heads its Development Section, making new designs and patterns of complex machines.

Right: Workers, who hail from villages, at the Casting Shop.



Farm Hands Trained to Operate Sophisticated Machines

ago in this workshop which had by then expanded and moved to a new site in Belgaum. Making it was not making the farmers accept it. That was in itself a task of some magnitude and a faith which would not accept defeat. The farmers would not use it for fear of injuring Mother Earth. For two years, the ploughs remained unsold. Laxmanrao then gave the first few ploughs free to the farmers in the neighbouring villages and himself went to the farms to demonstrate how effective the new ploughs were.

Laxmanrao and his brother were building their industry against all odds. Now trouble came from Belgaum Municipality, which thought its new town planning scheme could not accommodate the workshop. It had to be shifted. This brought in luck for an unheard-of village in Aundh, whose prince Balasaheb Pant offered 32 acres of land and Rs 10 000 for setting up the factory. In 1911, the Kirloskars began manufacturing chaff cutters and iron ploughs. Within a decade or so, the iron plough became so popular that in 1924 alone, 40,000 of these ploughs were sold by the factory.

At the desolate site where Laxmanrao came with 50 of his original workers stands today Kirloskarvadi to which peripatetic industrial magnates from the advanced countries of the world fly in. The industry has expanded and diversified so much that there are now 11 companies and subsidiaries spread in four States in India and even abroad. These sell products ranging from ploughs and pumps to compressors and pneumatic tools worth Rs 370 million a year. Its oil engines—the factory is the largest in the country—are popular in Indian farms and are exported to 60 countries. Its highly complicated machine tools—vertical turret lathes and horizontal boring machines—are turning out components in hundreds of factories. Its electric motors—36% of the total made in India—and pumps—40% of the

country's total—find variegated uses in many spheres of the country's economy, industry, agriculture, irrigation and power generation. And with this phenomenal growth, the number of workers employed by the group has risen from 50 to 30,000.

It is not the magnitude of Kirloskarvadi's expansion that impressed us, but the monumental role it



The benefits of setting up an industry in a rural area have been manifold : farmers have learnt the use of machines on the farm, pumps have brought more water to the farms, sugar-cane crushers have helped build up a large Gur industry and a number of co-operative sugar mills.

has played in transforming the villages all around, in turning out villagers into expert technicians and in kindling the spirit, enterprise and initiative among the somnolent farmers. About 1,500 workers of Kirloskarvadi live in the surrounding 25 villages. Almost every household in these villages has sent a worker to Kirloskarvadi and some of them have sent even two or three each. In the last few years, the incomes of the village households have swelled two or three-fold by the earnings of the Kirloskar workers. They have acquired land and profited by using the better farming implements made in the factory, dug new wells and increased livestock, renovated their houses or even built bigger houses and added a few comforts to

recognise hidden talent at the right time and tap it. As a young man Mr Deshpande's idea was to become an arts graduate. It was Laxmanrao Kirloskar who gave him a job in the factory although he was not qualified; finding his talent, the industrialist encouraged him to take to machine drawing. Laxmanrao's trust in him made him soon an expert in the job. He learnt it the hard way; dismantling machines to see their parts and then drawing. When he succeeded, there was always a pat on the back from Laxmanrao and a promotion too! When he failed, there were words of consolation and encouragement. That was how he began making new designs for power chaff cutters, crushers, oil engines, even an au-

Co-operative is one among such industries. An uneducated worker of Kirloskarvadi who left in 1942 to join the freedom movement is now an agent of the Company, selling their machines and has grown into a director of a sugar factory.

Not only individuals but even whole villages have been charmed by Kirloskarvadi into the perimeters of prosperity. Ankalkhop, 15 kms away from Kirloskarvadi, by the side of the Krishna river, is one such village. (For story see page 14).

Kirloskarvadi, is, at once, a monument and a message-monument to the man of vision and foresight, who conferred the benefits of twentieth century technology on a bit of rural India, and message for young entrepreneurs who will dare and act.

A MONUMENT AND A MESSAGE

their living. Indebtedness is on the wane and the money lender class is fast disappearing. Although most of the workers here could not get any formal education for want of a school in their neighbourhood, all their children now go up at least to the company's high school. Some of them are sure that their children will secure engineering degrees.

The founder of Kirloskarvadi seems to have cast many a worker in his own image and moulded them from the position of the humblest hauler into skilled machine men.

Initiative and ability have been recognised and rewarded. A man who joined eight years ago as a hauler now copes with any intricate pattern for casting and moulding. An I.T.I. trained young man from Puruli, a village nearby, has risen from an apprentice in 1961 to a skilled operator of vertical turret lathes; his salary has risen from Rs 50 to Rs 220.

As Mr. B.V. Deshpande (55), one of the oldest workers who joined as a draftsman and who now heads the Export Development Shop turning out new designs and patterns, put it, in Kirloskarvadi, anyone with skill has "ample freedom to experiment and invent". He pointed to himself as Laxmanrao's discovery and said that "the old man had an unerring insight to

tomatic turret lathe, all of which the company later manufactured and sold. And today, Mr Deshpande who revels in designing more and more complicated patterns claims that nobody else in the country makes such designs.

It is not only when enterprising men work for the factory that they are encouraged; even when they resign or retire, they are not forgotten. Kirloskarvadi's generous arms lengthen to reach the workers in their habitats in the villages. They are supplied loans and machines on easy hire-purchase terms, they are given expert guidance to set up ancillaries; their products are regularly bought by the company. As the company enters into the manufacture of sophisticated engineering items requiring intricate skills, tailor-made items of known specifications are farmed out to these small industries set up by former workers. Vikas Industrial

Kirloskarvadi Radiates Progress to Villages

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TO KNOW INDIA
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YOJANA

Sugarcane and Co-operation Take

A Village Towards Prosperity



farmer, the teacher, and the worker, had something to say of the village and its achievements. And not one word of complaint! The clue to the success story of this village with a difference is in two words: co-operation and sugarcane.

Ankalkhop was no different from other Indian villages: gloomy, poverty-stricken, disease-ridden, slovenly and resigned to drudgery. People grew jowar and groundnut on most of the 4,835 acres of cultivated land but yields were poor and earnings, meagre. Only ten acres were under sugarcane; the produce was not enough to meet even the demands of the holiday crowd on the occasion of Tulasi Vivaha, the annual festival of the village. The farmers did not have adequate means to grow sugarcane on a large scale; they had no money to buy fertilisers; there was not enough irrigation water.

Then, eleven years ago, the villagers struck, as it were, a gold mine. Some among them, forward-looking and daring, organised a co-operative sugar factory, as an offshoot of a credit co-operative society

THE symbols of prosperity were all over the village: cars and scooters, trucks and tractors, well-constructed houses and paved roads, luscious standing crops of sugarcane over vast stretches, cheerful, white-clad men, women and children and hefty, well-looking after cattle.

Among the 5,500 people in the village, there are 41 graduates and 175 matriculates. A majority of the boys (1,059) of school-going age and 309 girls go to school.

Everyone in the village whom we talked to, the co-operator, the

Villagers Buy

Cars, Tractors

and Scooters





established in 1922. This factory initiated lift irrigation in a big way and encouraged sugarcane cultivation in the village, offering timely loans and buying off the produce at reasonable prices. The area under sugarcane cultivation spread wide and fast. Today 90 per cent out of the entire cultivated area is under sugarcane and the factory buys 75,000 tonnes every year.

Farming in Ankalkhop is no longer a losing proposition. People who have left the village in search of jobs have returned to take to farming. Even young villagers who go out for college education come back to the farms. Having tasted the fruits of co-operation in industry, the villagers conceived of a scheme of co-operation in farming too. The result: a separate co-operative society with two departments, one for farming and the other for lift irrigation. The society looks after

Motor cycle is fast ceasing to be a status symbol in Ankalkhop village; it is becoming quite common. Prosperity is evident in better-clothed men, tiled houses, tarred roads and electric lights.

all the operations on the farms of its members on a commercial basis. The farmers who enrol as members at Rs 300 a share have to pay Rs 600 per acre for watering charges and also meet the cost of fertilisers and pesticides which the society applies to their lands. The society has a permanent corps of 100 workers, who are paid a daily wage of Rs 3.50 each, three supervisors, and a paid secretary. The members leave their farms to the care of the society until the stage of harvesting which is done by the farmers themselves.

The membership of the society

now stands at 124. The members recalled with pride how the society has improved their sugarcane crop. Water was available in plenty from the four new lift irrigation schemes where they have installed huge Kirloskar pumps got from the company on easy terms. When the farming co-operative could not raise more than one lakh rupees to meet the cost of the irrigation schemes, their co-operative sugar factory gave a loan of Rs 4 lakh.

There was no dearth of inputs. Even inferior land got the same quantity of inputs and the same careful treatment as the more fertile lands got. Individual farmers, spared of the cares and worries of farming, could profitably devote their time to other occupations. Poultry farms, piggery and small industries are springing up.

(turn to PAGE 23)

A MIGHTY DUMPER TRUE TO ITS NAME

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THIS INDIA

A few weeks back, when I was going to Patna, I saw a 12 year old boy weeping bitterly at Palezaghat. His old father was running here and there, as if looking for something. The old man appeared to be much perturbed.

As the steamer was yet to arrive, I called the old man and enquired as to what was wrong. He told me that he was a poor man from Hajipur district. He had gone to his eldest son, a *Chaprasi* in a Patna office. While returning his son had given him some wheat and sugar for the Puja ceremony. When he got down from the steamer he sent the boy to the bus stand to occupy two seats and himself went to take bath in the holy Ganga.

While the boy was waiting for the bus, a constable came to him and enquired about the contents of the *Gatthar* (bundle). On being told that it contained some wheat and sugar, the constable seized the bundle from the boy and asked him to go to the *ghat* and call his father. When they returned, there was no trace of the constable anywhere around.

Chapra Md. Pervez Jamal

This happened at a well-known college affiliated to a famous University in the South. Fortunately, for its B.A. final students, their own college was the examination centre. During that academic year one lecturer could not do justice to his subject due to reasons beyond his control. So on the day the students had their examination for this particular subject, a sheet of paper went round the examination hall to each and every examinee. It said: 'If you want you can copy down the following solutions and then pass it on to the next student.'

After the examination was over, the lecturer was heard remarking

YOJANA invites contributions to this feature from its readers. Each anecdote must be true to life, of less than two hundred words, capturing something significant of India's rich and varied life. Each published anecdote will be paid for.

with confidence: "I'm sure none will fail in my subject."

Madras C.R. Thiaga Raja Varma

A group of seven of us were visiting Sanchi to see the Buddhist shrines there. We alighted from the train around midnight. Next morning we went out for breakfast and were surprised to know that the nearest place where food was available was about 18 km away. We were feeling very hungry. A railway employee came to our rescue. He brought us some food from his house. While we were eating, we noticed five children between four and ten years of age, running towards us. On enquiry we found that our kindly host had brought for us all the food that the household had, leaving nothing even for his children. We shared the food with the children. Before going back the eldest of them, a girl, picked up a small packet of *chapatis* for her mother. Needless to say we paid as best as we could for this large-hearted hospitality of a poor Indian.

While returning from Sanchi hills after visiting the Stupa, we felt thirsty. We had to walk about two miles to reach the nearest village. We went to a pan shop housed in the verandah of a thatched house and purchased *beedis*. A 12-year old girl was managing the shop. One of us asked for water. The girl went inside the house, brought water in an earthen vessel and poured it into our crossed palms one after another. We then went into the village to see around. In the meantime one of us went back to the pan shop for water. There was no one at the shop. So, he went over to the verandah and poured water for himself from the vessel placed there. On our return we found an elderly lady in the pan shop frowning at us. The girl stood nearby, somewhat agitated. As the rest of us came near the shop the lady took the vessel and threw it away on the ground, angrily admonishing us for touching it. Our friend who had touched the vessel took out some coins and threw them on the verandah. The old woman cooled off immediately and the little girl was seen picking up the coins with great relief. Charity and untouchability seemed to co-exist at a place where Buddha's message ringed the air once.

Sasthamcotta (Kerala) M.P. Sahib

Pedru, a local Kumbia Dravidian, one day came to my place with a request to write down the names of his household on the new ration card. While writing the name of his youngest son, whose name did not appear in the previous card, I asked him what was the age of the child. He did not remember but as a guiding point added: He was born in the year when our Prime Minister, Mrs. Indira Gandhi visited Goa. He had named his child after her as Indirock.

Margao N.D. Rosario Colaco

Co-ordination of Central and State Plans Essential

S.P. MEHRA

A decision was forced in the N.D.C. in April and the Fourth Plan was approved by a majority vote. This is a new development reflecting the emerging political situation in the country.

The demand for more power for the States is a corollary to the 1967 election. It was to be expected that this demand would extend to planning. Specifically the States have been asking for a larger State sector than the present 45 per cent of the total outlay together with larger allocations of resources. They argue that an additional Rs 500 crore could be raised through deficit financing for this purpose. A further demand is that the repayment of debts should be rescheduled.

The Plan recognises the role of the States. This is reflected in the fact that 10 per cent of Central assistance to the States will depend upon tax effort in relation to per capita income. The need for detailed and co-ordinated district planning is also recognised.

The States may have hoped to get a bigger share if their performance in the Third Plan had been encouraging. On the other hand, hesitant tax effort and overdrafts increased their dependence on the Centre and aid was almost made a precondition of implementing the Plan. Successive Finance Commissions have obliged the States liberally by giving them more resources.

The trend continues. In the budgets of many States the deficit has been left uncovered. Taxes on agricultural incomes and urban property values proposed in the Plan as a method of additional resources mobilisation are unlikely to appeal to the States. Many of them are already giving up land revenue. In effect, this means that difficult and unpopular decisions are shirked. The States want more money from the Centre, since they would not

raise it themselves, and when the Centre seeks to raise money through taxes, the State Chief Ministers do not hesitate to criticise it.

The sum of Rs 500 crore mentioned for additional deficit financing (over and above the modest Rs 850 crore proposed in the Plan) does not seem to have been arrived at on any cogent basis. The extent of deficit financing depends on the condition of the economy. If it is not accompanied by a steady growth of supplies, there will be the danger of price instability. This danger has already led the Commission to reduce the share of deficit financing in the financing of public outlay from 13.2 per cent on the Third Plan to 5.9 per cent now.

Increase in the States' share of resources and debt rescheduling would have to await the report of the Fifth Finance Commission whose creation is timed so that its award can be valid for a Plan period. This apart, the States must try to reduce their dependence on the Centre.

The purpose of a big Central sector should also be appreciated. The bulk of Central outlays are in two sectors—organised industry and transport and communications. In the field of industry, the stress is on continuation or completion of important existing schemes like those connected with steel, engineering, petro-chemicals, and minerals. Transport and communication help to build the infrastructure. Thus, the nature of the Central Sector is such that it will help production in more than one field.

The Prime Minister posed the issue in its perspective. It is wrong to think in terms of Central versus State Plans. The crucial issue is to "step up the rate of investment" and "boost the economy". The average Indian will welcome whatever helps in raising his standard of living, whether it is the State Plan or the Central Plan. Co-ordination between the two would be what would benefit him most.

AN EXHIBITION OF BOOKS

THE National Council of Educational Research and Training held last month an exhibition of a thousand textbooks produced under the national textbook publication programme. Besides the Council, 15 States and the Union Territory of Delhi took part in the display. Mysore exhibited the largest number of books, 149.

NCERT has brought under one roof for the first time the nationalised school text books under current use in different States.

Textbook production in many States has been nationalised in order to secure uniform standards of education in all their schools. Many States have gone far ahead in this programme. In Bihar, a Corporation has been set up to prepare, publish and distribute textbooks. Besides producing their own books, the State agencies also translate NCERT publications. The Council's publications cover a wide range of curricular subjects like agriculture, biology, chemistry, commerce, English, General Science and Geography.

In addition to textbook publication, which is the core of the Council's activity, there is also a complementary programme of preparing teachers' manuals, students' work books and supplementary educational material for the 14-17 year age group.

In many States, the school text books are published in the local dialects, besides the languages spoken. Assam, for instance, brings out the books in three languages and three dialects, Bihar in four languages and four dialects, Jammu and Kashmir in six languages and one dialect and so on. In Maharashtra, *Bal Bharti* for primary classes has been published in seven languages and eight scripts, Sindhi being published in both Arabic and Devanagiri. In Assam, "Khasi" dialect is printed in Roman Script.

P.N. Kaul

CO-OPERATIVE BANKS FACE A NEW CHALLENGE

S. C. MEHTA

THE social control of banks which has been initiated by the Government of India has given a jolt to the whole co-operative credit movement. There have been charges and counter-charges in the press by both co-operative and commercial banks.

It is claimed that commercial banks are now approached to enter the field of rural credit because the co-operatives have not been able to make any headway in the last several years in this field. It seems that the commercial banks have become enthusiastic about this. Naturally, co-operative banks are worried about the unequal competition that they will have to face from the powerful commercial banks who would steal away all of their rich clientele, finance their defaulter-members (thus turning them into bad debtors) and consequently, bring all the business of the co-operative banks to a stand-still.

Though these fears are not entirely unfounded. It would be wrong for the co-operative banks to object to the entry of the commercial banks in the field of rural credit in which they have not acquitted themselves creditably. Agriculture is an important sector which must be financed well.

Let us see how the co-operative banks have fared in the last few years. Despite the liberal patronage of the Government and virtual monopoly in the rural sphere, they have been able to advance only 30% of the total rural credit required, and have not been able to displace the traditional moneylender who still meets the remaining 70%.

Secondly, whatever credit is being made available by co-operatives goes mainly to the rich class of farmers. The Rural Debt and Investment Survey, carried out by the Reserve Bank of India, revealed that 13% of the rural households (the groups having assets over Rs 10,000, received 53% of co-

The entry of commercial banks into the field of rural credit should make the entire co-operative movement to take stock of its condition and to put its house in order.

operative loans, while the lowest groups comprising 30% were granted only 5% of loans.

Thirdly, the percentage of overdues in respect of loans disbursed by co-operatives is soaring do year after year and giving cause for genuine alarm. It was as high as 29% in 1965-66.

The financial condition of co-operatives in the country has not been quite hopeful. Out of all societies, only 15% of co-operatives could be placed in A & B classes while 12% were dormant societies. These figures neutralise much of the impact of 30% coverage by co-operatives. Moreover, they spell a bleak future for the movement which has so far been kept alive and sustained only with the help of advances from the Reserve Bank of India, at concessional rates of interest to the extent of 66% of their total working capital. Their record in mobilisation of rural savings is also insignificant.

Looking at these facts on the debit side, one would not feel hopeful about the co-operative movement. But it is not all that bleak. The movement has already built up a three-tier structure, having the State co-operative bank at the apex-level the central co-operative banks at the district level and the service

co-operatives at the base. Though this structure is not very powerful, it could be said with sufficient justification that our State co-operative banks and a large majority of central co-operative banks have built up ample resources which could serve them in good stead in times to come. The co-operative movement can also claim, with pride that they have expanded their financing of agriculture from Rs 20 crore to Rs 550 crore within the last two decades. Though the primary co-operatives are not in satisfactory shape, a large percentage of the ailing societies are capable of being resuscitated. In fact, the revitalisation process and efforts to make the societies viable units are in full swing throughout the movement in India.

The movement is fortunate in being able to enjoy a number of concessions and privileges, like the exemption from stamp duties, charge on land, recoveries of loans as arrears of land revenue, income-tax concessions, subsidies and state participation in their share capital, conduct of fair price shops and numerous other facilities. Commercial Banks cannot expect any such generous deal from the Government.

Primary service co-operatives at the village level, where their management committees and office bearers know every borrower intimately can and do help in distributing loans to proper persons and also in their recovery. The central co-operative banks have more than half of their total number of offices in places with a population of less than 10,000, while only half of the branches of commercial banks are located in centres with a population of 50,000 and over and the number of their branches in towns with less than 10,000 people is insignificant.

The co-operative movement thus owns an effective administrative machinery for dispensing rural credit which will take commercial

banks decades to build up. It will be very difficult for commercial banks to collect financial information about their customers and to supervise proper utilisation of their loans and their prompt repayment.

COMMERCIAL BANKS' DIFFICULTIES

Commercial banks would not be able to disburse loans to a large majority of small farmers who have negligible securities to offer. Because of local laws, sometimes the landed security is not available to commercial banks. The commercial banks have also to abide by the safety regulations prescribed for lendings by the Reserve Bank of India to which co-operatives are not subjected. Moreover, depositors' money with the commercial banks can be invested only in safe and profitable channels with the consequence that only a very small minority of farmers who need big loans and who have sufficient security to offer, would become eligible to receive credit from commercial banks.

The fear that commercial banks would lure away the rich clients of co-operative banks is also hypothetical. In several States, the maximum loan sanctioned by co-operative banks is only Rs 1,000. Moreover, the apprehension that the small farmer is necessarily less honest is not correct. In fact, most of the overdue of co-operatives are in the name of bigger borrowers.

In fact, commercial banks are themselves not too keen to enter the rural sector; they have been rather compelled to move in, under the threat of nationalisation. They, therefore, harbour least intention of competing with co-operative banks and invading a domain which has already been littered with the bodies of hundreds of unsuccessful co-operatives. Moreover, they have no funds to spare for rural credit and whatever money they would invest in the countryside must come from mobilisation of rural deposits which is not an ordinary task. In fact, they are also demanding all the privileges of cooperative banks which seems to be an excuse invented by them for avoiding agricultural finance.

WARDING OFF ILL-EFFECTS

But still it is possible that the entry of commercial banks in the sphere of rural credit will have certain ill-effects. Co-operative banks may be handicapped because of the rigidities of the crop loan system, loaning period and fixation of maximum credit limit of borrowers, while commercial banks supposedly may not be bound by any such scruples. However, in actual practice, commercial banks will tend to be more cautious in their dealings. Sometimes the competition may prove serious in areas where co-operatives are very weak, or very inefficient or simply inactive. This will definitely compel the co-operative movement to resort to the slogan: "do or die". But it should not raise a scare. If the societies are not working properly, they must mend their fences and improve their operational efficiency or face extinction.

The co-operative movement would improve its image considerably, if a lot of deadwood is cast off, leaving behind only viable units, throbbing with vitality. Today, all departmental officers are shy of cancelling registrations of even 12% dormant societies which carry on their existence on paper from year to year. In Orissa, Rajasthan and West Bengal, this figure goes up to 25%, while it is 70% in Assam. It is clear that these 85% societies must prove their worth or else go.

SUGGESTIONS FOR IMPROVEMENT

But it does not mean that co-operative banks may allow co-operatives to be vanquished simply because of unfair competition of commercial banks. They must build a protection wall around their domain and support all weak societies to become stronger. Central co-operative banks must also strive to put their house in order. The following suggestions would enable them to improve their working:—

(1) Every district co-operative bank must constitute a permanent commission (or a subsidiary co-operative) which might take over all ailing societies, which are unable to help themselves. Necessary amendments must be introduced in the

Act and Rules to implement this scheme. All such societies which are incapable of being improved may be liquidated on the recommendations of the co-operative banks and a branch of the bank may be opened in the area to undertake direct financing. Other societies should be managed by them which should restore them to their health. In all such societies, nondefaulter members should continue to get bank finance. In the same way, the State co-operative banks should be authorised to take over central co-operative banks which are not doing well but should reinstall their boards, once they are set on their feet.

(2) Each bank must have an effective supervision machinery of its own to supervise the working of the constituent societies. Where this supervision still rests with the co-operative department or any other agency, it should be immediately transferred to central co-operative banks. There should be no departmental interference in the working of the central co-operative banks. The Registrar, if he feels the need, may put officers of the department on deputation to banks, but this should be strictly a temporary phase, till such time when the banks develop their own supervisory staff. The department and the state co-operative bank should, however, undertake frequent inspections of the co-operative banks. Since the Reserve Bank of India is, however, conducting regular inspection the former inspection should, besides improving their working, ensure compliance of Reserve Bank Inspection Notes and the Audit Reports.

(3) In some States, the audit is conducted by a separate machinery, independent of the co-operative department. In such cases, the compliance of the audit reports is often neglected. Audit is useless, if timely compliance cannot be enforced. Hence, either the co-operative, department or the audit department with separate staff must be charged with the responsibility of enforcing compliance of all suggestions and settlement of all objections made in the audit reports. In course of time, the co-operative banks can be advised withholding of their sanction of loans to co-operatives, until they furnish compliance certificate from the auditors.

(4) The co-operative banks should maximise their efforts to mobilise rural deposits. The movement can take a lead from Punjab agricultural societies in this respect which claim 27% of the total in India. But even this quantum is very insignificant, viewed as a proportion of the working capital. This mobilisation of deposits is possible only when we go on multiplying the number of viable societies, having their own office and paid secretary. Some of the big or large-sized societies can be accorded the status of a 'rural bank'. In 1965-66, we had some 1,048 agricultural and 1,379 non-agricultural societies with an owned capital of over Rs one lakh. Many of these and some others may be upgraded. Other societies may be selected to act as 'pay offices' or agents of the central co-operative banks to raise thrift deposits through pigmy banks or fixed and recurring deposits, for which several incentives may be devised. But it is incumbent on the co-operatives to raise the quantum of their deposits from the present 6% of their working capital to 25% in a phased manner as early as possible. In case of the central co-operative banks, the percentage of 40% could well be raised to 60 to 80%. But in such cases, we will have to pay more attention to those central banks which command a very small percentage of deposits. It has been observed that wherever banks have launched vigorous deposit campaigns, they have invariably succeeded.

(5) The problem of overdues is gradually assuming alarming proportions which must be tackled on a war footing. Even the Reserve Bank has recommended establishment of Agricultural Credit Corporations in the four eastern states and Rajasthan, implying that the co-operative movement has failed in those states. Another decision of the Reserve Bank to debit the account of the State Government, whenever any State co-operative bank fails to make timely repayment to the Reserve bank, is also of a wide import.

The banks would have to formulate proper norms and collect data scientifically, before maximum credit limit of the borrowing mem-

bers is fixed. This will be possible only when its members are encouraged to keep detailed accounts of their agricultural operations. The loans should be advanced and recovered in time. Moreover, their utilisation shall have to be closely supervised. For this purpose, the bank's staff must be an agricultural extension expert who knows the whole process intimately. Drastic and prompt action should be taken, if recoveries are not possible in any other way.

(6) Another important step which is long overdue is to have a competent and qualified management in co-operative banks and co-operative societies. The Registrars in some States have specified the qualifications of the managers of co-operative banks, but there is no such prescription for the other staff of the bank and the paid secretaries of the societies. There should be judicious and impartial selection of all the staff which should be competent and should be trained in the co-operation centres. Only competent employees should be recruited.

(7) So long co-operatives are democratic organisations, we cannot avoid politicians holding their reins of power. But we must ensure that they do not exploit the institutions for serving their own selfish ends. This could be accomplished (a) by co-operative education and creating consciousness among co-operators so that they may elect only the right people; (b) by the co-operative department officers exercising strict vigilance on their working and to use their powers in setting matters right, whenever these go astray; and (c) by constituting a high tribunal of the type of Lokpal envisaged by the Administrative Reforms Commission, before which any Chairman, Managing Director or other office-bearer of the banks or big co-operative institutions could be impeached by a director of the institution. The tribunal may consist of retired High Court Judges and may be constituted by the Movement which must take sincere steps for self-regulation.

But even then there may arise several occasions and areas of action when co-operative banks may come

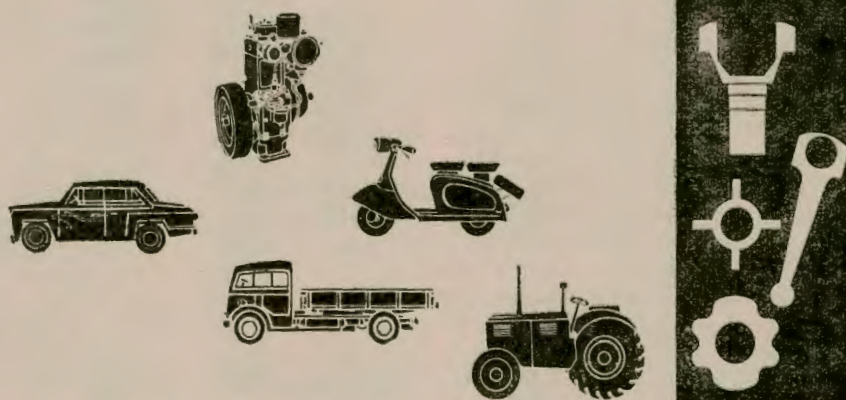
into conflict with the commercial banks and the state must step in where co-operatives, are not able to protect themselves from the commercial banks' competition. After all, the Government which has sponsored the co-operative movement and has been nourishing it for the last half a century, cannot allow it to be liquidated at the altar of social control which is its own creation.

A National Consultation Committee has already been formed for co-ordinating the rural finance activities of the commercial and the co-operative banks which would see how any unhealthy competition between the two can be avoided. Such committees would have to be set up at the State and even at the district level. Generally, the commercial banks have been asked to help long-term finance through land mortgage banks and advance credit for marketing, processing, storage, agricultural requisites, agro-industries and plantations. They may also select farmers who need bigger loans, not available from co-operatives say, for farmers with more than 25 acres of land. It may be provided that commercial banks may not advance loans to any person who is a member or defaulter of a co-operative society; further, they may be asked to charge 1% more interest for their loans.

In practice, it may be difficult to demarcate zones for the two types of banks so that they may not intrude upon each other's territory. You cannot prohibit service by commercial banks where co-operatives are not doing well. But you cannot also ban the entry of co-operatives where any commercial bank has made a headway. Much would depend upon mutual goodwill and the power of the co-operatives to accept the new challenge.



GKW was the first to develop alloy steel auto forgings



GKW ENGINEERING & FORGINGS DIVISION

Using a wide range of alloy and carbon steels made within GKW, the ENGINEERING & FORGINGS DIVISION was the first to produce fully indigenous forgings for the automobile industry.

The forge expansion which has been completed with the addition of new equipment now enables this division to offer a comprehensive range of precision forgings required for commercial vehicles, motor cars, scooters, motor cycles, tractors, oil engines and the like. As part of the diversification programme, the ENGINEERING & FORGINGS DIVISION provides a new service to industry—machine reconditioning and fabrication of special purpose machines tailor-made to suit individual needs.

GKW ENGINEERING & FORGINGS DIVISION is just one example of how GKW has decentralised to specialise. There are three other divisions, each complete in itself, meeting specific needs of a large number of industries. The SANKEY PRECISION PRESSINGS DIVISION for electrical stampings and pressed components; the STEEL DIVISION for alloy and special steels; the FASTENERS DIVISION for bolts, nuts, rivets, screws, other industrial fasteners and wire products. And G.K.W.(Overseas Trading) Ltd., a newly formed subsidiary, takes care of a rapidly intensifying export drive.

Re-organised, re-vitalised GKW, first to make many products in India, is now streamlined for greater efficiency—the bedrock of leadership in industry.

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GKW—DECENTRALISED FOR SPECIALISED SERVICE TO INDUSTRY

Rajput Paintings in American Museums

WHATEVER the viewer may seek—history, poetry, or visual enchantment—can be found in a treasure trove of Rajput miniature paintings currently touring American museums.

More than 100 paintings on loan from the noted American collector Edwin Binney, 3rd, capture the beauty of Rajput life from the 16th century through the 19th. The exhibition presents the art of Rajasthan, Central India and the Punjab Hills, and includes several stone sculptures and a selection of jeweled weapons. Rich variety characterises the display. All schools of Rajput painting are included besides hitherto unpublished works from the Punjab Hills.

According to the Museum's Curator of Asiatic Art, Henry Trubner, the Binney collection is the most important single private collection of Rajput miniatures in the United States. In contrast to the more elaborate decorative style of Mughal court paintings, the simplicity and directness of the Rajput miniatures are a delight to all who see them, says Mr. Trubner. The 350 guests who attended the preview, were struck by the glowing brilliance of the narrative paintings.

Wherever it has been displayed, the Rajput exhibition has created interest. The Oregon Journal has described the display as "a lovely tropical garden".

A Rare Indian Manuscript

AN exquisite Persian manuscript completed in 1825 and lavishly illustrated with 120 coloured miniatures of the finest quality, has been added to the Library of the American Congress.

The 292-page manuscript was executed in India in beautiful *Nastaliq* and was compiled by Lt. Col. James Skinner. Half Scottish and half Indian by birth, Colonel Skinner was a prominent figure in India. The manuscript is divided into two parts. The first discusses

the distinguishing marks, characteristics, customs, history, and rites of the different castes of India and details the status of various castes. The status and position of Indian Muslims in that century have been discussed in the second part.

The miniatures occurring in the text depict various occupations, ranging from grave digger to emperor, and offer a valuable insight into the professions and trades as they were practised in India during the early decades of the 19th century. A beautifully wrought heading and border highlighted in gold appears on page 10, where an anthology of poems in praise of Almighty God begins.

A Robot Dreamland

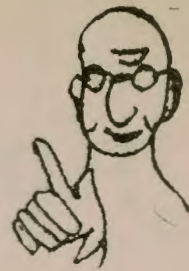
CONSTRUCTION work on a Robot Pavilion, the last of the 28 pavilions to be built by Japanese private exhibitors, has started at the EXPO '70 site. This unique pavilion, shaped like a loaf of bread, to be built in the Expoland recreation area, will comprise four sections, each full of various types of robots.

Its theme will be "Dreams of Children". A total of 41 robots, each measuring one to two meters tall, will be created by Jiro Aizawa, Japan's top robot expert.

In the first section, giant robots will greet, talk to, and shake hands with visitors at the entrance. The second section, to be called Forest of Robots, will illustrate history of robots and their contribution to man's world.

The third section called Towns of Robots, features a robot theater and a playland where robots will 'sing' robot songs and play musical instruments. Other robots will take souvenir photos and present commemorative stamps to visitors.

Futuristic robots will be demonstrated in the fourth section called Robots of Future. They will include Space Robots and Sea Robots which will be used for exploring space and the sea in the 21st century. This section is to show how robots will influence man's life in a cartoon style.



IGNORAMAN

Wants to Know

*Whether
doctors doing
heart transplants
also lose their hearts*

An Alpine Medical Centre for Athletes

CONTINUED medical observation and research at a medical centre high up in the Armenian mountains show that training in Alpine conditions improves the general condition of organism and muscular activity. The process of acclimatisation proceeds much more successfully with the maintenance of an active training regimen.

The medical centre at Tshakhkadzor, a sports township—is equipped with the most modern apparatus. It has a pressure chamber and an electrocardiograph transmitter, which makes it possible to transmit the patients' cardiograms directly to the Cardiology Institute in Yerevan and to receive necessary consultations from the Institute.

The centre has wards for diagnostics, physiotherapy, balneological treatment, a surgery block, stomatology and X-ray department.

"The main task of the medical centre is to maintain constant observation over the condition of athletes, to adjust the regimen of their training, and to create conditions for fully restoring their strength after competitions", says the Chief Physician of the Centre.

FLOODS CAN BE TAMED

In our country, devastating floods occur year after year, causing untold misery to people and enormous damage to crops and property — the annual estimate being over Rs.100 crores.

HOW TO AVOID :

- ★ by paying heed to timely warnings .
- ★ by raising level of villages in flood zones
- ★ by desisting from unauthorised cultivation on river banks
- ★ by cooperating in flood protection work

STEPS TAKEN :

- ★ 7060 km (4410 miles) of embankments and 8720 km (5450 miles) of drainage channels already constructed.
- ★ 4580 villages raised above the flood level.
- ★ 100 towns and 5.4 million hectares (13.5 million acres) of land afforded protection against flood ravage.

FLOODS ARE NATURAL

BUT NOT ALL THE

DAMAGE THEY CAUSE

**CENTRAL WATER AND POWER COMMISSION
MINISTRY OF IRRIGATION & POWER, GOVERNMENT OF INDIA**

davp 68/601

PLANNING IN STATES HAS NOT BEEN FROM BELOW

While the Fourth Plan was formulated on the basis of State Plans, consistent with the principle of planning from below, most States did not have any machinery to ascertain felt needs of the people in framing their Plans. Even the Kerala Chief Minister's 'Alternate Plan' has not involved the people in its preparation. Planning Boards and planning committees at the levels of district, block and village are essential to guarantee public participation in planning.

THE objective of economic planning is to achieve rapid development by effectively mobilising the human and natural resources available in the country and thereby meet the constantly growing material and cultural needs of the people. The role of the people in making economic planning a success can hardly be stressed. People must not only realise but also feel that the shortening of the period of hunger and poverty depends entirely upon how quickly they fulfil the targets of economic plans.

Public participation both in the 'formulation' and 'implementation' of the plans is a guarantee that the plans correspond to the needs of the society and that they will surely be fulfilled. This is why Gandhiji gave importance to 'planning from below'. In a country like ours, planning from below means planning from the village-level.

The Fourth Plan is basically a "document incorporating projects" and schemes drawn up by the State governments for the welfare of the people. A significant change is noticed in the process of formulating the present Plan. In the past three Plans it was the practice to give first the 'Plan Outline' to the States and the State Plans were worked out in detail with reference to the Outline. In respect of the Fourth Plan the process adopted in formulation has been basically different. Consistent with the policy of planning from below, the Centre and the Planning Commission

V.A. VASUDEVARAJU

sion asked the States to prepare their Plans first. The State Plans were then discussed in detail by the Planning Commission and the Chief Ministers. With necessary adjustments, the State Plans were then fitted into the National Plan. Thus the National Plan is the integrated version of the Plans prepared by the States and the Central Ministries.

The National Development Council endorsed the preparation of the Fourth Plan in December 1967. The 'Approach Paper' prepared by the Planning Commission was also approved by the NDC. By inviting and publishing 'Comments on the Approach' in its widely circulated journal 'Yojana', the Planning Commission had provided a forum for discussion to the citizens. Thus both the State Governments and the people were associated in the formulation of the Fourth Plan.

STATE PLANS

However, the discussions in the NDC meeting and in the Lok Sabha did not reveal that there was any appreciation of the 'new approach' of the Centre and Planning Commission in the process of formulating the Fourth Plan. On the other hand, these occasions were made use of by the Chief Ministers and Members of Parliament to find fault with the work done by the

Centre and the Planning Commission. It is surprising that no one, not even the Central Ministers and Planners, commented on the approach and process adopted by the States while formulating their plans.

By and large, a period of one full year was available to the States to prepare their plans. But the States have not observed the principle 'planning from below'. People's representative institutions and organisations below the level of the State Governments were not involved in plan formulation. States do not seem to have realised the importance of involving village Panchayats, Panchayat Samitis, Zilla Parishads, academicians, various political parties and public-spirited citizens in Plan formulation. There was no public discussion on the State Plans. This is a serious omission on the part of the State Governments. In the absence of the participation of the peoples' representative institutions and different sections of the society in Plan formulation, it is not known to what extent the State Plans correspond to the needs and aspirations of the different regions in the States. Both the Congress and non-Congress governments in the States have miserably failed to make use of a 'great opportunity' to involve the people and popular institutions at the grass-roots level in the 'planning exercise' which would have served well to create the much needed 'plan consciousness' among our countrymen.

Most State Governments, for reasons known only to them, have not set up State Planning Boards, as recommended by the Administrative Reforms Commission. In the absence of this institution, it is not known as to how planning is done or who formulates the plans in the States. The State Plans submitted to the Planning Commission lack 'expertise' in their preparation. They do not reflect the 'felt needs' of the people of different regions in the States. The State Plans were at best 'an end product of a collection of proposals of government departments plus an assortment of pet projects and fancy schemes which were drawn up in order to make a big claim for larger Central assistance.

While the State governments are largely responsible for the wrong approach and process in plan formulation, it is strange that some of the Chief Ministers and MPs have chosen to preach the 'essentials of good planning' to the Centre and the Planning Commission. One of the MPs stressed that 'the proper thing would be to do the planning from the grass-roots stage and associate various political parties with it'. This piece of sound advice is more relevant to the States.

ALTERNATE PLAN

It is pertinent to examine some of the statements made by the Chief Ministers which fall within the scope of this article. Mr. E.M.S. Namboodiripad had expressed in his press conference that the draft plan could only be considered as 'a document of the Planning Commission and not of the NDC'. At the conference of Chief Ministers he made it clear that he was not a party to the consensus that was said to have been arrived at before the Fourth Plan Draft was prepared. He regretted that his 'alternate plan' was not considered. He had rightly called the 'alternate plan' as a plan prepared by him. In preparing the alternate plan, Mr. Namboodiripad did not give any importance to the involving of the people of Kerala and their representative institutions and organisations. There was only a solitary seminar at Trivandrum to discuss his 'alternate plan'. This

is no compensation for the absence of mass participation at the formulation stage. The approach of Mr. Namboodiripad is in total contrast to what one finds even in Russian Planning.

THE RUSSIAN WAY

In Russia 'enormous importance is attached to the participation of masses in *drafting and implementing* Plans. The Seven-Year Plan is an example of a Plan drafted and shaped by the masses. More than 968,000 meetings were held in enterprises, collective farms, institutions, educational establishments and so on to discuss the draft control figures. More than 70 million people participated in these meetings and as many as 4,672,000 took the floor to express their views on the plan and to make suggestions for its improvement. In addition, party and administrative bodies and the Press received over 650,000 letters and articles containing various proposals—more than 300,000 of which were published. The draft control figures were discussed in a business-like manner at regional and territorial party conferences and at Congresses of the Communist Parties in the Union Republics'. It is unfortunate that the Kerala Chief Minister had not considered it necessary to create conditions for 'mass participation in plan formulation'. His alternate plan is only 'a plan of his thoughts' and not the 'plan of the masses'. It is a sad thing that even the exponents of communism in India to whom the people have provided an excellent opportunity to hold the reins of power in a few States have failed to realise the importance of mass participation in Plan formulation.

The Tamil Nadu Chief Minister calling for a radical and structural change in the set-up of the NDC suggested that the Council should divide itself into purposeful *working groups* on agriculture, industries, education and so on. He also pleaded that NDC be given a permanent basis and it should have a continuing secretariat. There are novel suggestions but they fail to take into account the very purpose for which the NDC was brought into existence. One should not expect a policy-making and advisory

body like the NDC, to undertake serious studies and research in planning. One is tempted to ask why Tamil Nadu has not yet created a permanent planning machinery.

Mr. Ajoy Mukherjee pointed out that 'his government had not been associated with the drafting of the Fourth Plan'. This is due to the fact that the political situation in West Bengal was fluid when the preparation of the Fourth Plan was in progress. West Bengal too has no permanent Planning Board. This underscores the fact that the States should devise a permanent 'working arrangement' for Plan formulation even in the absence of popular governments. The Press have cautioned that the 'Fourth Plan will not work if political stability was not maintained' because recent experience has shown that political bickerings and confusion have had a disastrous retarding effect in quite a few States. Can the nation afford to leave the fate of planning to be decided by the vagaries of political situations? This is a crucial issue on which immediate decision is necessary if we are to guard against delays and deficiencies in planning.

NEW TECHNIQUE

The change in the technique of preparation and formulation of the Fourth Plan also calls for the creation of a permanent and competent planning machinery in the States. The Five Year Plan, hereafter, will form the main base. But the 'elaborate operative plan for each year' will have to be prepared by the States in order to maintain the development effort during the year along the lines indicated in the Five Year Plan. The Annual Plans of the States would provide details of the year's programmes in the light of immediate past performance, physical availabilities and financial resources. The States have to undertake an analysis of fiscal and regulatory policies, administrative organisation and institutional framework at various levels and also *evaluation* of their Plan programmes throughout the Plan Period. These new jobs also necessitate the creation of permanent planning machinery in the States. Hence both the political situations that may develop

in future and the new technique of preparation and operation of annual plans demand the setting up of State Planning Boards.

CHIEF MINISTERS' ROLE

The States are going to spend 42.1% (Rs 60,66 crore) of the public sector outlay during the Fourth Plan. Central assistance in future will be in the form of 'block grants and bonds' and the States will have much greater initiative in the formulation of schemes and programmes. The Prime Minister has assured that 'interference by the Centre, if any, in the implementation of State Plans, would stop forthwith'. She has also declared that 'there will be effective transfer of discretion in essentials of State Plans'. So the States in future have to show more initiative in planning.

The States have now a larger responsibility to give a practical shape to the principle of 'planning from below'. If State Plans are to be realistic, they have to create a feeling in the people that planning is not something that comes from outside or above but what each District, Block and Village does to develop its own resources and potentialities. Planning Committees at each level should be constituted consisting of various interests and experts. At the State level the present practice of entrusting plan preparation to 'generalist administrators of government departments' should be put an end to at once. State Planning Boards which have got the sanction of law and which could decide things on the basis of expertise should be set up soon. A national dialogue on the constitution of State Planning Boards, the role of ministers and experts in it, functions and responsibilities of Planning Committees at District, Block and Village levels, planning processes and techniques to be adopted by these Planning Committees and Boards would certainly facilitate clear thinking on 'parallel responsibilities' that should be shouldered by peoples' representative institutions at different levels in our democratic set-up. Needless to say that purposive discussions of this type should be followed by concrete steps to translate ideas into action.



Australian Corriedale sheep and lambs

SHEEP BREEDING FARM IN HARYANA

INDIA and Australia have agreed to co-operate in the establishment of a large sheep-breeding farm near Hissar, in Haryana. The project is aimed at breeding high quality sheep in large numbers. The farm will provide pure-bred Australian Corriedale sheep for cross-breeding with indigenous sheep at Central and State Government farms in other parts of India. The distribution will be made through extension centres.

The farm will also provide training in sheep husbandry, including training for extension officers to ensure that sheep owners get the

maximum benefit from the scheme.

The Union Government is making available 7,000 acres of land for the Hissar farm. The Indian contribution over the seven-year development period — including land, buildings, equipment and staff — will be worth approximately Rs 104 lakh. Australian contribution will total about Rs 80 lakh, including the provision of 5,000 Corriedale ewes and 110 rams, plus plant, equipment and technical experts.

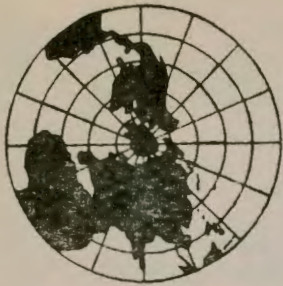
The Corriedale breed of sheep was selected for the scheme because it combines a high yield of wool with good quality mutton.

A RICH VILLAGE OF MAHARASHTRA (from page 11)

Ankalkhop is a lesson in co-operation. Every corner of the village bears witness to its benefits. The village roads are tarred. A primary school has been built out of Rs 60,000 contributed by the villagers. Without getting any aid from outside, the Service Co-operative Society has built a godown costing Rs 75,000. The society runs consumer stores, an oil centre costing Rs 4 lakh and a fertiliser marketing centre. The turnover of the co-operative society consumer stores is over Rs 6 lakh. The socie-

ty's working capital is now Rs 30 lakh and the loans granted to its members total Rs 23 lakh.

With incomes soaring up for every household in the village, the recovery of land revenue, Taccavi loans and various other loans disbursed by the co-operatives is cent per cent and timely. If the beaming faces of the villagers and the growing signs of affluence are any indication, the village co-operative's goal of securing for each household in the village an average income of Rs 1,800 will not be an idle dream.



WORLD SPOTLIGHT

POLAND

SMOKING WITHOUT FIRE

Smoking is the oldest method of meat preservation, probably as old as fire itself. Our ancestors in a distant past preserved meat by smoking it and this method has hardly changed since then.

Smoke contains a large number of chemical compounds, probably as many as 10,000, of which only 200 or so have been identified so far.

At the end of the 19th century, attempts were made to modernise the smoking process by making it more effective and controlled. It was found then that smoking is actually done not by the visible components of smoke but by the invisible vapours which constitute 10% of smoke. The problem then was to separate those vapours and to prepare out of them a chemical which would simplify and shorten the smoking process.

The Russians tried to put smoke through water in order to obtain a smoking chemical compound but they were not fully successful. The Japanese used products of wood distillation to smoke about 40% of their meat and fish products as early as 1960. This method is now prevalent all over the world.

Polish specialists have invented a new method of smoking by means

of a chemical which is obtained from smoke after it is oxidised to a great extent. Two fractions are obtained from smoke through various chemical processes, the phenol fraction being the major one. It is possible to change the proportions of the two fractions depending on the requirements.

The new Polish chemical is superior to those used so far in that it prevents meat products from getting rancid. This property has been tested in the Meat Institute of Denmark. A traditionally smoked *salami* could be preserved for one and a half to two months before it started getting rancid. The same *salami* smoked with the Polish chemical can be preserved twice as long. Added to lards, the chemical keeps it fresh in room temperature for one year.

The Medical Academy in Wrocław in Poland carried out tests on animals to find out if the new smoking chemical is not harmful to the organism. The tests were carried out in accordance with the latest requirements of the World Health Organisation concerning substances added to food products. The results are positive. The new chemical has been tried on meat products, fish and cheese. It is important to mention that the new chemical makes it possible to tin fish on factory ships in the sea.

The taste and the smell of the products preserved by means of the new smoking chemical do not essentially differ from the traditional, and if they do, it is always for the better.

Children in the Soviet Union

THERE are 1,275 million children under 15 in the world today. Demographers predict that by 1980 the number will increase to 1,500 million. The condition of the rising generation is by no means the same in different countries. It is determined by the historical stage of development and the social structure.

In the Soviet Union, children's education is a major aspect of internal policy. The country has set up a whole system of state

institutions beginning with nurseries and ending with general educational schools.

Creches and kindergartens at present cater for over 10 million children. About 50 million children go to 214,000 general schools.

About 4,000 Young Pioneer Palaces and Houses help to bring out the talents of children. School children spend their summer holidays in 9,000 country camps situated in picturesque spots, 5,000 libraries have on their shelves books by children's writers, and 123 theatres give performances exclusively for the youngsters. There are young technicians' and young naturalists' stations, children's railways, stadiums, special hospitals and clinics.

A wide network of medical institutions for the mother and the child has been established in the Soviet Union. As many as 36,000 obstetricians, over 70,000 paediatricians, hundreds of thousands of doctors' assistants and nurses work in consultation centres, clinics, hospitals and sanatoria for children.

NEW STORAGE TECHNIQUE

With a new storage techniques developed in Britain, fruits and vegetables can be kept in good condition for appreciably longer periods than either with conventional storage techniques or with carbon dioxide-controlled atmosphere stores, such as are used by many apple growers. In the new technique, nitrogen gas is used to reduce the oxygen level of the atmosphere.

The level to which the oxygen needs to be reduced varies between different crops, and the requirements of some crops have yet to be accurately determined, but with apples, strawberries and celery, the system has already proved extremely successful. Cauliflowers have been kept satisfactorily for up to eight weeks.

For this technique, capital costs are said to be not significantly higher than for normal chilled stores.

ENGINEERING NOTES

Indian Know-How and Plants Go Abroad

TODAY, Indian companies not only export engineering equipment and services, but even design, manufacture and erect whole engineering plants abroad.

Easun, a Madras group of companies, is now engaged in completing a cent-per-cent turn-key job in Kuwait worth Rs 2 crore against international competition. The entire design, manufacture and supply of transmission for line towers, A.C.S.R. conductors and complete erection of total of 218 K.M. of 132 KV and 33 KV transmission lines for the Kuwait Ministry of Electricity and Water, are being done by Easun. Indian engineers and Indian workmen have been sent to Kuwait and the work is well under progress.

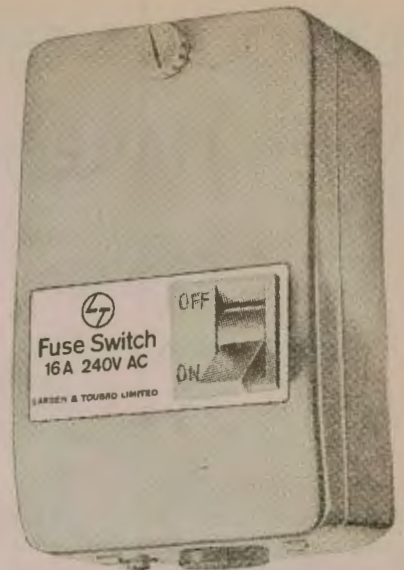
In the field of exports, Easun has come to play an increasingly vital role.

Easun Engineering Co. Ltd., a member of the Group, recently exported to Malaysia a switchgear, a cubicle type switchboard, fuse

switches and fuse distribution boards, air circuit breaker type with lamps and so on. Easun has already supplied to Kuwait 10 dozen 1000 KVA 11 kv/433 V transformers valued at Rs 26 lakh. Easun has also secured an order worth about Rs 5 lakh for exporting transformers to Sudan.

The group of companies got an order worth about Rs 7 lakh from Tanzania Electricity Supply Company Ltd. to supply and install a Power Transformer with on-load tap changing equipment.

It is interesting to note that Hackbridge-Hewitt & Easun Ltd. (HHE), a member of the Easun Group, was the first in India to manufacture and test 220 KV/132 KV 33.3 MVA single phase auto transformer. HHE was also the first in the private sector to manufacture 30 MVA 132/33 KV power transformer. Another company of the Group, Eswaran & Sons Engineers Private Limited, manufactured the largest switchboard ever made in India.



A NEW SWITCH

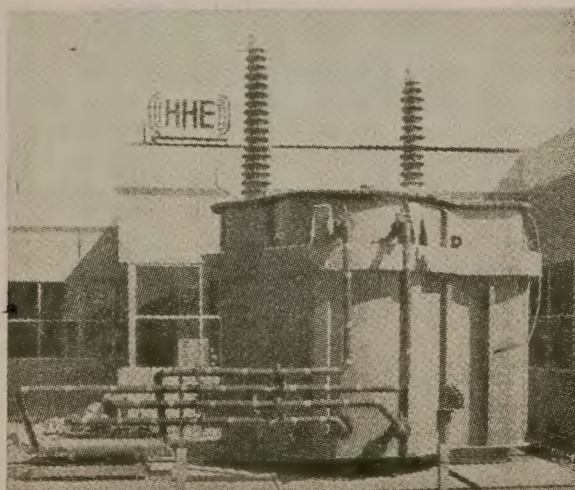
An Indian company has designed and produced a new double pole fuse switch for use in homes, offices and factories. Larsen and Toubro Ltd., which has produced this iron-clad switch, claims that it is specially designed to fit in with modern decor in homes and offices and can be used as a main switch for single phase circuits, domestic service connections and for control and protection of air-conditioners, cooking ranges and geysers.

The new product incorporates special design features for easy installation and quick and simple rewiring of fuses. It has an elegant appearance.

WHEELCHAIR FOR THE DISABLED

A remarkably simple wheelchair, designed mainly for developing countries, was shown at a recent Anglo-Swedish symposium on wheelchair design held in London.

Adapted from a child's tricycle and a garden chair in standard production, the lightweight wheelchair—it weighs only 112.5 kgs—has been designed by Dr. P.A. Isherwood of Loughborough University. It is fast and manoeuvrable, simple to repair, has anti-trip bars at the front, and can, it is claimed, be taken through 6.5 cm inch-deep mud.



THE FIRST 220 KV
TRANSFORMER
MADE IN INDIA

LABOUR-INTENSIVE AGRICULTURE WILL MAKE IT MORE PRODUCTIVE

P. R. DUBHASHI

THOUGH improvement in land is so fundamental to agricultural development, we have, in the past, paid comparatively little attention to the programme of long-term investment in agriculture. By and large, this was entirely left to the resources and enterprise of the farmer himself, and he had very meagre resources to draw upon for this purpose. This led to a steady deterioration of soil, over a period of time, accounting, in the main, for the low level of agricultural productivity. This negligence was responsible for the very peculiar characteristic of Indian agriculture, namely, that it was not only 'capital extensive' but also 'labour extensive'.

One can readily understand the feature of capital extensiveness because where capital is scarce, there could be very little input of both working capital and fixed capital in land. But where there is population pressure on land, how can agriculture be labour extensive? This apparent paradox can be understood when it is seen that because of very little capital going into land, gainful employment opportunities available to the agricultural working classes also tend to become limited. The manpower engaged in agriculture is found to be idle for a considerable period of the year and whatever labour is available for agriculture, it is not highly skilled. The result is that productivity in agriculture is extremely low.

It can thus be seen that to make agriculture more productive, it has to be more labour intensive, and in order to make it more labour intensive, it has to be made more capital intensive. So far as the supply of working capital is concerned, a breakthrough was made with the introduction of the Crop Loan Scheme. But the problem of long-term fixed investment in agri-

culture remained unattended till the middle of the Third Five Year Plan. It was then that a major step was taken with the establishment of the Agricultural Refinance Corporation. The Corporation was established in 1963 to serve as a refinancing agency for medium-term and long-term loans to agriculture by direct financing and subscription to special development debentures of the Central Land Mortgage Banks, State Cooperative Banks and scheduled banks.

MANPOWER, NOT MONEY

The first few years of the working of the Agricultural Refinance Corporation showed that the constraint to development is not so much money as manpower, not so much the limitation of financial resources as of knowledge, organisation and technical and managerial skills. It was found that while funds were available in comparative abundance from the Corporation, there were no takers. This was despite the fact that the scope of agricultural development, as envisaged by the Agricultural Refinance Corporation, was very vast.

The schemes of the Corporation included major and minor irrigation, reclamation, soil conservation, mechanisation through tractors and power tillers, horticulture, poultry, dairy and even agricultural overheads like storage. In spite of this extensive scope for the working out of land development projects, it was seen that very little progress was recorded in the first two or three years. A certain amount of frustration developed regarding the implementation of the schemes. The Agricultural Refinance Corporation was, therefore, compelled to take positive steps to quicken the process of formulation of projects and their implementation. One direction in which this was done was through, what may be called, liberalisation of the terms on which

finance was made available. For instance, in plantations, the cost of tenements for the working classes was made eligible for refinancing, though, strictly speaking, this is not an agricultural investment. Similarly, for projects like rural electrification, the expenses incurred by the Electricity Board on the construction of low tension wires was included as legitimate cost of investment of an irrigation project along with the cost of installation of pumps. Also, the participation of the State Governments in financing these projects was reduced from 25 to 10 per cent.

The Corporation also took steps to appoint special technical personnel to go round the States and guide institutions concerned in the formulation of these projects. Regional offices of the Agricultural Refinance Corporation were opened. Teams, consisting of Agricultural Refinance Corporation and Central Government officers went round. All these measures did lead to a somewhat better progress in the later years. Indeed, during 1967-68, as many as 89 schemes were sanctioned by the Corporation. They constituted nearly 70 per cent of the total number of the schemes sanctioned during the five years of its existence.

MAJOR GAPS

But there were major gaps. The expected progress did not materialise in actual practice. In other words, what was expected to be disbursed and utilised was not disbursed and utilised actually and figures available at the end of 1967-68 showed that though a sum of Rs 25 crore was expected to be spent, the actual expenditure was just Rs 12 crore. There were also cases of re-phasing and revision of investment programmes. This was symptomatic of the fact that planning of land development projects was not as close an approximation to reality as it ought to have been. It was found, for example, that the kind of

cropping pattern proposed at the time of planning did not correspond with the actual cropping pattern under irrigation. It became clear that mere instructions from the Corporation officers, external guidance or periodic visits, however important and essential they might be, were no substitute for building up the internal capacity of the land development banks to plan these projects on sound basis and to implement them effectively. A great deal of stress had to be laid on training the workers and supervisory personnel of the land development banking institutions.

PASSIVE SPECTATORS

The task of formulating the projects is mainly left to the technical bodies or government departments and there is little that the land development banks are doing in this regard. The land development banks are passive spectators, as it were, of this programme. Whatever suggestions they think they should make have little effect on the authorities. Besides, the entire project formulation work is completed on the basis of the view taken by one of the technical departments like the Public Works Department or the Agricultural Engineering Department. Other non-technical but very crucial aspects of the project, namely economic feasibility, organisation and management tend to be neglected. This explains the comparatively tardy implementation of some of the projects.

Economic feasibility aspects like the concepts of cost-benefit ratio need careful and active attention. As regards managerial aspects, we have to consider, besides coordination and control, the application of the latest techniques to land development projects. This may appear to be an undue sophistication. But it is only by grasping the concepts of scientific management and analysis and their application that we can expect to improve the standard of performance. Equally important are organisational aspects which imply the organisation of efforts in terms of mobilisation of manpower. There can be no land development without it. Human resources and their mobilisation must not be left out of the land development project formulation programme.

PEOPLE'S PARTICIPATION

Doubles Irrigation Potential

PEOPLE'S active participation has paved the way for a green revolution in the rocky terrain of Dungarpur in Rajasthan. As a result of a campaign during 1958-69, the number of Persian wheels in these southern districts of the State has more than doubled from 3,200 to 6,700. This has, in turn, increased the irrigation potential by 40 per cent. This will help produce 8,000 tons more of food-grains, sufficient for 50,000 people for one year. The campaign has cost Rs 24.05 lakh, of which Rs 10 lakh were received as peoples' participation.

It all started on March 23, 1968 when a small group of dedicated officials and non-officials decided to start a campaign for installing 1,500 Persian wheels. There were many wells in the district which contained enough water. But they were not harnessed for want of Persian wheels. The poor tribal cultivators did not have money to buy these wheels.

After the necessary preliminaries, it was decided that tribal cultivators should be given Rs 400 as subsidy and the remaining amount as loan. A token amount of Rs 50 was, of course, to be taken as their own contribution. Success of the campaign was ensured with the decision that the subsidy should be given in kind and not in cash. As a result of an economy drive in manufacturing the wheels on a large scale, their cost was reduced from Rs 850 to Rs 700. The Government Agricultural Workshop at Jhotwara, Jaipur, offered to supply them in requisite numbers. A total of 3,100 Persian wheels was manufactured by Workshop in a record time of 5 months. Local small-scale manufacturers supplied the rest.

People came in ever-increasing numbers to register their names for Persian wheels with Panchayat Samities. And it became apparent that targets needed an upward revision.

The first lot of Persian wheels reached there in the first week of October 1968. Movement of Persian wheels by trucks from Jaipur to Panchayat Samiti headquarters was a bit expensive but speed was of the essence. Delays were minimised at every step. Revenue Patwaris and Gram Sewaks co-operated in preparing 6,000 applications for loans and grants-in-aids. Soon bullock carts started moving from village to Panchayat Samiti and back to village with Persian wheels. Caravans of bullock carts loaded with Persian wheels became a familiar site to everyone passing through Dungarpur.

With the upward revision of targets, resources posed a big problem. In all, Rs 21 lakh were needed to finish the task.

The Agriculture Department sanctioned a loan of Rs. 4.05 lakhs. The Famine Relief Department gave Rs 7 lakhs. Rs 10 lakh were arranged from out of the Tribal Development Scheme. Under the Area Development Scheme, Rs 2 lakh were contributed by the Social Welfare Department.

The success of the campaign is a sign of people's determination to fight famine conditions on a permanent basis. It is also an indication of their will to improve their lot.

And now, for years people will talk of the campaign, its success and the new wave of a green-revolution which is bound to follow in its wake.



MACHINE-MADE CARPETS

S. RADHAKRISHNAN

A.N.Y. RAO

INDIA's 41 million sheep produce annually about 34.66 million kgs of raw wool. This means that the average productivity of the Indian sheep is less than a kilogram per year. By international standards, this is one of the lowest. An Australian Merino gives a yield of about five kilograms on an average per year and a New Zealand Merino over six kgs. per year. So, there is the problem of improving sheep productivity in India. It is a long term problem. The immediate one is that of better utilisation of Indian wool. Indian wool is of coarser type but it is ideal for carpet making. In fact, one of the traditional handicraft industries in India is handwoven carpets. A great deal of synthesis in design has taken place in Indian handwoven carpet making by the integration of Persian, Afghan, Chinese, French, Spanish and other patterns. Indian hand-made carpets are also an important item of traditional exports. In fact, about 90% of the hand-made carpets manufactured is exported. Another traditional item of export is raw wool. The trend of raw wool since rupee devaluation in 1966 shows a decline. In 1965-66 about 32% of Indian wool was exported. But in 1967-68, it came down to about 26%. This declining trend in raw wool exports should not alarm anybody. In fact, it is a healthy sign because instead of exporting wool in raw form, we are now exporting it in the form of finished product, namely, handwoven carpets.

In exporting carpets, we are adding Indian skill and labour to raw wool thereby providing employment to our people and earning more foreign exchange. With exports becoming more and more a

compulsory necessity for our economy it is necessary to exploit resources for that purpose. In this respect the utilisation of Indian wool for the manufacture of machine-made or tufted carpets has a great promise.

TUFTED CARPETS

The trend all over the world today is more and more towards tufted carpets which has been made possible by technological advancement both in processes and in blending natural fibres with synthetic fibres. For instance, the U.S.A., which is a very big market for carpets, is buying more and more machine-made carpets. The advantage of tufted carpet is that it can be manufactured on a large scale at competitive prices. When raw wool is blended with synthetic fibres tufted carpets can come within the reach of many people. Carpets will no longer be a luxury item to be possessed only by the wealthy. Tufted carpets can make people "carpet conscious" to make their homes elegant and graceful. The day may not be far off when every Indian home can have a carpet because tufted carpets are relatively cheaper. The potentiality of tufted carpet manufacture is to be viewed not from the domestic consumer angle, but also from the export angle.

As said earlier, Indian wool is ideally suited for manufacture of carpets. At the moment, export earnings from raw wool are about Rs six crore a year. If 10% of its export earnings are earmarked for the import of necessary machinery for the manufacture of tufted carpets, we can increase our export earnings from carpets to the tune of nearly fifteen crore a year. Thus,

an initial foreign exchange allotment for machinery will yield us a substantial return in terms of export earnings. Besides, we will gradually add one more item to our non-traditional items of exports. Tufted carpet industry will also generate more employment and income for the people. In India, we have the management expertise for undertaking tufted carpet manufacture. Skilled labour is available and raw wool ideal for carpets is there in adequate quantity. Tufted carpet manufacture will enable a better utilisation of raw wool resources.

There are still many people at home and abroad who have a preference for hand-made carpets and the imprint of craftsmanship and artistic skill. However, the tufted carpets will be for "mass consumption" and handmade carpets for "class consumption". So, there is no danger of tufted carpets eliminating handmade carpets. In our strategy of development, it is very necessary that the modern techniques and processes should not only co-exist but, also over a period of years, integrate to create new processes and techniques.

GIFT TRACTORS FOR INDIAN FARMERS

Under a new arrangement, Indians living abroad can now ship gift consignments of tractors for use by their farmer-relatives in India. Last month, the first gift consignment of 16 Massey-Ferguson Tractors left England for India.

Massey Ferguson and their associate Tractors and Farm Equipment Ltd. (TAFE) qualified for participation in the gift scheme which is restricted only to manufacturers engaged in local production in India. MF-TAFE's Madras plant has already turned out some 20,000 tractors and the manufacturing capacity is being increased to 7,000 units a year.

It is felt that the gift scheme will provide a useful complement to the Indian manufacturing programme in promoting the development of Indian agriculture.

Seminar on Co-operation

Co-operation: An Interdisciplinary Approach—proceedings of a Seminar. Published by Vaikunth Mehta National Institute of Co-operative Management. Pages 311. Price Rs. 15.

Kamla Rani

THIS volume is a compendium of papers and proceedings of a seminar held in March 1968 under the auspices of Vaikunth Mehta National Institute of Co-operation.

The discussions were related to the place of co-operation in the economic system, management in co-operation, co-operative leadership and development of co-operation as an academic discipline.

Co-operation has been chosen as an important instrument of socio-economic change by India and many other under-developed countries. In our planned economy the co-operative sector plays a balancing role lending it a certain direction and sense of values.

This volume, discussing various aspects of co-operation in simple and non-technical language and in their right perspective, adds to a better understanding of the subject.

In the very first two papers on the strategy of cooperative development, Mr P.R. Dubhashi poses the question whether co-operation, which is based on the principles of service rather than on competitive or acquisitive motives, is a distinct economic system with its own principles or is always destined to remain a sector in an economic order. The author feels that co-operation should emerge as an independent economic system able to cover the entire economy and provide satisfactory solution to the problem of allocation of economic resources consistent with economic progress. Towards that end, inter-relationship between various production units should be governed and regulated on the basis of co-operative principles. The inter-sector co-operation cannot be secured easily and on a large

scale, unless the inherent conflict between producer organisations and consumer organisations is circumvented and mutual distrust on conflicting general ideas is overcome. Besides, there are no possibilities of immediate introduction of a co-operative system embracing the entire economy in any country either through the spread effects of co-operative development in a single sector as consumer co-operatives or from fostering inter-co-operative relationship. Co-operative enterprises will have to be integrated to an economic system. For this they have to have high standards of efficiency through careful planning, promotion of large scale organisation, integration of functions, centralisation of operations, professionalisation of management and accumulation of capital for reinforcing all these through business-like inter-co-operative relationship. In short, the success of co-operative movement in every sphere, including banking, management and organisation. These points have been ably brought out in various papers dealing with managerial and leadership problems in co-operation. It would have been more useful if the authors had given concrete suggestions to overcome these problems in relation to Indian economy.

The co-operative movement in India, inspite of its long history, is still weak and inefficient, except for a few notable exceptions. The movement has a significant role to play in Indian economy. It has been suggested that India should work for the establishment of a cooperative commonwealth. There is a feeling that the cooperative movement in India needs to be strengthened organisationally and otherwise to perform its assigned role usefully.

Dr. Rath in his paper, "The Co-operative as an Economic Organisation" discusses the problem in relation to traditional co-operative principles regarding open member-

ship, the role of non-members, the problem of capital and the distribution of surplus. He rightly points out that a co-operative can not have unrestricted membership. Non-member participation may lead to deviation from co-operative principles both in operation and in distribution of profits. But comparing a co-operative with a private enterprise to prove the above point is rather a generalisation, for the very concept of the role of capital is altogether different in the two enterprises.

The various papers on "Co-operation as an academic discipline", highlight the need for streamlining the movement at all levels, effective leadership, organisation and management, and above all, the right attitude and understanding on the part of all concerned, about the objectives for which it stands. This in turn calls for more rational study of the subject and its application in true spirits.

The book also contains useful information about various other studies and courses available at various universities and journals and books available on the subject.

Unutilised Industrial Capacity

Utilisation of Industrial Capacity in India, 1967-68. By Raghunath K. Koti. Published by the Gokhale Institute of Politics and Economics, Poona. 124 pages. Price Rs. 7.

THE problem of unutilised capacity in Indian industries has been there since the launching of the Five Year Plans. The Gokhale Institute of Politics and Economics conducted a survey to determine the extent of the problem. The results of this study, which relates to the period April, 1967 to March, 1968, have been given in this book. The Institute sent a questionnaire to various industries and 618 factories responded to it.

This study shows that there are three primary sets of causes for the enormous amount of unutilised industrial capacity. The first is related to bad agricultural seasons affecting adversely the supply of agricultural raw materials. Secondly, there are industries affected by the shortage of foreign exchange.

There is a third set of capital goods industries which are affected badly by the slackening of the investment tempo.

In conclusion, the study says, it is important to keep up the investment programme. As regards the shortage of raw materials, the position may be improved by a proper import policy, better performance of agriculture and greater industrial activity. An integrated approach is, therefore, clearly indicated.

M.D.R.

BUDDHIST SHRINES IN INDIA

Buddhist Shrines in India. Published by Publications Division, Patiala House, New Delhi. Pages 76. Price Rs 2.50.

The book seems to be meant for tourists to Buddhist shrines in India.

It will satisfy inquisitive tourists including pilgrims. It relates the background of each Buddhist shrine and links it up with the general narration of the Buddha story in a chronological order.

The rise of Buddhism around sixth century B.C. was a singular landmark in the history of India. All these shrines are directly linked with Tathagata Buddha's activities.

Apart from the shrines or monument's there are hundreds of rock inscriptions and epitaph pillars. Moreover the shrines not only depict the later stages of Lord Buddha's life following his attainment of supreme knowledge but also show the earlier stages including his birth and early life which is a mixture of history, tradition and legends.

A table of the cites of Ashoka's inscriptions as well as a map of India showing the places of Buddhist interests have been provided with thoughtful consideration for the tourists.

G.M.

THE BLUSIVE KRISHNA

Krishnavatara—II. The wrath of an Emperor by K.M. Munshi, Bharatiya Vidya Bhavan, Price Rs 2.50.

THERE are in our Puranas innumerable episodes of sages and heroes, told with a wealth of detail which tends to confuse the young of today. Mr Munshi's rendering of the story of Krishna, as in the Bhagawata, but elaborated and embellished, is imaginative and even ingenious, but his Krishna will only add to the prevalent confusion. In the years to come, it will become more and more difficult to sift the original story from the layers added by Munshi's, ancient and modern. This is not to say that the book is not of value. It makes interesting reading and may give some satisfaction to those troubled about the gaps in Vyasa's narrative. But the heroic adventures provided by the author do not have the vigour of the myths of ancient Greece, though they are reminiscent of them.

Mr Munshi's Krishna appears charming, lovable and compassionate. He is also an astute diplomat and a warrior. But he continues to elude Mr Munshi as he has others throughout the ages. Even the added charm of a romantic hero with which the author invests him fails to lift the veil. Krishna remains tantalisingly beyond our grasp.

The combats and battle scenes seem insipid and unrealistic. Our Puranas have always been weak on themes of war and adventure. Mr Munshi has not improved on Vyasa. Jarasandha and other heroes seem to fall too easily. How could a warrior, like Jarasandha, be manoeuvred so easily into the trap he fell? Again, at the sight of Krishna's men, the enemy ships at Kushasthali seem to fall into pieces like cardboard boats without any resistance at all.

Other characters like Uddhava fail to live. The Emperor Jarasandha, however, is well drawn. His power is well matched by cunning. He plays the petty kings (his vassals) against each other successfully. It is, however, not easy to understand why one described as astute, fell an easy prey to a sudden impulse and pursued the two princes to the lonely sea-shore only to be caught

there unawares. The intrigues of the rival Yadava groups of Mathura and the plight of the weak king are better portrayed.

Krishna is the embodiment of love. He loves the sky, the stars, the sea, the cows, the cowherds, Yashoda, Nanda and Devaki. He loves all beings and everything around him. He is the answer to the eternal human yearning for love and happiness. A pedagogic discussion on love such as Krishna has with Uddhava is therefore most incongruous. Krishna should never talk of love. He is love. Mr Munshi's Krishna has faint traces of Christ in him which does not go with his character.

The women characters, particularly Devaki and Rukmini, fail to come alive. Devaki seems lost to the world. She wishes to live in the past and prefers to worship Krishna in the cradle. She would not see him as a man though there he was before her. Krishna too seems too acquiesce. What would Freud have said? Rukmini is immature, wilful and turbulent. From a princess of her stamp, one expects a certain restraint, a certain poise. We are told she is intelligent yet she fails to comprehend the nature of Krishna's love for his fellow-beings—man or woman.

The style, cold, precise and ascetic, has a sobering effect on the recurring theme of romantic adventure. There are, however, many warm passages. Although, Shaihya's role in the story is not clear, there is a strange wild beauty in the description of her dream. The events leading to the retreat from Mathura are related with poignancy. When Krishna declares the Yadavas are not fleeing to Dwarka but shall go to seek a new life as heroes and that so long as they have faith, they shall live and be free, one feels he is speaking for all mankind.

—M.B.



Development Diary

● India's exports increased by 13 per cent in 1968-69. The exports stood at Rupees 1,353.48 crore as against Rs 1,198.69 crore in the previous financial year.

● The Planning and Development Division of the Fertiliser Corporation has evolved indigenous designs, know-how, and chemicals, by which foreign exchange worth over seventeen crore rupees has been saved by the Corporation.

● An autonomous Central Council for Research in Indian Medicine and Homoeopathy has been constituted by the Government of India to initiate, guide, develop and coordinate scientific research, both fundamental and applied, on Ayurveda, Siddha, Unani and Homoeopathy systems of medicine and Yoga therapy.

● ...The total new business of the Life Insurance Corporation of India in April, 1969 amounted to Rs 22.28 crores, involving 343,332 policies. This includes foreign business worth Rs 31 lakhs.

● Trial production has started in the acetanilide plant of the Hindustan Organic Chemicals.

● The percentage of literacy in Assam has gone up to 38, as against 13 in 1947. Eighty per cent of the children in the age group of six to eleven are attending school in the State.

● Three new high-yielding hybrid varieties of cotton have been developed at the Cotton Research Centre at Madihal. The hybrid varieties show an increase in yield, staple length and greater fertility.

● The National Dairy Institute at Karnal has developed a soft drink from skimmed milk. The process has been evolved for the first time in the country. The drink can be preserved for a long time.

● Foreign exchange worth Rs 10 crore was earned by exporting processed foods in 1968-69. This showed 60% rise over the previous year's exports.

● A new technique to tap water even in rocky areas has been developed by a Poona firm.

● The Rs 54 lakh Gonchi drain project in Gurgaon district has been completed.

● Exports of various items to Yugoslavia during the first four months of this year have fetched Rs 3.84 crore—an increase of 31 per cent over the earnings for the corresponding period of last year.

● India earned foreign exchange worth rupees 83 crore through iron ore exports during 1968-69 against rupees 71 crore during 1967-68.

● The National Seeds Corporation has made a beginning in the export of seeds. It has exported maize, jowar and vegetable seeds in small quantities to Ceylon, Malaysia and Ghana.

● Railways have undertaken a programme for the installation of multi-channel microwave telecommunication system to link the Railway Board with all zonal headquarters and the zonal headquarters in turn with the divisional headquarters over the entire system. The Plan will approximately cost Rs 17 crores.

● A new ten kilowatt medium wave transmitter has been put into service at Panaji in Goa. This replaces the existing one.

● A bridge over the turbulent Tizu river in Nagaland has been inaugurated. It has cost over seven lakh rupees. The highway on which the bridge is situated is an important link in land communications in the state.

● The researchers at the Forest Research Institute, Dehra Dun have discovered the know-how for manufacturing braille paper with indigenous material which will result in saving foreign exchange.

● Subscribers trunk dialling between Bombay and Surat has been introduced. With this, the telephone system in Bombay, Poona, Ahmedabad and Surat will be linked by the STD system.

● Exports of handicrafts registered an increase of 34 per cent between April and December 1968. The exports amounted to Rs 56.43 crore as against Rs 42 crore in the same period previous year.

● The expansion of the Delhi factory of Hindustan Insecticides has started trial production. The unit has an installed capacity of 1,400 tonnes per annum.

● The Mysore Iron and Steel Works, Bhadravati has earned Rupees one crore in foreign exchange during the financial year ending March 31, 1969. It exported ferrosilicon steel sections and billets to the USA, the UK, Japan, Malaysia and the Philippines.

● The Hindustan Aluminium Corporation exported a record quantity of over thirteen thousand tonnes of aluminium to eighteen countries last year.

● The number of broadcast receiving set licenses in the country today is more than 33 times the number before independence. On December 31, 1968 there were over 92 lakh licences while the total number of licences before independence was 2.75 lakhs.

● India, Bulgaria and Tunisia have successfully struck a unique deal for promoting triangular trade between them, believed to be the first such arrangement in the world. The deal is of the order of rupees 3.6 crore. India will import Urea and export tea and non-traditional goods of an equivalent value.

● A new plant for the production of liquid paraffin has been inaugurated in Bombay. This will save rupees 25 lakh in foreign exchange.

● An Indian firm has secured an order for supply of 120 covered goods wagons valued at Rs 75 lakhs from Sudan.

● The biggest flour mill having a crushing capacity of 130 tonnes per day and built at a cost of rupees 35 lakh has been inaugurated in Mysore.

● The Cotton Textiles Export Promotion Council has secured export orders for yarn and cloth worth Rs 15.50 crores from Burma, Ceylon, the U.A.R. and E.E.C. countries since January 1969.

AVERAGE LIFE EXPECTANCY

WHILE the average life expectancy in the country is around 50, in a village in Ambala it is more than 60. It is not surprising because life for the villagers of Kaula, on the fringe of a developing town, has been on the whole happy and prosperous.

In Kaula, where 90 per cent of the people depend on agriculture, the demand for tractors and other machines is fast growing. There are 8 tractors at present in this village and more farmers are willing to purchase if small tractors are available at reasonable prices.

According to a survey, conducted by the Planning Forum of S.A. Jain College of Ambala City, 932 acres out of a total area of 1019 acres are under cultivation, which is as much as 90 per cent. The consolidation of holdings has gone a long way eradicating the evils of fragmentation. Even so, the average size of the farm is only 4 acres against an all-India average of 5.34 acres.

For irrigation the cultivators depend on Persian wheels and wells. Power is on its way to the village. Only the big farmers can afford to buy improved seeds. The produce is easily and speedily marketed into the markets of the city and cantonment. Vegetable cultivation plays a major role in the economy of the village. Scientific cultivation has helped in raising the output of crops like wheat, gram, sugarcane, pulses and oilseeds by three or four times.

There are 452 cattle in the village. Most of landless labourers own one or two buffaloes. They supply milk to Ambala.

The farmers are not enthusiastic about co-operative marketing. They seem to be afraid of any work with which officials are associated.

ECONOMIC COMPOSITION

Economically the population is divided into owner cultivators, landless labourers and persons engaged

OVER 60

Surveys a Haryana Village

in other occupations. Out of 400 families, 250 are owner cultivators and 150 are landless labourers, most of them casual. The casual labour remains busy in the village during harvest time and in the nearby towns during slack season. The daily wages for an adult is Rupees Five.

The inequality in the distribution of wealth and income is not very glaring. Except four rich families, almost all the families are of moderate resources.

There are about 275 pucca and well-built houses. Many houses have furniture like chairs and tables. Transistors, radios, sewing machines, cycles and crockery have become common.

There is a definite improvement in the quality of food and clothes used by the villagers.

Of late Harijans seem to have become more prosperous and self-confident. However they are still treated as inferior people by other communities. The spirit of equality is lacking even among the younger generation.

One comes across many women still observing Pardah. But younger women are becoming more fond of costly clothes, cosmetics and other luxuries. The age of marriage has gone up. The grip of dowry system is still firm with all its evils. The bonds of caste and joint family are gradually loosening. Politics, specially the Panchayat elections have tended to disrupt the harmonious community life.

The children of almost all the families go to school. The primary school in the village has 500 students. Family planning is more popular among females than males. However, the loop has not found its way into the village.

The village Panchayat has a woman and two men of the backward classes among its members. Although the village came under the community development programme about 15 years ago, the villagers do not seem to have any notion of its functioning and the objectives. They consider the C.D. Block as the centre for supplying seeds and manures.

NEW VARIETIES OF MELONS

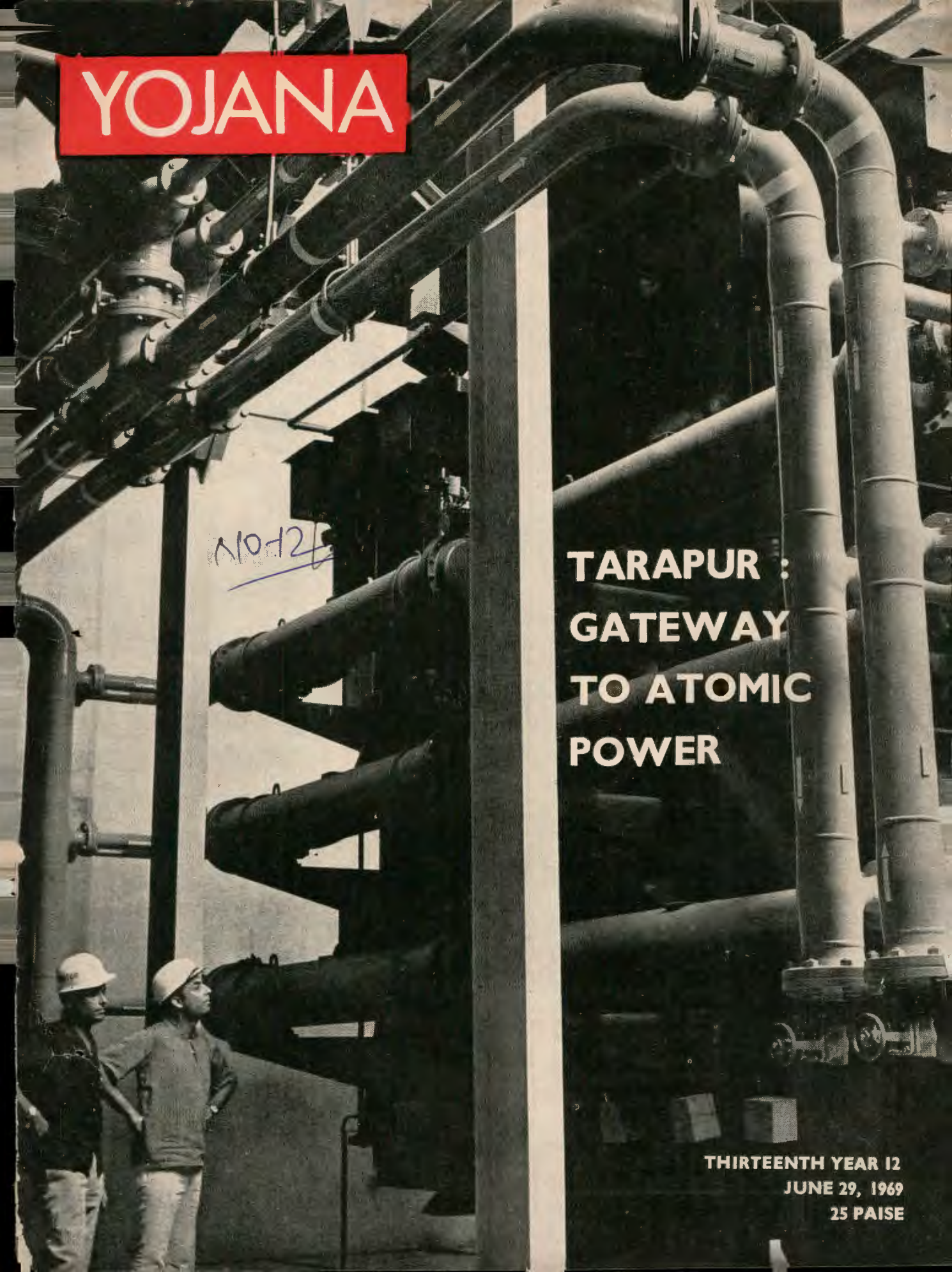
Rajasthan Farm Experiment

The Agriculture Research Farm at Durgapura in Rajasthan has evolved two new high-yielding varieties of water melon and one variety of musk melon.

The researchers were able to produce these crops of hybrid varieties under an I.C.A.R. Scheme. Farm experiments during the last three years have proved the superiority of some new hybrids. While the improved varieties of water melon yield 75 to 130 qtls. per acre, the hybrid varieties yield 370 to 445 qtls. per acre. Another advantage of the hybrids is their early maturity (Local types 110-120 days, hybrids 90-100 days, parents 110-120 days) which will enable the cultivator to send the produce earlier in the market and earn more.

This year some packets of hybrids seed were sold to cultivators and they were much impressed by their performance.

● An autonomus Central Council for Research in Indian Medicine and Homoeopathy has been constituted by the Government of India to initiate, guide, develop and coordinate scientific research, both fundamental and applied, in Ayurveda, Siddha, Unani and Homoeopathy systems of medicine and Yoga therapy.



YOJANA

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TARAPUR : GATEWAY TO ATOMIC POWER

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Organic fertilizers like compost are a useful supplement to chemical fertilizers. This has been recognised by the Planning Commission. Realising the need for compost and the expense involved in importing chemical fertilizers, Government of India aims at setting of pilot compost

plants in various States. L&T has submitted a project report for a standard size plant with an output of 150 tonnes a day. It will help to dispose of garbage usefully. This plant will be made to the design of Buhler—world renowned manufacturers who have installed 37 garbage milling plants around the world.

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BIG DEEDS HUMBLE MEN

*In this feature
Yojana seeks to present
the outstanding achievements
of some of the
many millions of obscure
men and women who
are working to build
tomorrow's India.*

AN EXEMPLARY FARMER

K. Ramakrishna Rau of Kasaravalli village in Mysore is a farmer with a University Degree. He has installed a cow-dung-gas plant on his farm. A chunk of allotment worth Rs 500 had been earmarked by the Block authorities of Thirthahalli as subsidy for a gas plant. Rau was the only farmer who could have got it. When approached by the authorities, the gentleman farmer refused to put in an application. He thought a man of his means should never go in for a government subsidy. "I should not come in the way of others" declared Rama Krishna Rau. The authorities told him that if the amount was not allotted then it will lapse. Rau told them that it was better that it lapsed than reached wrong hands.

AN IDEAL SCHOOL

Bapugaon in Maharashtra had no school. It was largely an under-developed forest area. The villages around were as much deprived of this precious privilege. Dada Shewak Bhojraj, a disciple of Gandhiji with long years of service in the cause of child welfare realised that education in this remote area could not wait official action. He set out to work for establishing a residential school for the boys and girls of the village. Now 60 boys and girls in the age group of 6-12 years are on rolls.

The school run as an Ashram, has everything within the premises

including two main bungalows having class rooms, a dinning hall, secretariat, post office, living quarters of the teaching staff and a tube well and pumpset for water. Whatever the children need is provided by the Ashram.

Besides the conventional syllabus, the children are taught in various crafts such as spinning, sewing, knitting, embroidery, gardening carpentry and domestic work. Much attention is given to the development of the child's character and his sense of civic responsibilities. Children also work voluntarily in maintaining the Ashram. Not only the Adivasis but the people in the neighbouring villages also send their young ones to this school. Both Dada Shewak and his wife work voluntarily without any payment.

HARYANA'S BEST

Naazar Singh could not dream to bag a first prize for higher farm yield when he was a police official five years ago. In 1964 this progressive farmer of Jind district in Haryana bade goodbye to police service and took to farming on his 38-acre land purchased by him in 1957. Today this 42-years-old farmer owns three tubewells, one tractor and many other modern agricultural implements.

In this year's competition in wheat production Naazar Singh has come on the top in the State by harvesting 33.56 quintals of wheat per acre. Haryana Government has announced a cash prize of Rs 3,000 for this farmer. Naazar Singh's son has secured a first position in his District by harvesting 31.36 quintals of wheat per acre.

He attributes the secret of his success to hard work and modern methods.

FROM ONE PRIZE TO ANOTHER

The story of H.V. Krishna Rao, a farmer of Hosahalli village in Mysore is one of steady progress and continued success. While in 1967-68, he won the first prize in the paddy competition of his district Shimoga, last year he won

the first prize of Rs 1000 in the State Level Paddy Crop Competition. Last year he got a record yield of 4, 736 kgs of IR-8 paddy per acre. He secured this record yield with a total investment of Rs 1,145 and earned a net profit of Rs 2,695.

Krishna Rao (42) is orthodox in his outlook but progressive as far as farming is concerned. He possesses 25 acres of wet land, 5 acres of arecanut garden and 4 acres of dry land. His devotion to farming is remarkable. He has been a life member of the Farmers' Forum of Shimoga. He owns a tractor and all kinds of improved agricultural implements.

The success of the high-yielding varieties in the nearby villages of Shimoga taluk inspired Rao to take to IR-8 paddy since 1966.

During Kharif last year, he harvested 40 quintals per acre of Taichung Native-1 and 25 quintals per acre of S. 701 paddy. It was a record yield of 44 quintals of IR-8 that got him the district prize.

The main reason for Krishna Rao's success was the adoption of scientific methods and the correct application of adequate quantities of inputs.

WHAT STUDENTS NEED

We, students of economics, find 'Yojana' very useful. Shall we make a few suggestions to make the journal more useful to economics students?

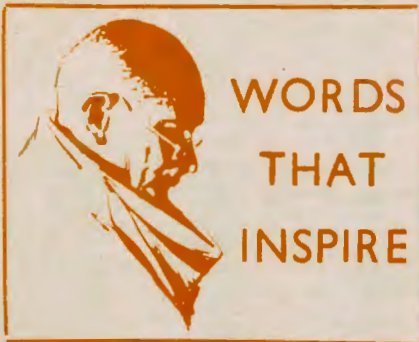
Kindly publish a few articles on
(1) Price Trends in India during Planning and Reserve Bank of India's measures to control price.
(2) Reserve Bank of India and Growth with Stability
(3) Economics of Defence in India.

We can well foresee that such articles may render your esteemed fortnightly uninteresting to laymen for whom you care so much. But such articles once in a way may not affect the lay readership but will benefit your technical readers.

Patna

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ON SALE NOW



WORDS THAT INSPIRE

Indian economic independence means to me the economic uplift of every individual, male and female, by his or her own conscious effort. Under that system all men and women will have enough clothing—not the mere loin cloth, but what we understand by the term necessary articles of clothing—and enough food, including milk and butter which are today denied to millions...

...Real socialism has been handed down to us by our ancestors who taught: "All land belongs to Gopal, where then is the boundary line? Man is the maker of that line and he can, therefore, unmake it." Gopal literally means the State, that is the people. That the land today does not belong to the people is too true. But the fault is not in the teaching. It is in us who have not lived up to it...

Let there be no mistake about my conception of Swaraj. It is complete independence of alien control and complete economic independence. So at one end you have political independence, at the other the economic...

I would make the spinning wheel the foundation on which to build a sound village life; I would make the wheel the centre round which all other activities will revolve.

The idea behind the village industries scheme is that we should look to the villages for the supply of our daily needs and that, when we find that some needs are not so supplied,

we should see whether with a little trouble and organisation they cannot be profitably supplied by the villagers.

...India is made of villages, but our intelligentsia has neglected them... Village life must not become a copy or appendage of city life. The cities have to adopt the pattern of village life and subsist for the villages. Today, the cities dominate and drain the villages so that they are crumbling to ruin. My Khadi mentality tells me that cities must subserve villages...

We should be ashamed of resting or having a square meal so long as there is one able-bodied man or woman without work or food.

We won't find the remedy for human ills by losing patience and by rejecting everything that is old because it is old. Our ancestors also dreamed perhaps vaguely, the same dreams that fire us with zeal.

I have always been loath to hide or connive at the weak points of the community or to press for its rights without having purged it of its blemishes.

The most practical, the most dignified way of going on in the world is to take people at their word, when you have no positive reason to the contrary.

In order to overcome evil, one must stand wholly outside it, that is, on the firm solid ground of unadulterated good.

If instead of insisting on rights, everyone does his duty, there will immediately be the rule of order established among mankind...

Let us forget all thoughts of 'I am a Hindu, you a Muslim' or 'I am a Gujarati, you a Madras'. Let us sink 'I' and 'mine' in a common Indian nationality. We shall be free only when a large number of our people are determined to swim or sink together.

—GANDHIJI

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Cover photograph shows the step-up unit of the main transformer of Tarapur Atomic Power Station. See also page 4

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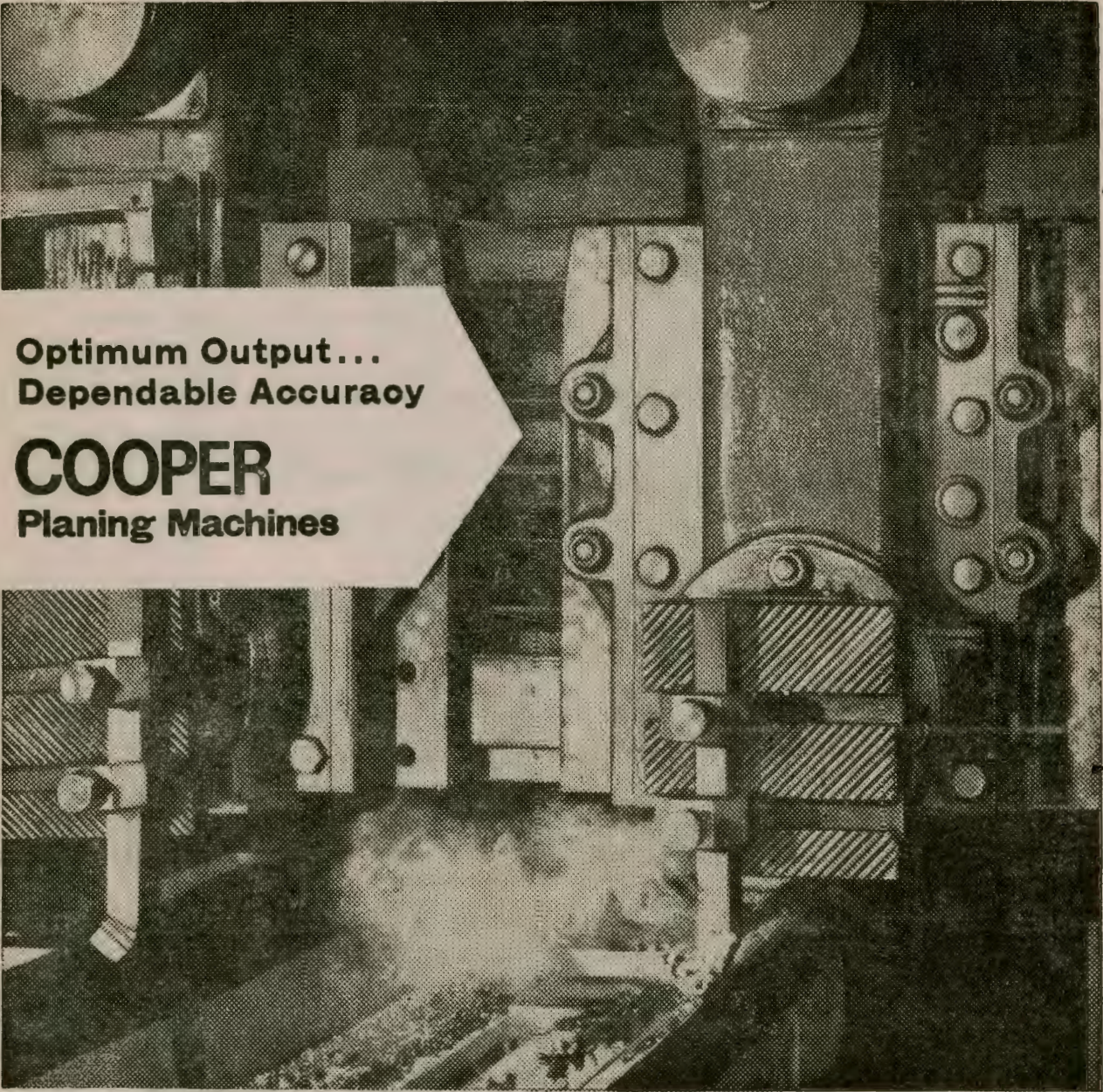
LEST WE FORGET

To a man with an empty stomach food is God.

—Gandhi

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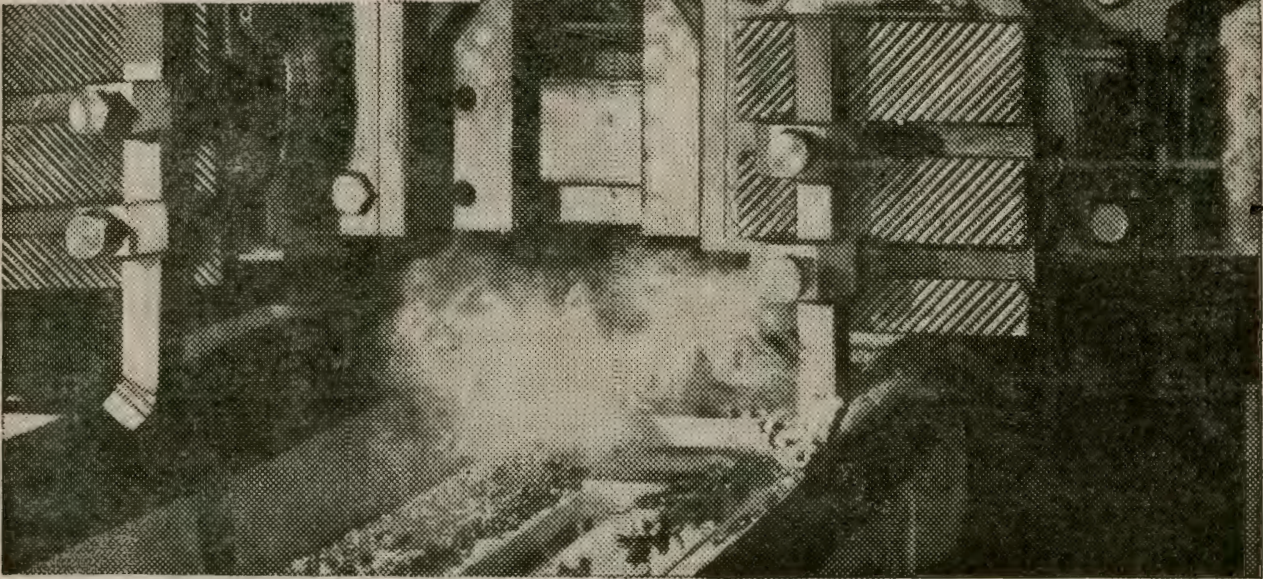
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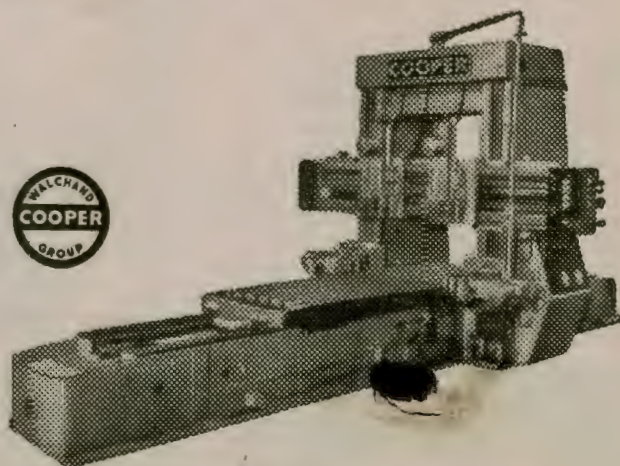
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THE PROBLEM OF POWER

THE extent to which Indian democracy is sought to be reduced to a mere administrative exercise is reflected in the kind of elite argument that goes on concerning Centre-State relations. The ARC could not obviously escape the preventing urban logic which has already converted every national problem including planning into one of efficiency and constitutionality.

Democracy cannot be contained in efficiency and often transcends constitutionality. Thus what may not be entirely efficient and even constitutional may yet be tenable from the democratic point of view.

It will be particularly appropriate to remember this in the year of the centenary of Gandhi's birth. Representative government is only a convenient form of democratic expression and can never be an instrument or excuse for the denial of democracy itself. Ultimately, the measure of our democratic faith is the ability to respond to people's urges and aspirations.

GANDHI represented the people's idea as against the elite idea. His outstanding contribution to Indian nationalism and unity was that he transformed it from an imperial administrative concept to one of popular aspiration.

Tragically, the various arguments of stability, efficiency, national strength and constitutionality that now attend the controversy over Centre-State relations would seem to indicate an effort to go back to the administrative concept of Indian unity and to rob it of its essential ethos of popular favour and participation.

The problem of Centre-State relations today is not one of framework or formulae. These can wait. What has to be recognised is that formulae which are not based on a basic philosophy of Indian nationalism may be clever but will not work. That is, just as the Indian constitution could not have been left to legal expertise, Indian unity and integration cannot be an administrative exercise. This is a problem of politics in its broadest meaning, not a problem of administrative reform.

The question is: Do we have a philosophy of Indian nationalism? If we had, we would not be so pathetically bogged down in the mire of unworthy argument about the police and security functions and responsibilities of the Central administration.

IF Indian unity cannot be reduced to a question of law and order, it cannot be equally looked upon as a convenient method of economic development. Neither prosperity nor strength makes a nation. Indian nationalism must derive its sanctity from a deeper involvement of the entire mass of the Indian people in all the expressions of that nationalism.

Gandhi alone can provide a valid basis of Indian unity, for before Gandhi, neither the pervasive religion nor ubiquitous authority provided the avalanche of national fervour which, under Gandhi, swept all administrative, regional, religious and linguistic barriers.

If he is regarded as the architect of Indian freedom and unity, can we afford to ignore his ideas on how that freedom can flourish in democracy and how that unity can be strengthened by popular involvement?

DEMOCRACY is not an exercise by twenty men in authority, he said. Centralisation of power is the expression of megalomania of lesser minds. The sanction of Indian democracy is not the constitution but the people. And the effort must be constantly to bring the administration closer to the people.

Gandhi's village scheme was not a complete constitutional structure; it was an idea and the tragedy of Indian thinking today is that it mistakes concepts for ideas.

Essentially the problem of Centre-State relations is how far authority will be surrendered to the people. This process can never end. Ultimately, Gandhi must prevail—no power, therefore, no State.

This, in any event, is a question of political leadership, not of administrative legerdemain.

TARAPUR:

India's

Gateway

To Atomic

Power

TARAPUR! Five years ago, it was not even a dot on the map of India: today it is a landmark. It is from this little village in Maharashtra that India has entered the portals of atomic power.

Like many other villages in the country. Tarapur, 100 kms from Bombay, was a vast stretch of emptiness dotted here and there with a few battered houses, typical of India's backwardness. Today, as we reach the place, we see the massive 45-metre-tall concrete building housing the atomic reactors standing in isolated splendour, with a

Qutb-like tower nearby and numerous pylons of the switchyard, visible symbols of India's attempt to telescope centuries of technological progress into a few years. This 'leapfrogging', to borrow a favourite expression of Dr Bhabha, from the bullock cart age to the atomic era is tellingly brought home to us when we go from Boisar, an ordinary, untidy railway station, nearest to Tarapur, over 15 kms to the atomic power station.

"When we first came here, there were only cart tracks," the Engineer-in-Chief of the Tarapur

PICTURE: USIS

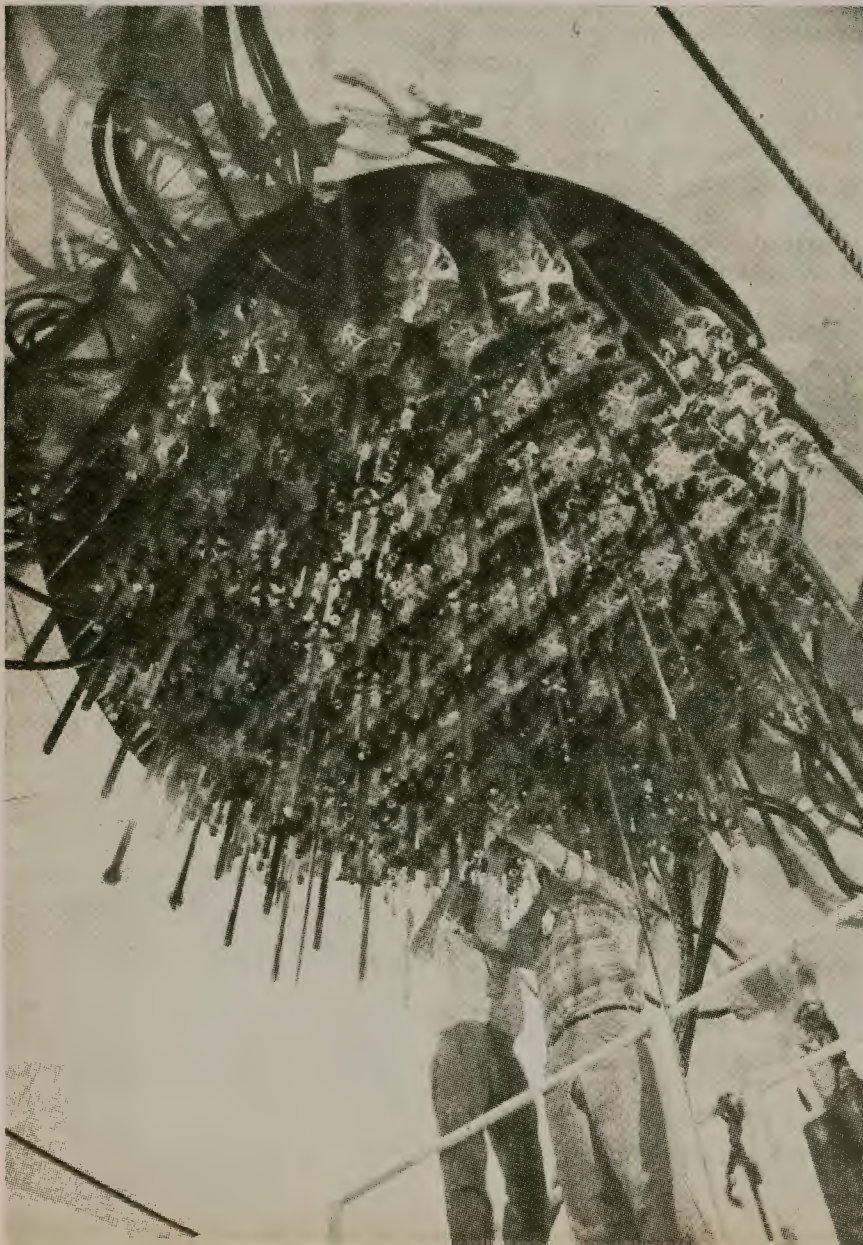
Success that will trigger off the country's future Nuclear Power Development

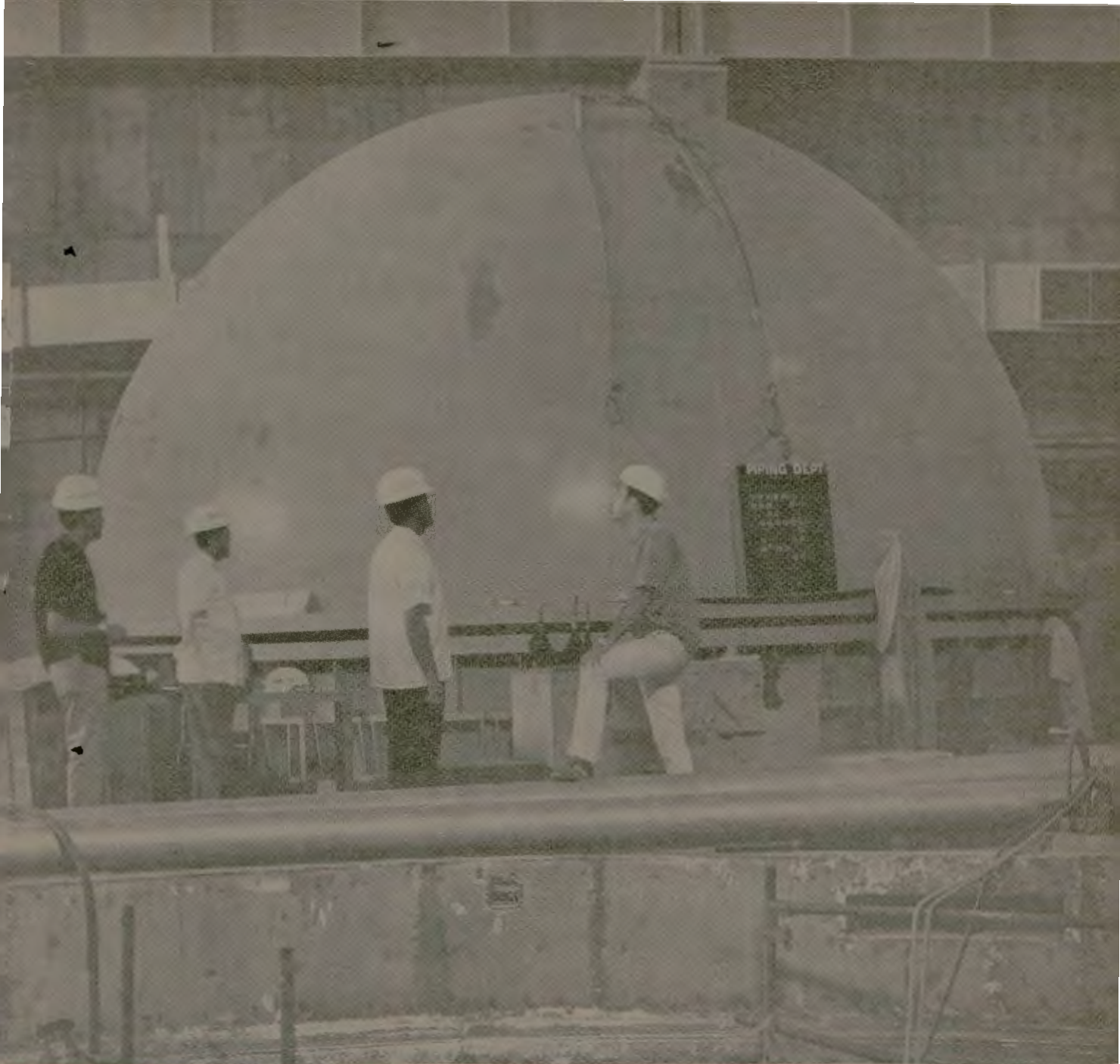
station told us. "We came by bullock-cart and we had even to walk part of the way. The small town of Boisar even now does not bear any signs of the supra-technological establishment nearby, except when an occasional imposing limousine or two carrying foreigners speed by. Boisar to Tarapur is, as it were, a drive from primitiveness to ultra-modernity.

Sitting for a chat with us in the tastefully-laid out conference hall of the power station's imposing administrative block, the Engineer exuded confidence and cheer. There seemed to be a climate of comradeship and joy of participation all round. A deep sense of fulfilment was evident. He told us, "I don't think any power station of 400 MW has been constructed in India in less time." When asked about the delay that has been caused in the

YOJANA SPOT REPORT

**BY ROSSCOTE
KRISHNA PILLAI**





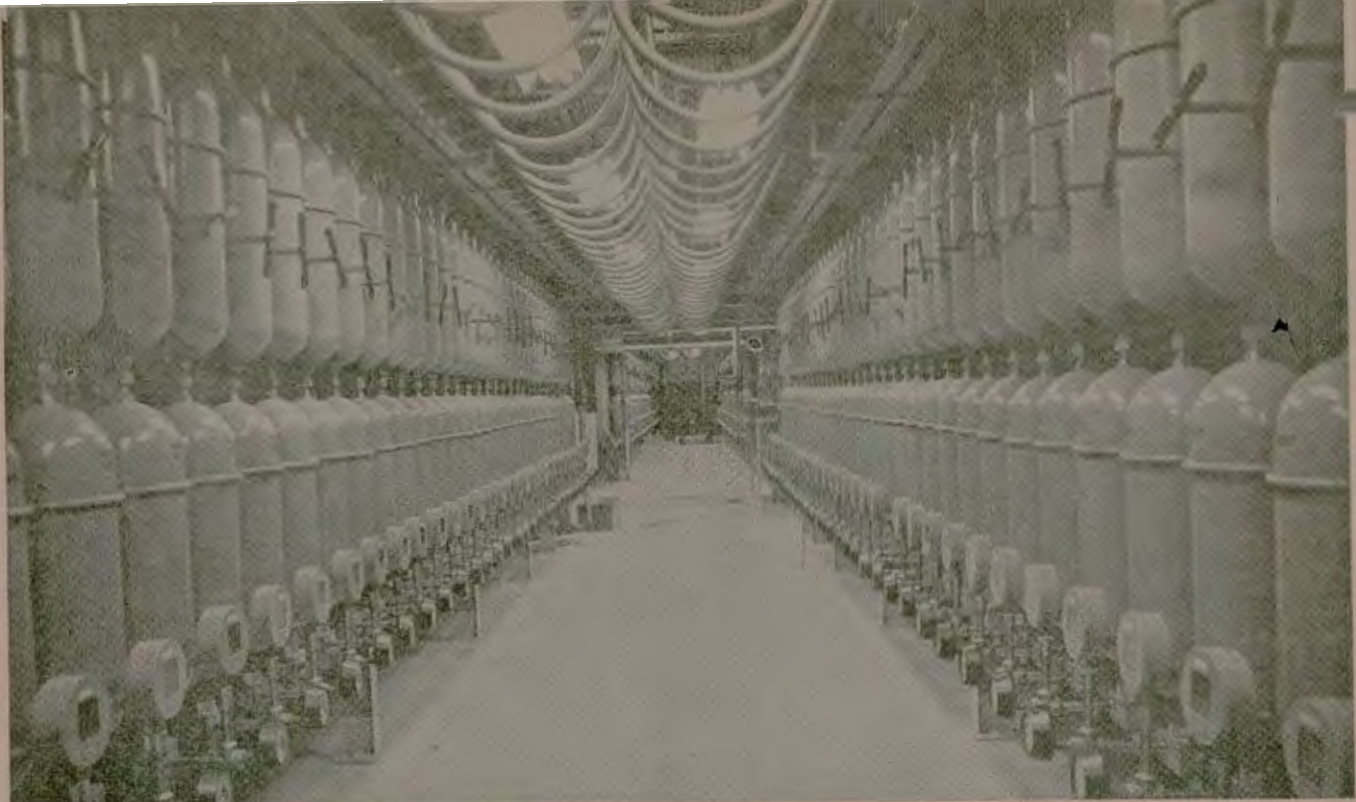
Top of the containment vessel of the reactor.

Left page : The beehive-like structure of tubes shows sensor rods of the reactor.

PICTURE : T.S.N.

COMMERCIAL OPERATION TO START NEXT MONTH

This is the first time that Maharashtra and Gujarat have been linked through a grid into which flows 380 MW of power from the first atomic power station.



PICTURE : USIS

A section of the scram accumulators which are used for inserting the control rods fast to shut down the reactor in an emergency. Below : A view of the Atomic Power Station. The tower at left carries noxious gases up into the atmosphere

PICTURE : T.S.N.

commissioning of the plant because of certain defects noticed in the machinery supplied by the foreign contractors, he said that in an atomic power plant, it was absolutely essential to make sure that everything was perfect. Time was not of the essence.

In the first phase of testing, before the fuel was loaded, a number of pre-operational tests had to be carried out. In the course of these tests, minute cracks were detected on the surface of certain stainless steel equipment. They were very minute, of hair-width. But the project authorities insisted on a thorough investigation." In a similar plant in another country, a similar phenomenon was noticed; nobody has quite understood why this happened.

The prime contractors of the power plant, the American firm of International General Electric, then checked every bit of stainless steel equipment at their cost. The entire 1,700 tubes of stainless steel of each of the four secondary steam generators were subsequently replaced. Once the contractors were



convinced that the equipment was defective, they went to the extent of transporting the entire equipment by air.

The process of intricate and vigorous testing and replacement of highly sophisticated equipment to ensure foolproof functioning had put off the commissioning of the plant by about eight months from the initial target of four years and four months from contract date.

A large thermal power project generally takes six to seven years. The construction of Tarapur atomic power project started at site in October 1964. The target initially set for its commissioning was within 48 months from that date. In a highly novel and infant field of atomic power station construction and in a project handling fissile materials, caution had perforce to be exercised.

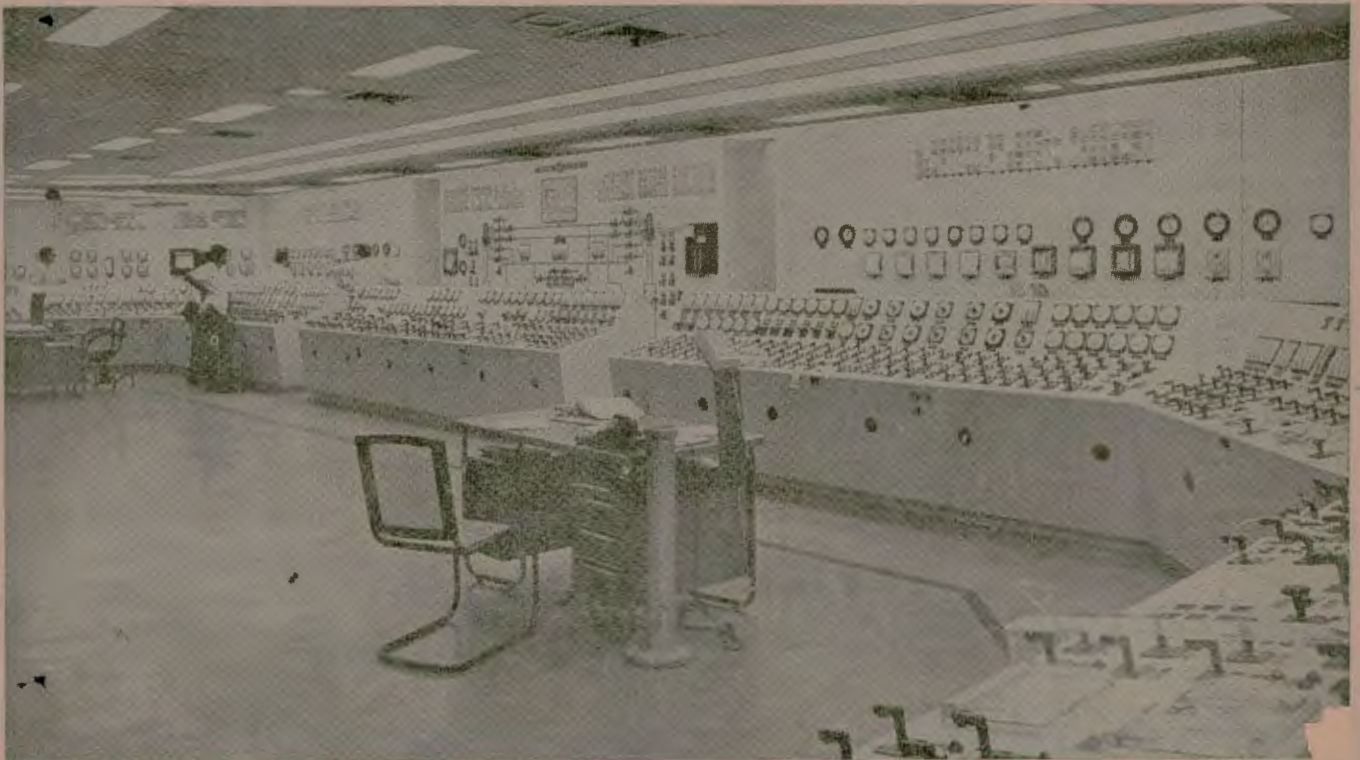
And so the plant is now going through another period of power testing. The fuel was loaded in the reactors in February. Electricity generated was fed into the Maharashtra-Gujarat grid on a trial

basis. A number of tests were conducted at different levels of power generation from zero upwards. While a reactor was producing 150 MW of power, it was suddenly stopped and all the systems were checked. This had to be done because it had to be ensured that all the auxiliaries of the plant behaved in a certain pattern and functioned perfectly not only when the power was generated continuously but even when there were increases or reductions in generation. The plant's performance was watched even after deliberate infliction of faults and adjustments were made in the machines after reviewing the results. All these operations were carried out at the expense of the contractors and the plant is now almost ready for commercial power generation. Even during trials, 22 million units of power had been produced and fed into the Maharashtra-Gujarat grid.

Tarapur's transformation in the last few months has been magical. About twenty months ago, the place was a sea of workers and

construction machinery. Thousands of labourers : some carrying head loads, some chipping and chiselling, some operating machines. Giant cranes, heavy steel girders, piles of concrete and rubble. Construction was going on apace. The massive concrete reactor building was ready but inside it was all din and bustle. The first reactor vessel weighing 270 tonnes had just been placed in position and a deep cavity was ready to receive the second. All around the building were hundreds of workers' hutments. The administrative office was in a temporary tenement. Every nerve and every fibre seemed to be keyed up to beat the deadline set for the project's commissioning.

Now Tarapur wears a placid and serene look. The calm exterior of the giant station does not reveal the endless activity that goes on in its inside. The very setting of the station near the seashore lends it a romantic touch. And an exquisite flower garden lined with palm trees in front of the spacious administrative block and the reactor



A view of the electronic instrument panels of the control room

PICTURE : USIS

building makes certain that the drudgery of work at the power station is reduced by the touch of colour and gaiety.

Inside the five-storeyed reactor building too, calm and tranquility prevailed. There was intense activity everywhere, but it was orderly, quiet, disciplined. Young technicians moved with dignity, handled sophisticated instruments with quiet confidence. At the power station, from the engineer-in-chief down to the newest recruit, all were young men. They will form the invaluable cadre of experienced hands who will man the future power stations in India.

FIRST OF ITS KIND

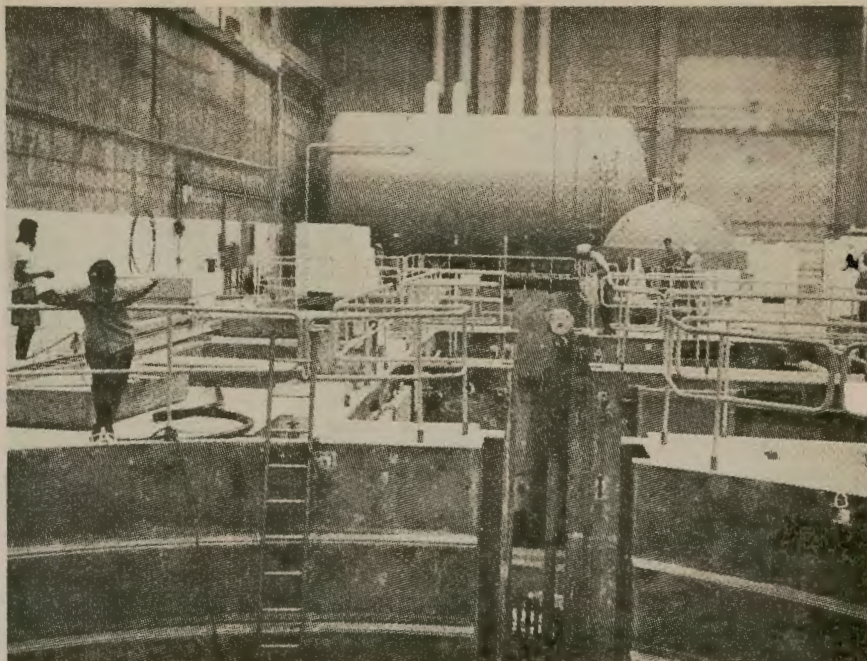
Standing on the top floor, with cloth covers over our shoes to avoid radio active contamination, we saw only the top covering of the reactor vessels. Nothing of the intense nuclear reactions that were going on in the two reactors of 200 MWeach was visible.

Basically the reactor has the same function as the boiler of a conventional coal-or-oil-fired power plant. Its purpose is to generate steam which will drive a turbine to produce electricity.

Besides the reactor, the essential components of a power station are the turbines which convert heat energy into electrical energy and the switchyard, the grid pylons, transformers and transmission cables for distributing the electrical energy. Except the reactor, the other two components are the same for nuclear and fossil fuels. There are various types of reactors in use in power plants in different parts of the world today. The reactors in operation in Tarapur belong to the "boiling water" type which uses ordinary water to control the nuclear reaction and also to carry off the excess heat produced in the reactor.

REACTOR CORE

The core of the reactor consists of the fuel which is enriched uranium in the case of Tarapur. Each reactor at Tarapur consists of 40 tonnes of enriched uranium which has been imported from the United States. Fuel rods numbering 36 are bundled together and 284 such bundles form the reactor core. For the first 2½ years,



A view of the operating area of the reactor building

PICTURE: BARC

the reactors will make do with the imported fuel that has already been loaded. Thereafter 20 per cent of it will have to be replaced by new fuel and the replacement has to be made every 9 months or every year. The fuel rods are loaded or unloaded by machines hanging from a travelling crane which is equipped with a three-pronged grab that can insert or remove the rods when required.

The reactor core is placed in a flask-shaped stainless steel vessel 18.6 metres (66 feet) in diameter and 30 metres (100 feet) high. The vessel called the Dry Well is protected from excessive heat generation by a thermal shield. The entire reactor is encased in concrete, called the biological shield.

In the reactor, when the nuclear reaction is set off among the fuel rods, intense heat is produced. This heat boils water in the reactor core and produces steam which rotates the shaft of a turbine at the speed of 1,500 revolutions per minute. A generator connected to the turbine converts the mechanical energy to electricity. This electricity is passed through giant transformers into a grid. The excess heat in the reactors is removed by pumping in water from the Arabian sea through a highly efficient channel system. Sea water is let in at the rate of 168 million gallons a day.

The radioactive wastes are led

through pipes into an underground tank nearby and the gases are led up into the high skies through a tower. The spent fuel is taken out and kept in storage racks.

CONTROL ROOM

The entire reactions in the two reactors at Tarapur are under constant check and adjustment by a system of remote control. The white panels in the posh, air-conditioned, dust-proof control-room are fitted with innumerable dials showing different readings of the reactions in the two reactors. Highly qualified young engineers sit before flickering red, green and yellow lights, with their nimble fingers on push buttons ready to act any moment. Everyone in the room is always on guard. Everything is neat and tidy. We were told that the sophisticated control panels worth Rs 15 lakh were fabricated at the Electronics Wing of the Bhabha Atomic Research Centre.

Tarapur, has naturally attracted the attention of neighbouring countries who have deputed their engineers to this place for training in this nascent technology. Even Japan, the third industrial power in the world, had sent three of her engineers to undergo three months training at Tarapur. Three Burmese have been trained for six months and a Korean is now there on a one-year fellowship from

the International Atomic Energy Agency. A Phillippine trainee is also there. All these engineers are trained on actual jobs at the power station.

The atomic power station has a very well-designed colony of houses for its staff. But the families living there suffer from certain limitations inherent in such projects situated in out-of-the-way places. For education, for medical treatment, and for entertainment like films, they have to go to Bombay which is 100 kms away.

GREEN SIGNAL

As we see it, Tarapur gives the green signal for a really crash programme of nuclear power generation in India. It is true that there has been some rethinking in certain advanced countries about the priority given to atomic power over conventional power. But India

TARAPUR GIVES GREEN

SIGNAL FOR A

CRASH PROGRAMME OF

NUCLEAR POWER GENERATION

IN THE COUNTRY

is short of conventional power resources like coal, oil and water. Viewed in time perspective on a per capita basis, nuclear energy has a definite role in meeting the demands for power for accelerated programmes of mechanised intensive agriculture and industry. More over, the problems involved in building thermal power stations and hydro-electric stations would seem to indicate resort to nuclear power. About 80 per cent of the present supply of coal comes from Bihar and West Bengal and the remaining supplies from Madhya Pradesh, Orissa and Hyderabad. From these mines, coal will have to be hauled over long distances extending from 600-2500 kms to North, South and Western India. This means additional transport facilities like locomotives, freight cars and double tracking, which are not likely to be provided in keeping with the needs. More-

over, coal and oil are not only excellent fuels, they are valuable chemicals; their supplies not being inexhaustible, they have to be conserved for meeting the increasing needs of industry.

As regards hydro-electric power, water supplies have proved to be unreliable in many parts of the country because of irregular monsoons. Therefore, there is a limit to the possibility of expanding hydro-electric power generation.

Agriculture Makes Big Strides in Poland

POLISH agricultural production has increased 1.6 times as against the pre-war level. The rate of increase in agricultural production last year was four per cent. The per hectare yield was about 21 quintals.

The stock of cattle now numbers some 10.9 million heads in addition to 13.9 million pigs and 3.3 million heads of sheep.

Agricultural Circles, which are voluntary organizations of farmers, affiliate 1.3 million people. By the end of 1968 there were 34,800 such circles. They had at their disposal 73,100 tractors. (The number of tractors in Polish agriculture increased by 19 thousand last year and reached 1,70,000).

State farms cover 13 per cent of the arable land and supply 18 per cent of the total agricultural produce. There are 5,800 state farms in Poland.

Every year, the industry produces, apart from tractors, thousands of various agricultural machines: combines, threshing machines, harvesters, sheaf-binders and diggers. Thirty-six countries buy tractors produced by the "URSUS" mechanical plant near Warsaw. There is a growing supply of fertilizers. Last year, 1.8 million tons of mineral fertilizers were used which was 15.6 per cent more than in the previous year.

With the increased emphasis on rural electrification and on the use of power for the farms, the objective to provide electricity at a cost to suit the Indian villager's pocket needs no emphasis. The people's rising standards of living and a higher tempo of industrialisation will considerably whet the call for power. Coal, oil and water resources alone cannot meet the call. To the snowballing demand for energy, more Tarapurs will be a right answer.

State outlays for agricultural investment increased from 24.7 thousand million *zlotys* in 1964 to 36 thousand million in 1968. This money is spent on housing development, mechanization, electrification and land improvement.

Short-term credits granted to agriculture (state farms excluded) amounted to 16 per cent more than in 1967. Medium and long-term credits increased to 6.8 thousand million *zlotys*.

Poland has 0.63 hectares of agricultural land per capita. Despite rather unfavourable soil and climatic conditions, Poland is the second largest producer of rye and potatoes, and in wheat production it ranks 17th in the world and holds fourth place in sugar beet production. In milk production Poland ranks 5th, in the production of meat the 8th and that of eggs, the 11th.

In 1967, there was one tractor per 146 hectares of arable land which puts Poland as low as on the 19th position in the world. The situation in this field, however, is steadily improving.

A giant animal husbandry plant, the only one of its kind in Poland and one of the most up-to-date in Europe is under construction at Kolbacz. The plant will cover 3,500 hectares of farm land. On completion, the plant will produce slaughter pigs, and it will breed about 1,120 cows, some 1,900 sows, and 66 boars.

The construction programme provides for building of a fodder plant with a capacity of 30 thousand tonnes of fodder.



SIEMENS

**After one hundred years
in India**

**shouldn't an electrical
company be able
to provide all the
electrical equipment
its clients need?**

**And be able to plan, design,
erect and commission
anything electrical?**

Ask us



JAPAN

Electronics Industry in Japan

One of the major reasons for this phenomenal growth is the development of new techniques like the invention of transistors. Another reason is the labour-intensive character of the industry which suits the Japanese conditions.

The industry can be roughly divided into two categories—electronic machinery and equipment, and electronic component and materials.

JAPAN's electronics industry is a strategic key to the country's economy. In the past decade, Japan's Gross National Product has registered an average growth rate of 14.9 per cent a year, the highest in the world. But, its electronics industry has grown at a far higher rate of 23.9 per cent. Consequently, Japan ranks second only to the United States in the production of electronic machines and equipment. In 1967, Japan's output in this sector amounted to about 3,972 million dollars of which 1,056 million dollars worth of products were exported. This formed 10 per cent of the country's entire export earnings.

Integrated Circuit (IC) package being tested with an automatic IC package tester.



The former may be further classified into those for the general public and those for industrial use. In the case of Japan, electronic machinery and equipment for the general public carry the biggest weight and form one of the industrial specialties Japan is proud of. Japan has developed a successive number of "star" items in this sphere, such as transistor radios, transistor television receivers, tape recorders, colour TV sets, and more.

ACCENT ON COMPUTERS

The total value of the second category products has been estimated at 1,031 million dollars. Japan's computer production stood at 49.9 per cent of the total world output.

The advent of the so-called "information culture" age has brought on a mounting demand for improved computer performance. In Japan, the development of a super-efficient computer is now under way as a national project. The purpose is to develop a computer that can rank among the best in the world in the 1970's. Under the present plan, the projected computer will

Asian Economic Co-operation

Fumio Okesha

JAPAN imported over 12 per cent of the total exports of the ECAB countries in 1967-68. The figure for India was 9.3 per cent in 1966-67. Japan offers the second biggest market for exports from these countries, next only to the USA. She is the fourth biggest buyer of India's commodities following the USA, the UK and the USSR. Accordingly, Japan's trade policy, especially the import policy, economic aid, and fluctuations of her economy have come to exert an influence on Asian countries, including India. Japan must therefore care for her stable and sustained economic growth not only for her own sake but also for helping the other Asian countries.

less of these commodities. It should raise the expectations of Asian countries, especially India, to boost the export of their manufactured or semi-manufactured products. Japan's share in the U.S. market in respect of goods like cotton textiles, clothes, plywood, toys and artificial flowers has been considerably decreasing during the last ten years, while at the same time Japan's import of the products of labour-intensive industries have been remarkably increasing.

INDUSTRIAL POLICY

Mutual relations between Japan and Asian countries are expected to become closer and consolidated in view of the fact that Japan will provide an ever increasing market for primary products and light industries from Asian countries who in turn would need more of heavy and chemical industrial goods from Japan. Japan finds herself in a position to increase her imports from Asian countries to improve her trade relations with them and to help their economic development. Except in case of four countries—Philippines, Malaysia, India and Indonesia, Japan has had a favourable trade balance with her other trade partners in Asia. This gap has to be made up. In order to improve her relations with her Asian neighbours, Japan has, firstly, to increase her imports from them. But some difficulties must be anticipated. Supply from Asian countries is poor in quality, quantity, and price. Japan's trade dilemma is partly a result of her inconsistent attitude towards Asia, but it is, on the other hand, also connected with the economic planning in these countries, India being a typical case. India's planning has laid stress on building up import-substitute industries with the help of foreign aid. It gave me an impression that India has turned her back on the export of traditional and textile goods. After a bitter experience

CUSTOMS BARRIER

Japan, depending upon import of raw materials, fuel and foodstuffs, cannot in principle object to the abolition of customs barriers, increases of imports and stabilisation of import price of primary products. The offer of preferential tariff, if it can efficiently quicken the speed of industrialisation, will bring the advantages of vertical division of labour and open up the possibility of promoting the horizontal division of labour.

Due to the offer of preferential duties on primary, semi-manufactured and manufactured products, Japan's agriculture, especially rice, wheat and oil seeds production, must be modernised and small and medium industries may encounter competition in domestic and external markets. Some Japanese products may be less preferred than those of the other Asian countries. For all that, Japan has to accept the expansion of the trade of her Asian neighbours.

(Turn to Page 14)

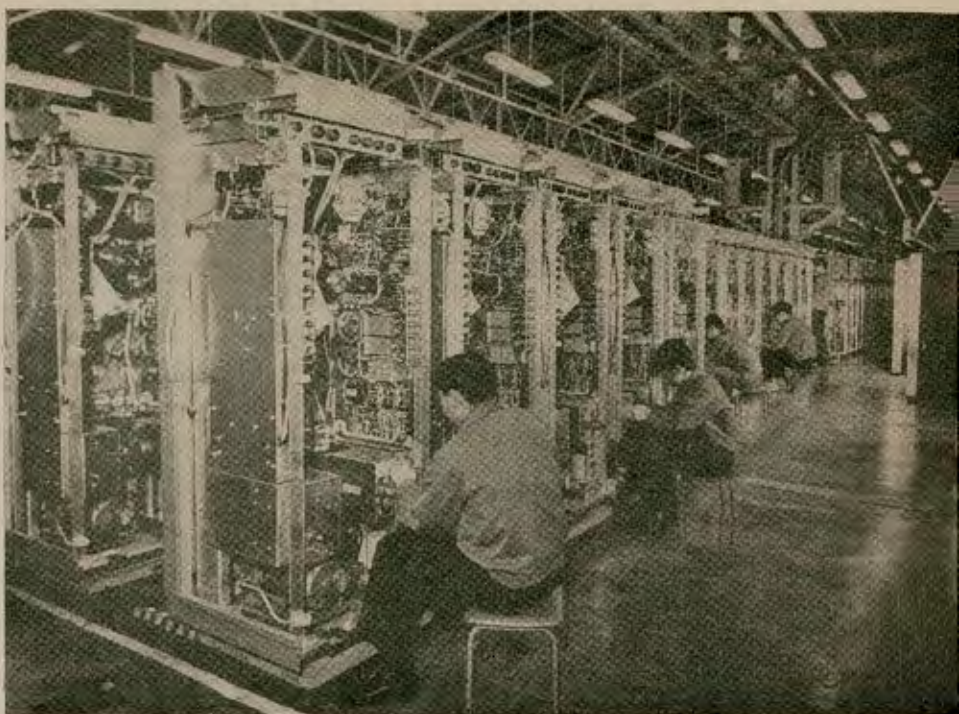
have a fantastic memory capacity of 5,24,000 words and a cycle time of 200 nanoseconds. The computer will be put into practical operation in 1972.

Incidentally, the IC (integrated circuit) has rapidly come into the limelight as a key to enhancing the performance of electronic instruments, including computers, as well as reducing their size drastically. Called the third electronic component after the vacuum tube and the transistor, the IC is a small one-millimeter-square silicon crystal, on which functions of various elements, such as the transistor, diode, resistor and condenser, are concentrated to form an electronic circuit. In addition to the standard semiconductor IC using a silicon crystal, there are hybrid ICs and thin film ICs, which differ in structure. Japan has successfully developed a new hybrid IC with the world's largest output of 50 watts.

Japan's IC output has shot up steeply in recent years. Production of semi-conductor ICs, soared from 2,90,000 units (worth 0.83 million dollars) in 1966 to three million units (worth 6.7 million dollars) in 1967 and 20 million units (33.3 million dollars) in 1968. This year, it is expected to rise further to 87 million units. Indications are that the unit price of ICs will drop from the present two dollars to one dollar in about two year's time.

Meanwhile, LSIs (large-scale integrators) are soon to be mass-produced. Compared with ICs, LSI concentrates more functions in a smaller size. It is said that an LSI is more than 10 times as efficient as an IC of the same size. Recently, the Hayakawa Electric Co. developed a small electronic desk computer weighing only 1.4 kilograms. The LSI used in the computer has functions equivalent to as many as 1,875 units of transistors, diodes and condensers, concentrated in a 3-millimeter-square base. The LSI is now being enthusiastically regarded as the "fourth generation electronic component" to replace the IC. Even in the most advanced Western countries, however, the manufacturing techniques for the LSI have yet to be fully developed.

With the advent of the IC-LSI age, research efforts are now being



Magnetic tapes being produced at a computer assembly plant.

focussed on reducing the size of electric circuits, speeding up their operations and increasing reliability. Among the new semiconductors being developed are the Magnet Diode (called SMD), the Pressure Sensitive Diode (MPS Diode), and the LTP (Low Temperature Passivation) transistor.

The SMD is several hundred to several thousand times as sensitive as conventional magnetic semiconductor elements. It can be mass-produced at low cost. This magnetic semiconductor, because of its alloy connection, is designed to function without variation in a temperature range of -40 degrees to $+80$ degrees C. It has a semi-permanent life. The SMD can have wide application but its greatest value is to be seen in direct current motors and non-contact switches.

The MPS Diode represents success in the application of pressure, which has so far received little attention in semiconductor theory. When "deep impurities," such as gold and steel, are mixed with a semiconductor, electric resistance varies to a highly sensitive degree according to changes in pressure. The chief characteristic of the MPS is that this sensitivity is skilfully utilized. The MPS

Diode is sensitive not only to finger tip pressure, but also to pressure from supersonic waves. Therefore, it is considered applicable to pressure sensitive switches, non-contact relays and microphones.

The LTP transistor is made by a new manufacturing method, called LTP. Compared with some others, the LTP transistor produces less noise and can resist 500 volts of electric pressure (in the case of conventional silicon transistors, the figure is less than 200 volts). It is characterised by high amplification ratios of electric current and pressure.

In addition, the "wire memory," regarded as a new component part of a computer's memory system, is a masterpiece of Japan's electronic technology. Recently, however, a "Transistor-type IC Memory," more advanced than the "wire memory," has been developed by a Tokyo firm. It has a super-speed of 60 nanoseconds—a speed far exceeding the 80 nanoseconds recently announced by a leading Western manufacturer.

JAPAN IN 1985

JAPAN has embarked upon a new national development program spanning the 20-year period from 1965 to 1985. What began as an effort to update Japan's first national development program, drafted for the years 1962-70 to flesh out the Government's "income-doubling program," now emerges as a breath-taking project of vast proportions.

The program, critical of the country's uneven development with its areas of over-concentration and of over-dispersion of population and industries, calls for radical reform in the use of Japan's land and sea areas.

By 1985, Japan is expected to have a population of 120 to 150 million people consisting of 35,500,000 households—1.5 times more than in 1965 and enjoying 1.4 times more leisure. The Gross National Product will have increased four to five times the 1965 level, somewhere between \$360,000 million to \$420,000 million, with the per capita GNP around \$3,000.

On the other hand, the increasing desire for higher education will hold the increase in Japan's labour force to eight million, bringing the total labour force to 56 million. The number of those engaged in the primary industries—farming, forestry and fishing—will decrease to less than five million while white collar workers will increase to over 18 million.

During the 20 years before 1985, cumulative fixed assets will increase by \$1.4 to \$1.5 trillion, seven to nine times that accumulated during the previous ten year period from 1955 to 1965. During the same period, cumulative private investment in productive facilities will reach \$600,000 million to \$710,000 million, private investment in housing \$300,000 million to \$330,000 million and governmental fixed investments \$360,000 million to \$470,000 million.

The seven key urban centres of Tokyo, Osaka, Nagoya, Fukuoka, Sendai, Sapporo and Hiroshima will become the hubs of highly developed networks of regional

transportation and communications. These will, in turn, be linked with each other by high-speed data communications circuits, jet aircraft, highspeed railways, super-highways and containerised freighters.

Internationally, live color television programmes from foreign countries will become daily fare while Japan will be linked by pushbutton systems direct to key data centres around the world by high-speed data processing systems. A person will be able to dial directly from Japan to any major city in the world and watch the person at the other end of the line on TV. There will also be a vast increase in incoming information, visitors and freight. Bigger and better airports and harbour facilities will have to be built to handle the incoming rush of people and goods; and more satellites and submarine coaxial circuits to handle the incoming information.

Meanwhile, industrial production in 1985 will be five times that of 1965. The industrial areas along Tokyo Bay and in the Osaka-Kobe area will have degenerated into the scrap stage due to technological advances and will produce only 10 per cent of the nation's total output against their present 30 per cent.

In their place, the shores of Mutsu Bay in Aomori and Suo Sea in North Kyushu, for example, will become vast industrial complexes, with 500,000 and even 1,000,000 ton tankers bringing oil to the furnaces of the new industries in these areas to be fed into both regional and national networks of oil pipelines. With demand for electricity increasing five times that of 1965, Japan will be criss-crossed by superhigh-tension powerlines while large-scale atomic energy and new hydroelectric and thermal electric generation plants will dot the countryside.

A total of 30 million new housing units will have been built, including 16,500,000 new houses and 13,500,000 replacements.

Asian Economic Co-operation

(from Page 11)

Regarding foreign aid, a donor country is concerned about the efficiency of aid utilisation to ensure direct returns through increased exports and indirect advantages through re-organisation of infrastructure, agricultural development, increase of income and additional increase in the donor's exports. Unless aid is efficiently utilised, it will be a waste for the donor country and a heavy burden on the recipient country.

Japanese aid to other countries started in the form of reparations after World War II. She joined the Colombo Plan in 1954. Since 1956, when she joined the UN, Japan has taken part in several international organisations. In 1960, Japan became a member of the Development Aid Group, later called the Development Aid Committee, in the Organisation for Economic Co-operation and Development. It should be appreciated that following the War, Japan's chief task was her own rehabilitation and development rather than helping other Asian countries. Recent changes in Japan's attitude towards Asia are already known in India. Japan's capacity to aid Asian countries cannot be compared to the US aid to Latin American countries or west European countries' assistance to African nations. Japan's GNP is almost equivalent to the total GNP of 18 developing countries in the ECAFE region. The US GNP is 15 times greater than that of the Latin American countries while the West European GNP is ten times more than that of the African nations. It is time now for Japan to decide on a positive commitment in the sphere of economic co-operation and for India to review her planning strategy with a view to improving the efficiency of aid utilisation.

THIS INDIA

YOJANA invites contributions to this feature from its readers. Each anecdote must be true to life, of less than two hundred words, capturing something significant of India's rich and varied life. Each published anecdote will be paid for.

During the Indo-Pakistan conflict I was in Madras with my father and my little sister. One evening, we went to a party. Having reached early we had to wait in a big hall, with large size portraits adorning both the sides. My father, an old patriot, was interested in showing some of those pictures to my little sister. Pointing to one dusty picture, he said, "You see! my baby! how Sita is sleeping by keeping Rama's arm for her pillow." The innocent girl signed her head and asked "Daddy! What for is Rama holding his bow and arrow." "For his self-protection", effused my father and passed on to another. He swept the dust and cobwebs on it with his towel. It was a large equestrian portrait of Rani Lakshmibai of Jhansi. Pointing to the horse, he said "You want this little pony, don't you." But the pert little thing said, "No. I want that big sword for self protection."

Visakhapatnam M. Atchi Reddy

I was travelling by train from Ernakulam to Calicut. I did not know Malayalam and none among my co-passengers appeared to be knowing English or Tamil.

An old couple was also with us. The husband was suffering from some serious ailment. When the train stopped at a station that old man got down and he did not get back even when the train started leaving the platform. I told the old woman about it in Tamil. But she did not understand. By now the train was full steam ahead. So I shouted in English about the man left behind. After a minute of futile shouting one passenger understood my plea and informed the old lady in Malayalam. She began running to and fro crying in despair. Later she was helped by other passengers to get down at the

next station so that she could go back to the last station to pick up her husband.

This over, those around me began asking questions not a bit of which I could understand. This was the language barrier hardly 250 miles away from my native place.

Tirunelveli T.S. Kameswaran

Our old 'Chaprasi' invested earnings of his life-time in educating his only son. Occassionally he used to tell my father that some day his son would be an officer like him (my father) and would relieve him of the humiliation of doing a lowly job inspite of being a Brahmin.

The long-awaited day came when his son got his degree. The old man rushed to my father, accompanied by his son and requested him to get his son some nice job of an officer. My father smiled happily. He then asked the graduate to write an application.

The young man could not write even a single line correctly. I felt pity for the old man whose life's hopes shattered when my father told him that his son was hardly fit for the job of a clerk and that he better to go to the field, like all other villagers.

Chapra (Miss) Shaukat Ara Shabnam

I was travelling in a bus on a hot summer afternoon. On the way, an old woman waved her hand to stop the bus. To my surprise, the bus did not stop.

"Why? there are enough seats in the bus" I protested to the conductor who was by my side. "We don't allow dirty old hags inside the bus," said the conductor.

"You young men should not say this," I advised him.

"But old men should learn to keep their mouth shut" he retorted. I did not want to reply. I turned my head. There, above the driver's head, hung a photo of the Mahatma, garlanded profusely.

M.S. VIJAYARAGHAVAN

Kozhinjampara

My cottage is adjacent to our Chief Minister's residence. A month ago, the Chief Minister was 'gheraoed' by the villagers from all sides. They wanted a wooden bridge to be urgently constructed in their locality. Among the demonstrators were some local students and also Tanu, the groundnut peddler.

After the demonstration was over, I called Tanu and I asked him, what was the matter. He said, "I am a poor nutseller, not a demonstrator. But this demonstration was good for me. I sold all the packets of groundnuts and made Rs 9."

Agartala

BABY GUPTA

CENTRAL AID TO STATES

Performance should be the Determining Factor

CHANDRA SHEKHAR

THE States, of late, have been making increasing financial demands on the Centre. In support of this they say that their expenditure on social services has increased many-fold and the plan targets set out for them are too high to be met from their own resources. The inability of some of them to mobilize resources is really shocking. For example, Assam has estimated its fourth plan expenditure at Rs 225 crore but has included only Rs 5 crore as its own resources. Orissa will raise only Rs 20 crore for its Rs 180 crore plan while Rajasthan with a Rs 240 crore plan will raise Rs 18 crore. The share of West Bengal in its Rs 321 crore plan is estimated at Rs 100 crore and that of Andhra Pradesh Rs 120 crore for its plan of Rs 360 crore. Bihar will contribute only Rs 103 crore to its plan of Rs 441 crore. These States expect the Centre to give the balance of expenditure. Of the remaining States, Kerala will raise Rs 83 crore and hopes to get Rs 175 crore from the Centre, Madhya Pradesh will mobilize Rs 93 crore as against the Central aid of Rs 262 crore. Jammu and Kashmir and Nagaland are entirely dependent on Central assistance.

Thus, with a few exceptions, these figures show wide disparities in the state of economy of various States. They also show that these disparities are increasing. Apart from this, current State budget estimates show an over-all deficit on budgetary accounts to the tune of over Rs 300 crore. It follows that the States are badly caught in the vicious circle and the chances of their rescue from the retrogres-

sive shackles of deficit financing are quite bleak.

Furthermore, the States do not seem to be serious about their developmental efforts. Their non-project expenditure is constantly on the increase. It has been noticed that while the Central Government's expenditure on revenue account increased on an average by 5 to 7 per cent per annum during the last four years, that of the State Governments increased much faster, say 9 to 12 per cent per annum. Also, the debt position of the States has been deteriorating year after year. It is estimated that by 1970, the total debt owed by the States to the Centre would amount to Rs 5,737 crores as against Rs 3,970 crores in March 1966.

The course usually adopted by the States to meet deficit financing is either to dip into their reserves, if they have any, or to beg or borrow from the Centre or raise loans in the open market. But now the States have realised that the Centre has its own limitations and therefore, they have begun to ask for equal shares of the Central revenues. It is also to be noted that the States which are pressing the Centre hard for more funds do not fare better than other States in the sphere of administration. It is obvious that the increasing demand of funds is more 'politically motivated' than 'development oriented'.

POOR PERFORMANCE

It cannot be denied that with the implementation of the socialistic pattern of society, the States expenditure on social services has comparatively increased. But, on the other hand, their share in the Central revenues has also been

going up from time to time. Even then the States have given a poor performance with regard to making these funds more development-oriented.

The question is how the States should manage to raise their own resources for meeting their demands and whether there is any field left to be tapped? It may be noted that only six States have tried to raise new resources. Thus, new resources raised by States amount hardly to five per cent of the total deficit of over Rs 300 crore. The usual explanation given by the States about their inability to raise resources is that their tax-structures have already reached the saturation point. Even if this issue is left out of consideration for the moment, the States can certainly be asked about the total profitability of their earlier commercial and industrial ventures. What about the results of investment of heavy loans from the Centre? Perhaps, they do not have any satisfactory explanation to offer. It is obvious that the State-owned commercial and industrial ventures are doing even worse than the Central Government-owned enterprises.

It is clear that the States have not been able to harness the fruits of heavy investments and consequently much of the capital is blocked. Thus, in the light of their poor performance, the States which have made little efforts to mobilise resources, can be asked to justify their claim to Central assistance out of all propositions to their own efforts. Unless the States realize the sorry state of affairs that has come about and unless State-owned industrial and commercial units are made to yield profits, besides meeting credit obligations, the

States' demand for more funds has no justification.

It would be erroneous to say that the States have limited fields to raise their resources. Under the Constitution as many as 66 heads of revenue have been set exclusively for the States and there are 47 other heads in which both the States and the Centre have joint shares. So if the States are really determined to raise new resources and are serious in their developmental efforts, there is no reason why they should not be able to find a way.

AGRICULTURAL SECTOR

The agricultural sector affords a vast field for revenue to the States and even though it comes under the State list, the States have failed to reorganise, strengthen and co-ordinate the different agencies attached to this sector. During the past 20 years, they have been able to provide irrigational facilities to only 20 per cent of the total cultivable land and that too with Central aid. It is also equally true that they have not been able to provide improved seeds, better implements, fertilisers and loans in adequate quantities in time to the farmers. There is no doubt that the co-operative movement could have proved to be a boon if they had sincerely availed themselves of the great potentialities that it possesses. Again, there are millions of hectares of waste and weed-infested land which the States have not been able to bring under the plough. If the States could provide irrigational facilities to at least 40 per cent of the available cultivable land, and if serious attention is paid to the reclamation of over 12 per cent available waste and weed-infested land, it would not only help to raise per capita income of the farmers but also increase the State revenue to a considerable extent.

Again, agricultural income-tax can also provide a potential source of revenue to the State exchequer if it is brought on par with land revenue and the exemption limits are lowered. Under the present State laws, the exemption limits differ with different States, especially where the size of holding is the basis. For example, in Maharashtra

it is quite high whereas in U.P., Bihar, Tamil Nadu, Orissa and Kerala, it is moderate. If suitable changes are introduced, tax on agricultural income can certainly be made to yield at least another Rs 100 crore.

The resources of the States can also be increased if they initiate more labour-intensive industries tied to the rural sector and not the huge capital-consuming big projects which are subject to the constant problem of rationalisation, modernisation and now automation. Since capital funds are short, and since the main difficulty is in providing employment to the ever increasing population in rural areas, these labour-intensive industries, like handicrafts, could serve the dual purpose of stabilising the economy and accelerating rural industrialisation.

It is obvious that there is no dearth of resources with the States but there is lack of initiative and sincere efforts. Economic merits should have priority over political considerations. It is imperative for the States to rely more on their own resources and to increase them to the optimum level. The Centre has its own limitations and obligations to meet. It is the constitutional duty of the Centre to supervise, superintend and control the entire economy and to ensure balanced regional development. Any attempt to weaken this status of the Centre would only bring chaos in our planned development efforts. The time has come when the States must break away from the vicious circle of income, savings and investment through a bold initiative. Central aid should not only be need-based but also performance-based.

Kharif Campaign to Popularise High-Yielding Varieties

A special Kharif Campaign has been launched in Rajasthan to carry forward the Green Revolution already initiated in the State. The campaign covers the entire State except the chronically famine-affected district of Jaisalmer. Of the 14 lakh acres to be brought under high-yielding varieties, half the area is to be covered during the Kharif season.

As paddy cultivation is limited to six districts, the new varieties will be sown in Bharatpur, Ganganagar, Bundi, Kota, Banswara and Dungarpur.

Hybrid Bajra will, however, cover 5.50 lakh acres in 16 districts of the State. The maximum area under this crop will be in Ganganagar (90,000 acres) and Alwar (85,000 acres).

Hybrid maize will likewise be spread over 16 districts, covering a total area of 1,00,000 acres.

About 30,000 acres in 14 districts will be brought under hybrid Jowar. The maximum area (4,000 acres)

under hybrid Jowar will be in Tonk district.

While local varieties of Bajra yield only 93 kgs to 112 kgs per acre, the hybrid variety coupled with the use of adequate fertiliser and plant protection devices, yields 7.46 to 9.33 Qntls per acre. The average yield of the hybrid variety in irrigated areas has been from 11.19 to 149.2 Qntls per acre, and some progressive farmers have produced even 22.39 to 24.25 Qntls per acre. Similarly, the yield of hybrid maize is one and a half to two times as compared with local varieties.

TRAINING

So far 5,000 farmers have been trained to use high-yielding varieties at the three agricultural training centres at Udaipur, Durgapura (Jaipur) and Kota. Training camps are also being organised at the district, block, panchayat samiti and village levels.

The campaign is being conducted with the help of the audio-visual media available in the State.

RURAL COMMUNITY PLANNING

BULWARK AGAINST DICTATORSHIP

HARIPAD R. SUBRAMONIA IYER

It is often said that planning in India is done from above, so that it does not adequately meet the felt needs and aspirations of the rural people who form the broad base of the population. Planning from below is possible only when there is rural self-government and its importance cannot be overlooked. Democratic development and community development, which are the twin objectives of the community development programme and Panchayati Raj cannot be achieved without planning from below.

It is a pertinent question whether centralised planning and Panchayati Raj go together. Panchayati Raj bodies are entrusted with the entire planning and implementation of the community development programme within the district. Thus Panchayati Raj is an attempt to decentralise and democratise planning and implementation of the entire rural development programme. It might therefore be said that centralised planning and Panchayati Raj are contradictory to each other.

The principle of planning from below forms the backbone of Panchayati Raj. Democratic and decentralised planning may be defined as devolution of political, economic, administrative and financial powers and responsibilities to the elected representatives of the three tiers of Panchayati Raj to plan the programmes of rural community development. The state and central governments would co-ordinate these programmes and provide technical and administrative guidance, encouragement, assistance and financial resources, thereby leading to the evolution of a national plan.

It must be remembered that democratic and decentralised planning and administration are the two facets of the Panchayati Raj admini-

nistration. It follows that democratic planning and decentralised planning are synonymous as far as Panchayati Raj is concerned. This type of planning is flexible, non-officialised, rational, non-political and national and is based on the trial and error method. It lays more accent on consultation, discussion and decision and depends on the participation, co-operation, assistance and support of the rural people from the planning stage to the implementation stage. Besides, it is slow in achieving its goal. One may argue that real democratic and decentralised planning is possible only at the grassroots level. There are certain schemes and projects which can be planned and implemented at the national and state levels. It is equally true that there are certain functions like education, health, rural housing and sanitation, small-scale and village industries, agriculture and animal husbandry which are social necessities. Planning and implementation of these functions should be entrusted to the rural community. All this indicates the need for a planning machinery not only at the national and state levels, but also at the Panchayati Raj level.

One of the basic features of rural community planning is that it must start from the bottom-village upwards to the district level. In other words, the district and block plans are co-ordinated and consolidated plans of the village panchayats within the districts. This is possible only by making village panchayat the basic unit of planned community development. It follows that the fixation of targets, mobilisation of resources, fixation of priorities, allocation of scarce resources to various schemes and projects and administration of the plans and schemes are the responsibility of the individual village panchayats. This can be realised only if there

are clear-cut and well-defined functions, powers, duties, responsibilities and finance between the three tiers of Panchayati Raj. Co-ordination between the three tiers as well as between officials and non-officials is achieved by making the president of the lower tier an ex-officio member of the next higher tier. It is a fact that planning from below implies diffusion of power. Therefore, the mode of election to the three tiers should not lead to concentration of power in the hands of a few members. The village plans should be consolidated into block plans which in turn grow into district plans and so on.

Master of its own Destiny

Another salient feature of rural community planning is that the rural community is the master of its own destiny and it should be constantly consulted. Regional economic and social disparities necessitate community planning with a keen attention to local needs and resources. Integration of the rural community plans with the state and national plans has to be done after giving due weight to the economically backward areas.

The importance of community planning as a bulwark against dictatorship, bureaucracy and regional imbalances cannot be overstressed. It is a truism that Panchayati Raj is the best instrument for planning from below. There are certain prerequisites like devolution of power and responsibility to each level, advance information of financial assistance available from the state and central governments, and a sound and stable organisational structure. There should also be flexibility in administrative and financial procedures and detailed surveys of areas for ascertaining local needs and the resources available. Gram sabhas have to be strengthened and officials and non-officials trained in the planning process. There is need for a complete integration between the various development departments within the district and the three tiers of Panchayati Raj. A separate rural planning wing should be attached to the state Planning Boards and the Planning Commission.

NIAGARA FALLS "TURNED OFF"

WHOEVER heard of "turning off" Niagara Falls? yet, that is exactly what has happened this summer when the thousands of tons of water which normally thunder over the bluffs on the American side of the Niagara River are temporarily diverted to the Canadian side.

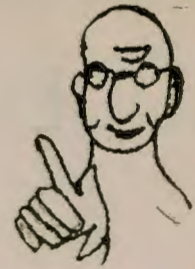
The project, which is under the supervision of the International Joint Commission, a Canadian-US agency that regulates the river, got underway on June 1 when work on a 360-metre dam started in the river near Goat Island on the American side. This obstruction will force the water to alter its course and thunder down over the Canadian Horseshoe Falls. Geologists will then be lowered down along the 48-metre rock wall of the bluff to study the composition and rock formation at its base. They hope to come up with a method of arresting the serious erosion of the wall which is increasingly diminishing the scenic splendour of the waterfalls.

The Niagara Falls form a part of the Niagara Escarpment, a 960-Km-long shelf of rock, which seams central Ontario like a mammoth backbone. 500 million years ago, ancient seas covered much of North America. The Niagara Escarpment formed a part of the shoreline of this sea. No one is really certain how old the Falls are but geologists estimate that 14,000 years ago, their position was at least four miles downstream from their present location. During the last two hundred years, this erosion has been accelerating, so much so that the Horseshoe Falls have receded 259.5 metres since 1764.

Long before the white man came to this part of Canada, the Niagara River was an important and much-travelled fur trade route of Red Indians and the name "Niagara" which has been interpreted as "Thundering Waters", was in general use. The Iroquois or Six Nation Red Indian tribe, who had either driven out or annihilated the Neutral

Red Indians, who were the earliest recorded inhabitants, settled the area. Though wily strategists and fighters, they had developed rudimentary agriculture and lived in bark houses in fairly permanent villages or settlements. They cultivated pumpkins, squash and Indian corn and were skilful in the art of making clothes which they ornamented most colourfully.

The first recorded impressions of the Falls were those of Father Hennepin, a Recollet friar in the party of the French explorer, Sieur de la Salle, who came to the Niagara district in 1678 to trade with the Red Indians and to follow up his search for the inland route to China. So impressed was the religious father with the "prodigious cadence of water", which he said fell from a height of 180-240 metres, that he claimed you could hear it crashing over the rocks some forty-five miles away! He could be excused for his extravagance, however, as it is likely that when he saw the Falls they were even more impressive than they are today. The flow of water then was actually four



IGNORAMAN

Wants to Know
If
another padyatra
could not solve
the Telengana tangle

times as great as it is now.

The Niagara River supplies one quarter of the electric power used in Ontario. The generating stations at Queenston on the Canadian side and Lewiston in the U.S.A., aid combine to make up the largest generating complex in the world.

Boosting the Heart

THE world's first nuclear-powered cardiac pacemaker designed to maintain for ten years a normal heart beat in patients suffering from a heart disease—has been successfully implanted in a dog. The device has been developed by the U.S. Atomic Energy Commission after testing it for three years in the laboratory under conditions simulating those in the human body.

The cardiac pacemaker is about two-thirds the size of a pack of cigarettes.

Pacemakers—now used by about 20,000 persons—maintain normal heartbeat in patients with "heart block," a condition which usually results from disease-induced injury to the heart's specialised conduc-

tion system. Pacemaker replacement, although a relatively simple surgical procedure, entails inconvenience, expense and medical risk to the patient. Hence a long-lasting nuclear-powered pacemaker gives hope of a major breakthrough in this field of cardiac problems.

The pacemaker's nuclear power source is based on the principle of thermoelectricity—the direct conversion of heat to electrical energy.

The pacemaker's thermo-couple is composed of a copper and nickel alloy and a nickel and chromium alloy drawn into wire strands and woven into a glass tape. Heat developed by decay of the nuclear fuel (Plutonium 238) is used to heat the wires at one end.

CO-OPS FOR AGRICULTURAL PROCESSING

K. SAIN

ONE of the surest ways in which a farmer can augment his income is to sell his marketable surplus as nearly as possible as a finished product to the final consumers. This is done through agricultural processing. It is defined as the process of changing agricultural raw materials or farm produce into a better usable form or into finished products. The term agriculture here includes animal husbandry and ancillary services, forestry and fishery.

There are some farm products like milk and eggs which can be consumed without much processing. But processing is necessary in other cases so that the produce is changed into consumable form.

To some extent, different types of farm produce—foodgrains, oilseeds, cotton, sugarcane, fruits and vegetables—can be and are actually processed on a small scale by individual peasant families, mainly to satisfy domestic needs. But in modern times, in order to be economically profitable, processing of farm produce has to be done on a large scale involving heavy investment and complicated techniques. Except in the case of a small number of rich farmers, large scale undertaking is unthinkable on the part of individual peasants, especially in an underdeveloped country. The task of processing is undertaken largely by non-agricultural specialists and tradesmen who establish necessary plants and factories sometimes as a joint-stock organisation and often in collaboration with the Government.

The difficulty of undertaking processing on a large scale by the farmers themselves can be obviated if they agree to combine themselves into processing co-operatives. The

Larger Output at Lower Cost

aggregate scale of production of a co-operative venture will increase because favourable changes in production possibilities, comprising methods and techniques of production, will start having their effect as soon as the farms combine among themselves. This will mean a larger total output at lower per unit cost.

Many farm products like fruits and vegetables are perishable and transport is costly and difficult to get. It is, therefore, advisable that farmers should process their products through their own co-operatives locally and avoid wastage. In the case of banana, mango and some other fruits, sometimes as much as 10 per cent of the total marketable surplus is wasted.

Practical experience in India shows that a co-operative for processing farm products can be successfully organised and efficiently run. Such a co-operative can establish large and modern processing plants even in the case of perishable farm products such as fruits and vegetables. This is evident from the working of the Jalgaon district co-operative marketing society in Maharashtra. In 1964, the society erected a banana powder plant in Jalgaon with a total capital outlay of about Rs 15 lakh and reported an average annual production of 200 tonnes of banana powder, 25 tonnes of papaya powder and 25 tonnes of mango powder. Since the same plant could produce banana as well as mango, papaya and egg powder and since the peak seasons of the products are different, the plant was expected to work all the year round.

The introduction of larger plants and improved technology can generate considerable economies so as to reduce cost and enhance operational efficiency and profit margins. This has been demonstrated by the mustard and rape seed processing industry of Hissar district of Punjab.

The report of the Mysore Sugar Co. Ltd., Mandya, about its working since 1933 gives one an idea of how far agricultural processing industries can promote agricultural development and also contribute towards industrialisation.

COMMON WEAKNESSES

The common weaknesses and difficulties of an agricultural processing co-operative are: (i) unsound financial position due to small coverage, dependence on external assistance, Government apathy, (ii) internal rivalries between its members, especially when the member-farms are not of the same size; (iii) procedural delay relating to replying and release of goods from co-operative godowns for purposes of advances to the members; and (iv) legal difficulties such as absence of satisfactory provision for registration of a charge against the assets of a society, and danger of monopolisation in case a particular association controls too large a proportion of supply of a particular product.

It is suggested that agricultural processing co-operatives, in order to be successful, must observe all the essential principles of co-operation and must guard against internal dissension and rivalry.

Location of the processing plants should be carefully selected with due consideration of such factors as availability of raw materials, supply of labour, cost of transport and power, marketing and credit facilities and export-orientedness of the product. Finally, development of processing co-operatives should be better integrated with the broader plan of agricultural development.

INDIAN TEXTILES IN WORLD MARKETS

SHIPMENTS of all cotton textiles during the year 1968 are estimated at Rs 9,470.7 lakh as against Rs 8,221.3 lakh in 1967. This represents an increase of Rs 1,249 lakh in the year 1968 over the previous year. Compared with 1966, the year of devaluation, shipments are better by 10.8 million dollars. The improvement during the year 1968 is seen all round in the exports of cotton fabrics, yarn, apparel and other made-up items.

Exports of cotton textiles during December 1968 are estimated at Rs 6.95 crore. This is considerably lower compared to Rs 9.97 crore achieved in November 1968 or the performance of Rs 7.81 crore during December 1967. The pace of shipments during December 1968, was considerably slower on account of the clamping down of the Import Deposit Scheme in the United Kingdom.

EXPORTS TO INDONESIA

Exports of cotton piecegoods were well-maintained in the Asian Zone. The offtake by Indonesia exceeded the previous year's figure of 112 lakh sq. metres at 137 lakh sq. metres in 1968. Exports to Ceylon, however, displayed a marked fall at 43 lakh sq. metres compared with 68 lakh sq. metres in 1967. Saudi Arabia reduced marginally her offtake by 10 lakh sq. metres in 1968. Shipments to Sudan in the African Zone, maintained a higher offtake of 475 lakh sq. metres compared with 363 lakh sq. metres in the previous year. However, the offtake by the other African markets continued to trail below their levels achieved in 1967. Only Tanzania showed some improvement at 75 lakh sq. metres achieved in 1968,

which was only half of the offtake in 1966 but better than the 59 lakh sq. metres recorded in 1967.

In Europe, India has consolidated substantial gains in practically all destinations. In United Kingdom, our performance reached a level of 1,593 lakh sq. metres compared to 1,481 lakh sq. metres in 1967. We had not only reached the ceiling of our quota for the year 1968 but also consumed some "borrowed quota" of 8.5 per cent from the 1969 level. However, the announcement of the Import Deposit Scheme, has proved to be a setback. The offtake by the E.E.C. amounts to 156 lakh sq. metres during 1968 compared with 20 lakh sq. metres in 1967.

In East Europe, the Soviet Union increased her offtake from India from 54 lakhs sq. metres in 1967 to 161 lakh sq. metres in 1968. The prospects of maintaining the rate of exports to Europe are very bright, judging from the continued interest that this region evinces in Indian textiles.

In the American Zone, our shipments to United States improved from 413 lakh sq. metres to 543 lakh sq. metres in 1968. However, during the L.T.A. year ending September 30, 1968 we could approximately utilise only 76 per cent of our annual quota for this market on account of the sluggish market conditions earlier in the year. Canada reduced her offtake from 132 lakh sq. metres in 1967 to 111 lakh sq. metres in 1968.

Indian exports to New Zealand, have subdued from 69 lakh sq. metres to 45 lakh sq. metres in 1968.

COTTON YARN

The export of cotton yarn during 1968 has established a new record, vesting Rs 10 crore in foreign exchange. A total of 660.0 lakh kg of yarn valued at Rs 1,062 lakh was exported during the year as compared to 110.2 lakh kgs valued at Rs 748 lakh in 1967. The major markets for Indian cotton yarn were Burma, Ceylon, Indonesia and the United Kingdom. Business worth Rs 2.70 crore was completed with

Burma and to Ceylon Rs 2.06 crore worth of yarn has been shipped. In Indonesia, we have broken fresh ground with shipments of Rs 56 lakh worth of cotton yarn. Our shipments to Nigeria, however, declined on account of the instructions by the Nigerian Government that Nigerian L/Cs can be realised by the foreign exporters only after a period of 180 days. Shipments of yarn to United Kingdom were maintained at last year's level. The prospects of continuing the present rate of shipments of cotton yarn are very bright.

OTHER MANUFACTURES

Shipments of cotton readymade garments during 1968, amounted to Rs 3.14 crore as compared to Rs 2.45 crore achieved in 1967. Increased interest is being shown by the United Kingdom and the United States for Indian garments and shipments are likely to improve during the current year. Exports of hosiery were slightly better at Rs 17 lakh compared with Rs 14 lakh recorded in the previous year. The shipments of other made-up items during the year 1968 amounted to Rs 1,442 lakh as compared to Rs 1,276 lakh reached in the year 1967.

(Courtesy : Texprocil Bulletin)

USING A CHEMICAL TO GET MORE RUBBER

Research scientists in Malaysia have found that the yield of rubber can be significantly increased by applying a compound known as "Ethrel" to the trees. Experiments on test plots have shown increased yields of up to 300 per cent.

Ethrel, like many other commercial synthetic hormones already in use, releases ethylene gas in the tree's tissues, but unlike others does not appear to have any damaging side effects.

The work currently being done at Rubber Research Institute of Malaysia is still in the experimental stage.

Work in the general field has been going on at the Institute for the past decade, but this project was started only a year ago.

KERALA'S NEW INDUSTRIAL POLICY HAS NOVEL FEATURES

S. KRISHNA AIYER

In the first three Five Year Plans, efforts in Kerala were directed mainly towards building up an infrastructure for the growth of industries. But both the public and private sectors have failed to tap the various facilities provided for this. The outlay assigned to industries in the First and Second Plans together was only Rs 7.96 crore out of the total Plan outlay of Rs 177 crore. Owing to the shyness of private capital, very little investment took place in this sector.

An outlay of Rs 17.20 crore for industry in the Third Plan indicated a slightly bigger effort than in the first two plans. This was slightly more than 10 per cent of the State plan outlay. The most important programmes taken up in the Third Plan were those relating to the expansion and reorganisation of Government-owned industrial concerns, the expansion of the Kerala State Industrial Development Corporation and the Kerala State Small Industries Corporation, the establishment of industrial estates and the grant of assistance to small-scale industries. Investments in the central and private sector industrial units was slightly better during the Third Plan period. Of the private sector units which came up during this period, the Zinc Smelter plant, the Aluminium Oxide Factory, the Tin Containers Factory, the Oxygen and Acetylene Factory and the Electronic Instruments Factory deserve special mention.

In the Draft Fourth Plan for Kerala, an outlay of Rs 30 crore is suggested in the State sector for large and medium industries and mineral development besides an investment of the order of Rs 325 crore in the central sector and Rs 130 crore in the private sector. The document says that the strategy

in the Fourth Plan for Kerala would be in undertaking a deliberate programme of industrialisation through the establishment of a large number of modern units in the Central, State and private sectors and to stabilise the traditional industries, such as coir, cashew and handloom, which provide substantial employment.

Proper utilisation of raw materials within the State is a pre-requisite for the State's industrial advancement. The educated and intelligent manpower in the State is a positive asset in harnessing these indigenous resources to productive use. Though power is available at cheap rates, a continued and uninterrupted supply could not be assured in the past. But the deficiencies have mostly been overcome with the commissioning of projects like Sholayar and Sabarigiri. Major projects like Idikki and Kuttiyadi are under execution. Commissioning of these projects will render Kerala self-reliant in respect of power.

INDUSTRIAL POLICY

The new industrial policy statement contains certain novel features. It shows a correct grasp of the special needs of an entrepreneur who proposes to invest in Kerala. Power-intensive industries and other industries started outside the existing major industrial belts would qualify for suitable rebates in power tariffs. The policy of insuring industrial units against loss of production due to power failure will be welcomed by the industrialists. This is in complete contrast to the penal surcharges on power supply to industry. The statement, while emphasising the importance of discipline among the workers, appeals to them to maintain high standards of productivity. It is proposed to supply free of cost project reports on medium and small-scale industries to prospective entrepreneurs. In the case of large industries,

the Government promises to assist in obtaining licence and in procuring raw materials, besides meeting 75 per cent of the cost of the project studies. The land acquisition cost will be recovered from the industries in easy instalments. The Government proposes to provide guarantees to enable private industrialists to obtain credit from Central or State agencies of institutional credit. Besides making all efforts to promote new industries, the policy statement promises to have a fresh look at the labour-intensive traditional industries in the State which are on the verge of decay.

The State could be placed on the 'take-off' stage if its natural advantages like the extensive seaboard, its reputed spices and hill products and its capacity to earn a substantial amount of foreign exchange could be fully exploited. A bold policy of state-owned economic ventures could certainly pave the way for economic development in the State.

It has to be pointed out that the record of the public sector in the industrial sphere has been unsatisfactory. The State has, therefore, achieved experience in the industrial field at too high a cost. The losses sustained so far underline the need for qualified managers to run the public sector undertakings. Failure in the past, however, should not deter the State from launching public sector undertakings. Under proper management, new ventures can run successfully. The formation of a public sector corporation to mop up surpluses accruing in foreign trade will enable the State to develop and enlarge the public sector.

Articles which are not accepted for publication in the journal will be returned only if they are accompanied by self-addressed, stamped envelopes.

ROLE OF SMALL SCALE INDUSTRIES IN MEETING DEFENCE REQUIREMENTS

V. NATH

THE technique of war has undergone a radical change in the recent past. Longer and accurate range of rifles and guns, efficient and exact signalling and tele-communications system etc. are some examples of improved war material being effectively brought into use these days. Although India has been late in the field of industrialisation, she has embarked upon the production of all these armaments. It is, therefore, necessary that the capacity of all the existing small-scale units for the manufacture of war material should be utilised. For this purpose, there should be a quantitative and qualitative assessment of the capacity of the units. Statistical information on this subject is very scanty. Therefore, a system to locate the capacity should be immediately evolved. It may take the shape of registration of the existing small-scale units.

The experiment has been tried but, being voluntary, it has not achieved much success. It may, therefore, be necessary to take the help of legal sanctions and enforce compulsory registration. Once this is done, Government will be in a position to know what and how much is available.

As the definition of small-scale units is too comprehensive to admit both competent and inefficient ones, it may be necessary to classify them as such. These units in either category could further be arranged under broad industrial groups like mechanical engineering, automobile engineering, chemicals, and electrical engineering. Government could also classify the various defence requirements under similar broad industrial groups. There would then be no difficulty in routing orders to the concerned units. If the capacity of the competent units falls short of requirements,

the inefficient ones could also be brought within productive organisation. There would be a number of items which the small-scale units would not have produced so far, but which could be produced with a little planning.

For making the best use of the capacity in the small-scale sector a Smaller War Plant Corporation was set up in the United States during the second World War. It was given authority to undertake munitions contracts which it could produce by itself or by sub-contracting to smaller firms. Following the establishment of the Corporation and the passing of the Small Business Act, the capacity of smaller units was fully utilised and war production increased. Inducements to small firms were also offered as is now being done in India. In addition, the procurement department gave preference to firms willing to sub-contract.

Even in the United Kingdom, 70 Capacity Officers were appointed to help individual small firms. This arrangement ensured that all firms, however small and dispersed, could be called in to meet urgent or increased demand. It proved of great value in the later half of the second World War when the demand for components greatly increased.

The defence requirements should be graded according to their suitability of production for knowing whether a particular store requires a specialised or a non-specialised unit of manufacture. At one end of the scale there are stores like uniforms or water-bottles which could be made by the clothing and hardware firms in the country. At the other end, there are items like field shells which could not be manufactured by the equipment or processes of civilian industry. Between these two extremes there are certain other defence stores of greater or lesser affinity to either type, and

it is generally assumed that some of them are unsuitable for production by an average firm. On these assumptions a fully mobilised war industry may be set up requiring a large number of specialised munitions factories.

In the entire field of munitions, self-contained factories or units equipped with specialised plants are far from universal. A large number of defence stores in this country will have to come from factories which are either large or small and classified as General Engineering Shops even though they might have been strengthened or adapted by the addition of special equipment. Changes from civilian production to that of making defence stores may have to be achieved not by re-equipping of factories but by re-tooling of the existing machines and by adding relatively a few specialised machines to the existing plant.

Small firms do not have enough facilities for experimenting, testing, designing and development. Though some undertakings are as efficient as the best anywhere, a large number of them in engineering and allied industries feel shy of modern methods of production technique.

Production of defence stores can be shared in two ways—by dividing responsibility for making the final product and by 'farming out' the production of parts and components. Where a single firm is too small or too pre-occupied to shoulder the responsibility for the entire output of a defence store, the obvious remedy lies in distributing the contract among a number of firms.

The second method of dividing the manufacture of defence stores is for some units to act as 'main manufacturing units' and they may be given contracts for the assembly of the complete product, while the other units make only parts or components.

Transport is the road to progress ...and Dunlop leads the way

An efficient road transport system is the quickest, surest way to assure economic progress, integrate a nation. Transport links industries with raw material sources and markets, connects city and country, people and places.

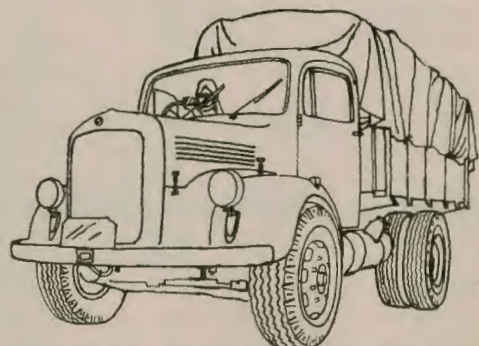
Over the last 30 years, commercial vehicles in India have increased ten-fold; over the last two decades, road mileage has tripled. In the fourteen years

after 1950-51, goods traffic by road increased five times while passenger traffic shot up by 228%.

With this rapid expansion in road transport, India is well placed on the road to progress. And helping to keep her transport on the move is Dunlop India. Dunlop brought in India's first pneumatic tyre as early as 1898 and opened the country's first automotive tyre factory in 1936.

To meet the evergrowing demand, Dunlop set up a second factory in 1959. Today Dunlop has a tested tyre for almost every type and size of vehicle plying on our roads. And each Dunlop tyre is manufactured to special specifications to suit India's roads and operating conditions.

As India's transport moves ahead, Dunlop is geared to lead the way.



DUNLOP INDIA — keeping pace with India's road transport

DPRC-37R

The Essence of Indian Temples

Temples of India. Published by Publications Division, Patiala House, New Delhi. 100 pages. Rs 4.50.

Krishna Chaitanya

A popular but erroneous western reading of Indian metaphysical outlook is that it denied the world to emphasise the other-worldly, dismissed becoming as illusion and only withdrawn being as real. But actually, the Indian outlook has been a fine synthesis of concepts of transcendence and immanence. The variety of the world was joyously accepted even while the essential unity of being was confidently affirmed.

The temple architecture of India reflects this synthesis. If the *sanctum sanctorum* where the image representing the deity is housed is small, bare and dimly lit, the facade is complex, ornate and profusely decorated. Likewise, the tower of the temple rising to the sky is a signal to even those who are afar that it is an abode for communion with heaven; when one draws near, one sees the whole structure transformed into a vast sculpture, mirroring the myriad plants, animals and men of the earth.

The publication under view is not a detailed architectural treatise. But it does give the essence of the symbolism and structure of Indian temples and their regional variations throughout the length and breadth of the land. We study the Stupa growing from a simple mound into a great enclosure with magnificently sculptured railings and gateways. The rock-cut temple is a great tradition of the country and in the Kailasa temple at Ellora, a whole hillside has been carved in perfect mimesis of the structural temple.

The structural temple itself has had a varied regional evolution. The Orissan temples stand on a high terrace emphasising verticality.

The Hoysala temples of Mysore hug the earth more intimately, and spread radially into a stellate form. Chola magnificence favoured the construction of thousand-pillared halls and the baroque spirit of Vijayanagar has made the Kalyana Mandapa throng with pillars which have been masked as compositions of animal and human figures. Folk tradition has emerged to classical status in the Bengal temples, with their curved cornice and terra cotta decoration. And in the case of the Sun Temple at Konarak, architecture gives the illusion of having almost become mobile, for the temple is in the form of a chariot drawn by horses instinct and alive with energy.

The publication is profusely illustrated in black and white.

Evolution of Indian Painting

Panorama of Indian Painting. Published by Publications Division. 34 pages. Rs 3.50.

THIS is a compilation of six talks from All India Radio in the National Programme series. Since the talks are by different people, the compilation does not add up to a detailed history, tracing the evolution of Indian painting from the earliest days to contemporary times. Nevertheless, it presents a very helpful introduction to the major phases of this evolution.

In the opening talk, Dr. O.C. Gangoly makes a fascinating collation of data from artefacts and the earliest literary references to reconstruct the beginnings of the tradition. He has marshalled convincing evidence to show that the practice of painting, incipiently represented by the pottery decoration of the Indus Valley culture, had evolved to the status of an autonomous art as early as the Vedic period. This type of reconstruction could have been extended to some of the later

phases too, for throwing light on issues which have remained obstinately controversial. For instance, some authorities have been dogmatic in their assertion that cabinet painting, as distinct from murals and manuscript illustrations, emerged in India only in Mughal times and that too, due to the stimulus of Iranian painting. But the exceptionally detailed description of the painting of Shakuntala by Dushyanta in Kalidasa's famous play gives every indication that portrait painting—giving a full or three quarters figure shown in close-up, with a little bit of landscape in the background—was a stabilised tradition even as early as the fourth century.

In European painting, from the Renaissance to the nineteenth century, illusionistic optical perspective enjoyed the status of a fundamental dogma which almost made it impossible for anyone to imagine that other approaches to this compositional principle could be possible. For the same reason, the radically different approach of the Indian tradition was regarded by academic circles in Europe as due to lack of dexterity. In a very per-

spective talk, Asok Mitra brings out the psychological subtlety and the accomplished dexterity of the handling of perspective by the Ajantan artist.

Moti Chandra's anecdotal account of Mughal painting and the talk by Nihar Ranjan Ray on the Rajput style take the story further forward. The genesis of Rajasthani painting and its relation to Mughal painting have been some of the most controversial issues in the history of this tradition. These issues are not dealt with here and perhaps it is unfair to expect them to have been treated at length in a popular account. But Nihar Ranjan Ray does give some indication of the complexity of the problem. No longer is it possible to regard Mughal painting as a provincial variant of the Iranian idiom or Rajput painting as completely derived genetically from Mughal painting. Dr Randhawa gives an excellent, though brief, account of the Kangra School. But perhaps a contour narration of all the Pahari

schools would have been more satisfyingly adequate. As it is, a very important school like Basoli does not figure at all in the narration. The concluding talk is by B.C. Sanyal on modern Indian painting. The very complex contemporary scene cannot possibly

be covered in a brief talk and Sanyal has attempted only a very faint contour.

The compilation is illustrated both in colour and black and white.

K.C.

A Research Aid on Chinese Economy

A Concise Economic History of Modern China by Frank H.H. King. Published by Vora & Co. Publishers, Bombay. 244 pages. Rs 16.

S. Dharmarajan

ECONOMY in China, as elsewhere in Asia, has been agricultural throughout. People's livelihood depends on farms. Statistical data until the Communist take-over, however, were grossly inadequate. The country till then had no unified nation-State economy and there are few authentic accounts of the economic situation except about crises or disturbances. The basic economy was rarely affected by centrally-directed changes. For long periods in its history, there had been no attempt to bring about a radical change in the structure of its rural economy. No exact data were available about production or cropping patterns or even about flood control and irrigation, though foreigners and officials of imperial days had left descriptive accounts of the periodic disasters that overtook the country.

The only data available were from selective memorials of leading Chinese officials to the Emperor, consular accounts and reports of the imperial maritime customs. But these provided only a background for an analysis. Statistics were inaccurate.

Dr King's attempt at a comprehensive modern economic history of China, despite inadequate statistics and few quantitative reference points, is a welcome research aid. He frankly admits that the problems of compiling Chinese economic history are one too many. But within these limitations, he has sought to present synthesis of the results of his own and others' research.

According to Dr King, modern Chinese economic history begins in 1840 at the time of the foreign

thrust. His periodisation of the subsequent phases of economic history is, however, in total contradiction to Peking's thesis. To him, Chinese economy was not one of unchanging stagnation throughout. The Communists contend that only after their victory in 1949 did China end the feudal period. His view is that the stagnation thesis is an oversimplification. Even as early as 1840, peasant, agriculture had entered a phase of expansion into new areas with new crops. The foreign impact had a credit side as well.

The book provides considerable information on the foreign impact on China's traditional economy. For over 50 years, foreign contacts had their effect on agriculture, trade and the monetary system, but these did not set off any modernisation. And here the author makes a distinction between the foreign impact on traditional economy and the influence of foreigners and foreign ideas. The impact became all-pervasive with the foreign military gains and the treaty system.

An interesting development during this phase was the spread of Indian and Anglo-Indian banking institutions to China, though economic relations between the two countries had no significant role in either's development. An explanation for this was that Europe needed a source of finance for its trade with China which initially was in the latter's favour. By mid-19th century, many Chinese were representing Bombay houses. Sassoon and Cama were familiar names on the Chinese coast. The financial resources of merchants had to be supplemented by banks. And thus banks from Bombay went to Shanghai, Canton and Hong Kong. An episode of how a group of Hong Kong promoters outwitted a group in Bombay which tried to secure a charter for founding a Bank of China provides a sidelight to the story of India-based financing.

China's attempt at economic modernisation, the economic thoughts of Sun Yat-sen, the shattering of economy in the wake of the Japanese aggression, the great inflation of 1947-49, the collapse of the post-war economic policy and the economic revolution since 1949 have all been discussed in detail.

Though the account could form the basis of a wider study, many of Dr King's interpretations are open to question. Also, the extension of the cultural revolution to the economic sector that has pushed the country to a new stage where it could make a leap forward or take a plunge into disaster is not covered by the book. But these do not belittle its value as a basis for further study. It also contains a good bibliography on Chinese economy.

A Socio-Economic Survey

Profiles of Chhattisgarh—Socio-Economic Survey of Bhilai region Part III by Directorate of Economics & Statistics, Madhya Pradesh. Published by Popular Prakashan. 119 pages. Rs 22.50.

Dipak B.R. Chaudhuri

When New Delhi decided to locate one of the public sector steel plants at Bhilai in backward Chhattisgarh region of Central India, the State Government undertook a scheme to prepare a benchmark survey of conditions prevailing in the region. The object was to study the impact of industrialisation on the local economy and to make a systematic and scientific appraisal of the socio-economic changes.

Similar studies on the impact of industrialisation were made earlier by the Cultural Research Institute of the West Bengal Government and several other States. The Directorate of Economics and Statistics of Madhya Pradesh conducted the survey under review in three rounds between 1955 and 1959.

The Profiles of Chhattisgarh contains results of the sociological survey conducted as a part of the third round. It covers aspects of social and cultural life of the people, such as pattern of village and

household economy, social structure, family and marriage, status of women, early training and discipline of children, attitude towards society and state, social control association in the village, religious beliefs and rituals.

This survey was designed to

provide a framework for instituting comparisons at a later stage to measure the impact of industrialisation on the social system and value orientation.

The profiles would have been better if at least a map of the region was included in this volume.

The appendix contains the last few chapters of Bankim's well-known Novel *Devi Chowdharani* translated into English by Bankim himself. A specimen of Bankim's handwriting is given in the appendix.

Jogesh Chandra Bagal, who has edited the volume, is a scholar of repute. In spite of his advanced age and physical infirmities, he has presented the collected works in a manner conducive to a proper understanding of the great author by those who may not have studied his works in Bengali. Bagal's foreword, editorial notes and biographical sketch of Bankim Chandra are scholarly and instructive, representing a store-house of information which satisfies the curiosity of the reader.

OTHER BOOKS RECEIVED

Opinion Leadership in India by Lalit K. Sen. Pages 61. Rs 4.50. *Resource Use and Productivity on Farms* by T.P.S. Chawdhari, R.N. Tripathy & J.N. Sharma. Pages 111. Rs 12. Both published by the National Institute of Community Development, Hyderabad-30

Alternative Policies for the Fourth Five Year Plan. Pages 397. Published by State Planning Board, Economics Division, Kerala.

India—A General Survey by George Kuriyan. Pages 178. Rs 6. *Temples of North India* by Krishna Deva. Pages 87. Rs 4. *Plant Diseases* by R. S. Mathur. Pages 132. Rs 4.75. *Fruits* by Ranjit Singh. Pages 213. Rs 5.75. *Assam* by S. Barkataki. Pages 161. Rs 4.50. All published by National Book Trust, 23, Nizamuddin East, New Delhi-13.

Farmers of India Volume IV by M.S. Randhawa and V. Nath, Suresh Vaidya, H.M. Patel, M.D. Patel, B.S. Kadam. Published by the Indian Council of Agricultural Research, New Delhi-1. Pages 317. Price Rs 28.

Seminar on Fertiliser Marketing 1968 Proceedings published by The Fertiliser Association of India, 85, Sunder Nagar, New Delhi-11. Pages 342.

Fertiliser Scene in India. Fourth Plan Proceedings No. 2 of the Fertiliser Institute, Division of the Fertiliser Association by V.M. Kasturirangan. Published by Fertiliser Association of India, 85, Sunder Nagar, New Delhi-11.

Spiritual Stories of India. Illustrations by P. Khemraj. Published by the Publications Division, Patiala House, New Delhi-1. Pages 124. Rs 3.50.

English Writings of Bankim Chandra

Bankim Rachanavali. Edited by Jogesh Chandra Bagal. Published by Sishu Sahitya Samsad Private Ltd, 32-A Acharya Prafulla Chandra Road, Calcutta-9. 249 pages. Rs 15.

P. C. Roy

It is a pleasure to note the continuing interest in the writings of Bankim Chandra Chattopadhyaya whose life came to an end in the last decade of the nineteenth century. In the volume under review, the Sahitya Samsad presents the English works of Bankim Chandra, which were brought out earlier by the Bangiya Sahitya Parishad about 30 years ago and had been out of print for quite a number of years.

Bankim was a prolific writer. Novels were his *tour de force*, although he had also composed poems and his essays are brilliant expositions of a mind endowed with the wisdom of the East and the West. In one of the letters to Dr Sambhu Chandra Mukherjee, he writes in all humility: "Malicious fortune has made me a sort of jack of all trades and I can turn up any kind of work from transcendental metaphysics to verse-making. The Novel is to me the most difficult work of all, as it requires a good deal of time and undivided attention to elaborate the conception and to subordinate the incidents and characters to the central idea."

Yet Bankim in the midst of his strenuous official and other duties wrote fourteen novels which earned for him an undying name. Many of his literary writings in Bengali were translated into English and French. He also wrote in English. The publishers of the current volume of English works follows the earlier Parishad edition, with some variations. The volume is in four parts: (i) Rajmohan's Wife (ii) Essays and

Letters (iii) Letters on Hinduism and (iv) Appendix.

Rajmohan's Wife is the first and only English novel of Bankim Chandra which was serialised in 1868 in *Indian Field*, a weekly edited by Kishori Chand Mitra. The Essays are actually research papers which reveal the wide range of the author's intellect and his deep study of the old scriptures, Hindu philosophy and Bengali literature. In his writings, he disparages "the disinclination of the more educated classes to write for their country in their own language". He was aware at the same time that the best Bengali books are the products of Bengalis "who are highly cultivated English scholars".

The letters of Bankim may be grouped in three parts. Some of them are addressed to various friends and acquaintances. The second group of letters relates to the Hastie controversy. Principal Hastie of the General Assembly Institution (now Scottish Church College) took exception to the presence of English-educated gentlemen at the *Shradh* ceremony of the grandmother of Maharaja Harendra Krishna Dev of Shovabazar, performed with great pomp and solemnity. Hastie wrote a series of letters to *The Statesman* denouncing Hindu idolatry in very strong terms. Bankim's rejoinder in defence of Hinduism is illuminating.

The last group of letters on Hinduism reveals the development of Bankim's religious ideas. It is the lack of understanding of this great man's ideas, which has recently led to the confiscation of the copies of the March 2 issue of a Hindi daily of Delhi. This issue brought out the Hindi version of an article 'Ramayan ki Ek Vilayati Alochana' of Bankim Chandra who wrote it as a satire on the superficial knowledge of the westerners about our books of religion.

Assured Water Supply and Other Inputs Must Precede Mechanisation

SURESHCHANDRA SRIVASTAVA
PRAHLADKUMAR BHARGAVA

IN the five decades before the advent of planning, Indian agriculture moved slowly at an average rate of less than 1.5 per cent per annum. In the fifteen years of planned development, the rate of growth rose to 2.8 per cent in the First Plan, 3.9 per cent in the Second Plan and then came down a little in the Third Plan.

The broad objective in agriculture during the Fourth Plan is twofold: first, to provide the conditions necessary for sustained increase in production of 5 per cent per annum over the next decade, and secondly, to enable as large a section of rural population as possible to participate in development and reap its benefits. Agriculture, accordingly, has been assigned top priority during the Fourth Plan.

The new strategy which seems to have been devised to raise agricultural output is to take up intensive cultivation in areas where irrigation is assured. Improved seeds of foodgrains will be used in 274 million acres of land, of which 32.5 million acres will be sown with the new high-yielding varieties of seeds by the end of the Fourth Plan. Inputs like fertilisers, better seeds, pesticides and technical advice and know-how which are indispensable for boosting agricultural production will be made available to the farmer. A net-work of agro-economic industries, which will produce tractors, better implements, fertilisers and pesticides will be set up.

In areas where irrigation is difficult and rainfall scant, efforts will be made to conserve soil and moisture to raise drought-resisting crops and to develop pasture and animal husbandry. Agricultural

research will concentrate on the development of drought-resisting varieties for lands without irrigation or poor rainfall, and scientific studies on soil and water management.

By and large, the strategy to be adopted in the Fourth Plan is what it was during the 1940s. Increased fertiliser use, extension, improved practices, package programmes, Kharif campaigns, Rabi campaigns, credit and marketing, were the hall-marks of the Grow-More Food Campaign. The only new feature of the new strategy is the introduction of entirely new types of seeds.

There cannot be two opinions on the efficacy of improved varieties of seeds enhancing agricultural productivity. This, however, can be all the more effective if it is supplemented by appropriate doses of fertilisers and manures, improved implements, and, above all, the necessary irrigation facilities to the cultivators. We are convinced that an increase in the yield per acre can be achieved only through technological changes in agriculture.

WATER SUPPLY

The first essential item in our strategy for agricultural development would be improved water supplies. Farm management studies have shown that the output per acre of irrigated crops is higher than dry ones by margins ranging from 100 per cent to 400 per cent. Basing arguments on these findings, some maintain that if, on an average, irrigation can increase output by at least 200 per cent, the aggregate output will grow by 4 per cent a year. It is estimated that an acre of uncultivated land brought under irrigation will give an additional yield of 504 kgs of rice. Each filter point well is expected to irrigate 10 acres and additional produc-

tion resulting from this irrigation is estimated at half-a ton of rice an acre. Each oil-engine and each electric pump by irrigating a few more acres will also raise the yield per acre by half a ton.

It is often complained that irrigation potential created is not fully utilised. The ultimate beneficiaries are blamed for not having constructed field channels in time.

A substantial part of the unutilised irrigation potential is in areas with adequate rainfall but it will be far more rewarding to the country if irrigation facilities are provided more in the arid zones. In arid zones, the initial investment on irrigation could be certainly higher but it would be largely compensated by higher returns through the production of quality crops like cotton. The urgent need, therefore, is to extend irrigation facilities in the country at all levels, major, medium and minor.

FERTILISER USE

The fertility of soils in our country has been depleted due to continuous cultivation for a very long period. It is estimated that about 75 per cent of the soils are deficient in phosphorous and 25 per cent in potash. Organic manures are extremely essential for soil fertility but fertilisers give maximum return. As compared with farmyard manure, compost and other bulky organic manures, fertilisers can be transported easily. They give their constituents to the crops quickly and can be used in proportions necessary to meet the actual requirement of crops and different soils. An eminent authority, by analysing the index of farm output and the index of input of fertilisers between 1935 and 1958 in the U.S.A., has concluded that fertilisers were the largest single factor in increasing total crop production and probably accounted for almost one-half of the increase in crop yields during that period. We should take the cue from the U.S.A. in this regard.

During the Fourth Plan period, it has been tentatively fixed to keep the target of fertiliser consumption at two million tonnes in terms of nitrogen and one million in terms of P_2O_5 . The use of fertiliser per hectare of available land in India is roughly 4 kgs. This is very low as compared to international standards. There are, however, some difficulties in increasing the use of fertilisers. The acute shortage of domestic supplies is one of them. It is reported that supplies are not keeping pace with the level of consumption.

Another difficulty is the lack of irrigation facilities. Farmers usually fear that the use of fertilisers may adversely affect production in the absence of regular and adequate supplies of irrigation. Besides, fertilisers are costlier in India than anywhere else in the world. Again, there is no proper facility for providing credit to the farmer for buying fertilisers. In order to increase the use of fertilisers, firstly, domestic production has to be increased and secondly, the farmer has to be provided with better irrigation facilities and credit.

TRACTORS

As regards the use of tractors, India stands at the lowest position. On an average, only one tractor is available per 12,500 acres of land. In West Germany, the number works out to 33.3 acres, in the U.K. 106.4, in Denmark to 57.1, in Japan to 9.6, in France to 104.2 and in the U.S.A. to 217.4. The same is the case with other implements.

If the productivity of Indian agriculture is to be improved, the introduction of mechanical power is essential. However, mechanisation will be effective only if there is adequate irrigation and provision of requisite quantity of fertilisers and improved seeds.

WATER COOLERS IN TRAINS

As part of a drive to increase passenger amenities, the Railways have planned to provide water coolers in third class and sleeper coaches of some trains on a trial basis. At present, cold drinking water is being provided in containers in some of the first class corridor-type coaches and third class sleeper coaches.



QUOTATION BOX

He (Dr Husak) sincerely believes that good socialism can only be measured by one's attitude towards the Soviet Union.

—Kamil Winter

The (Arab) doctor whom I have mentioned said tersely: "we are most grateful to you, You have given tents to us and Palestine to the Jews." Just to get a reaction, I asked whether any huts or clinics had been given by the communist countries. He replied at once: "They give us guns—that is the best aid."

—Mervyn Jones

American journalism has many strengths—but good writing has never been one of them.

—Anthony Howard

The Naxalites and the Marxists are politically of the same genetic order. Naxalites

are like a cobra with the spread-out hood while the Marxists are like the cobra with the concealed hood.

—Panampith Govinda Menon

The reason why the Congress Working Committee adjourned before time last week was that the conference room was not air-conditioned.

—From "The Statesman"

On the question of the rush for admission to colleges, one wonders why the Department of Family Planning has not so far made any pronouncements. Only the other day, the newspapers reported that the Department of Family Planning had found the answer to the problem of unemployment. It has decided to subsidise 63 universities in the country to hold debates on the theme that the unplanned growth of the population is responsible for the growth of unemployment...Why don't the administrators in Delhi, harassed by the young people seeking admission to colleges, hide behind Dr. Chandrasekhar and say that Nirodh is the answer to our educational predicament?

—V.V. John

Jhund-Kandla Railway Line

THE 231-kilometre Jhund-Kandla broad gauge line on the Western Railway is likely to be completed on schedule in October this year. The line is being constructed at a cost of Rs 16.33 crore. Work on it began in 1964.

With the development of Kandla as a major port and the striking of oil in Cambay, there were serious bottlenecks on the metre gauge route to Kandla via Rajkot-Viramgam. To meet the situation as also the expected increase in traffic envisaged during the Fourth Five Year Plan, it was decided to take

up the construction of the Jhund-Kandla line.

The construction involved a difficult crossing in the Rann of Kutch and the conversion of the Halvad-Dharangadhara portion from metre gauge to broad gauge. For the construction of the embankment and the bridge across the Little Rann of Kutch, which is marshy and remains flooded for six months in a year, special techniques had to be evolved in consultation with the Central Road Research, Institute, Delhi, and the Research, Design and Standards Organisation, Lucknow.

Survey of a Gram Panchayat in West Bengal

D.R. Sarkar & S.N. Nanda

THE Panchayati Raj Act was passed in West Bengal in 1957 but the Panchayati Raj institutions were established in the State between 1957 and 1964.

A pilot study was undertaken by the authors in 1967-68 in the village of Palasy in the Barrackpore subdivision of 24 Parganas district on the peoples' reactions to the working of the Gram Panchayat.

Eighty per cent of the people held the view that the primary objective of a Gram Panchayat should be to take initiative to increase food production in the village. Social and economic development should come next in importance.

Eight out of ten people felt that the Panchayats should take interest in providing irrigation, fertilisers, improved seeds, plant protection measures, godown and credit facilities. Other factors relating to crop production like consolidation of holdings, and fodder cultivation might be taken up by the Gram Panchayat in the second phase of the programme. Village industries should be developed and existing cottage industries revived.

As the Panchayat is a non-official representative body, about eighty per cent of the people felt that it should function in a democratic manner under the Gram Adhyaksha and Anchal Pradhan. It needs to be strengthened organisationally and functionally for playing an effective role.

The Panchayat elections have brought up a new pattern of rural leadership. But about 50 per cent of the people of Palasy were of the opinion that these new leaders were no better than the previous leaders of the District and Union Boards. Majority of the leaders were from

middle class families. They functioned more or less in the same manner as the members of Union Boards.

As a result of the survey the authors found that the Gram Panchayat of Palasy was working in isolation. It had hardly any association or influence over the other development agencies like village co-operatives, clubs and schools. Even though the Gram Panchayat was reported to have some connection with the Gram Sevak, his services were not properly utilised.

Nine out of ten people reported that the Gram-Panchayat could not possibly work more effectively because different political parties tried

to strengthen their party positions using the Panchayat as their platform.

Feuds and conflicts were mentioned as constant features of Gram-panchayat meetings resulting in more discussion and less work.

All the family heads said that they were not aware of any village production plan or any other development plan for the village as part of the Panchayati programme.

The authors have come to the conclusion that both in agriculture and village industries, the Gram Panchayat must take initiative which it is lacking at present.

LETTERS

Savings Is All-important

B. Satyanarayan's article entitled, 'More Mechanisation Cannot Guarantee Higher Growth Rate' (*Yojana*, February 9, 1969) and Kamala Subramaniam's comment (*Yojana*, April 6, 1969) left me more puzzled than ever.

Miss Subramaniam, starting from the fact that planned savings must be equal to planned investment so as to prevent inflation, seemed to be on the correct path, but eventually, when she proved that savings was not the all-important factor behind an economy's development, she seemed to have muddled herself over two divergent issues.

The fact that planned savings be equal to planned investment, is but an equilibrium condition and cannot exist whenever there is disequilibrium in the economy. A process of rising prices as is observed in most developing economies, suggest that equilibrium in the product market do not exist—as a result of which planned savings cannot be equal to planned investment.

What is true is the savings—investment identity. In real sense, however, savings and investment are necessarily equal—the economy being in equilibrium or not. It is only in equilibrium—that planned

savings, planned investment, real savings and real investment are equal to each other.

Thus taking for granted that the real savings in the economy rise, through a rise in the marginal propensity to save of individuals (after all, a sum total of individual savings amount to national savings), real investment must increase by the same amount, and provided that full employment has not been reached at, this must necessarily cause the income to rise—and through it the level of employment and output. That a rise in investment will cause a rise in income may be seen from the investment-income multiplier. A rise in investment by the amount Δ^1 would cause a rise in the level of income (Δy) by the amount $\Delta I \cdot \frac{1}{s}$, being the marginal propensity to save. However, it may be noticed, that a rise in the marginal propensity to save, would cause Δy to diminish but definitely not y (the national income). National income continues to rise, only the rate of change of the changes in income, following a rise of savings, (and hence investment) falls.

Thus for an economy's development, so long as full employment is not reached, savings will continue to play an all important role. However, by the term savings, I do not mean hoarded wealth, but growth of investible funds, whose propagation would gear the economy's path to progress.

PROBIR KUMAR DHAR

Jadavpur University,
Calcutta

Family Planning in Tamil Nadu

Report by

S. V. RAGHAVAN

Our Madras Correspondent

TAMIL Nadu has done uniformly well in the past several years in pushing up the Family Planning programme. The programme has made a perceptible impact on the people through sustained education and publicity. All the known methods of population control have gained popularity. Nearly eight lakh sterilizations have been performed so far; IUCD insertions during 1968-69 were nearly 24,000 showing a two-fold increase over the previous year. For outstanding work in the field of Family Planning, Tamil Nadu was presented the National Award in 1961-62 and 1962-63 and again in 1965-66 and 1966-67. All this has been possible through a well-knit field organisation comprising hospitals, primary health centres, urban Family Welfare Planning centres, rural Family Welfare Planning centres and a number of voluntary agencies.

There are, however, certain "pockets" where the campaign has to be intensified. As one goes round and talks to people in these areas, one comes across very interesting reactions and responses. The parents listen to Family Planning talk and without being cynical they reveal some very interesting attitudes.

First of all, most of the people of the lower income brackets and the none-too-literate feel that much of the current Family Planning campaign, especially through the printed word, continues to be addressed to the upper classes. Take for instance, the newspaper supplements and the large volume of pamphlets and folders. These mean very little to them, for they hardly get across their very limited com-

prehension, more so of their womenfolk, who must first be convinced.

These people say what may be true of the higherups in the social scale does not necessarily apply to them. With them quite the contrary factors seem to operate. Unlike the upper classes who are reluctant to have large families due to economic compulsions and social standards, these people have some very well-defined motivations for a bigger family. The most important of them is that when their children grow up, they help their parents in the farm and the field. They also do quite a lot of work at home for their elders. Later, they are also able to contribute in their small way to the total income of the family. The girls too share the burden to a great extent.

Another powerful motivation for a bigger family is the fear of child deaths. One would hear it often argued by them that the fewer the children, the greater is the risk of family depletion through deaths. As an experienced woman doctor of a private hospital doing much valuable work in this field near Madras observed, "we have no right to sterilize a mother unless we can offer her a reasonable guarantee of the life of her children."

Added to these economic and social factors, there are the age-old superstitions and prejudices which die hard. It is a situation in which, while there is wide appreciation of the need for smaller families, powerful factors are still hampering greater success of the campaign.

The Tamil Nadu Government has been tackling these "pockets of resistance" with measurable success. For quicker results, however, the need for mounting the drive more intensely cannot be overstated.

A FAMILY PLANNING FLEET

To reach family planning facilities to even remote villages in the country, the fleet of the vehicles used by the Government for the purpose is being increased by 1540 in the current year. An Indo-American agreement concluded recently has provided for a grant of Rs 6 crore from the U.S. Government for the purchase of these vehicles and for meeting their operation costs during the next three years.

The addition of these vehicles will increase the mobility of doctors, nurses and others engaged in the family planning programme.

Some of the vehicles will be used as mobile clinics for sterilisation and loop insertion. A few of them will be used for mobile exhibition and for showing films in the villages.

Stronger concrete

American researchers have developed a stronger concrete by combining conventional concrete and plastic. The new material, called concrete polymer, is four times stronger than ordinary concrete. It is highly resistant to abrasion and freeze-thaw damage and nearly 100 per cent resistant to corrosion.

The concrete polymer has been developed by the scientists of the U.S. Atomic Energy Commission and the U.S. Bureau of Reclamation.

Concrete polymer is made by placing ordinary hardened concrete in a vacuum and soaking it in a chemical such as methyl methacrylate. The mixture is then irradiated with cobalt-60 for several hours. Interconnecting voids make up about 14 per cent of ordinary hardened concrete. This allows thorough impregnation by the monomer, which upon polymerisation results in four times more tensile and compressive strength.

Because the voids are filled with plastic, water permeation is reduced to a negligible level. Abrasion and erosion resistance is four or five times greater.

A Village with Only Two Radio Sets

THOUGH Akbarpur is within walking distance from Karimgunj Town in Assam, few guardians are willing to send their wards to schools and colleges in town as nearly 90% of the people here are "satisfied" with the facilities available locally. The four lower primary schools are 'deserted' because the teacher and the taught seldom meet and the premises are entirely uncared for.

Adult literates are even fewer. This explains the lack of enthusiasm and motivation in the area, which is hardly a kilometer away from the East Pakistan border.

Its proximity with a town, one might think, could have made the village growth-conscious. But according to a survey undertaken by the Planning Forum of Karimgunj College the conditions are none too encouraging. The village has given up joint family system as only 10% households were joint families. The average size of a family is seven. Seventy per cent of the population is totally indifferent to or even ignorant of family planning drive. Some people vehemently opposed the idea of family planning. Many thought they needed a large family to provide workhands on the farm. The birth-death ratio during the last 10 years has remained at 1:0.4081.

Though agriculture is the main source of livelihood, nearly 90% also have some other means of income. The more common of these are fishing or labour. The predominant community is that of 'Maimal' muslim fishermen. The standard of living is very low. The highest annual per capita income is Rs 1500, and the lowest Rs. 40. Most dwellings are 'Kuchcha' houses. Out of 139 families, only two had radio sets. While the

general level of health is good, malnutrition remains a characteristic complaint of the rural population. The villager's attitude towards Panchayati Raj is one of total opposition. They seem to question its utility. Similarly, they are not yet given to the idea of using chemical fertilisers. They have queer notions and fears regarding the use of fertilisers. They, for instance, think that chemical fertilisers destroy the quality of the soil and affect the grain produced.

They are also not yet converted to the idea of village co-operatives which they feared helped only big farmers and not the small man. Nearly 83% families are in debt and yet no headway has been made in the field of co-operation. All these attitudes together explain the economic, agricultural and educational backwardness of the village. Obviously, a good lot of publicity is needed to change their stiff attitudes.

One bright aspect about Akbarpur is that it is free of litigations which is a characteristic of Indian villages. The Akbarpur rural scene, from all accounts, provides a big scope for all round development effort.

Assam's Paddy Protection Campaign

An aerial operation against Rice Hispa is being carried on in the North Lakhimpur Subdivision of Assam. Undertaken by the State Agriculture Department in collaboration with the Directorate of Plant Protection, Government of India, the operation is mostly confined to the hibernating areas and the areas covered by standing Ahu crops. The spraying has been done in nearly 4,000 acres of land and another 7,000 acres will shortly be brought under operation.

The operation will save about 2 lakhs quintals of paddy.

Panchayats Make Headway In Haryana

THE Panchayats in Haryana earn an annual income of Rs 80 lakh from 8,17,842 acres of land in their possession. The non-cultivable areas are utilized by the Panchayats for providing much-needed amenities in their respective areas such as schools, hospitals, dispensaries, manure pits, panchayat ghars and roads. For the Fourth Plan period a sum of Rs 15 lakh has been provided for expenditure on revenue-earning schemes.

The total income of the Panchayats from all sources amounts to Rs 2 crore per annum.

During the last year the panchayats spent Rs 57.57 lakh on education, Rs 54 lakh on public works, Rs 25.90 lakh on public health, Rs 6.26 lakh on agriculture, Rs 1.99 lakh on animal health and over Rs 27 thousand on industries.

The panchayats are also tackling the problem of providing drinking water. So far, 122 schemes at a cost of over Rs 72 lakh benefiting 299 villages have been completed. The maintenance cost on these schemes during the current financial year is estimated to be around Rs 10.10 lakh, which will be borne by the State Government.

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Development Diary

● The fourth and last power generator at the Ranapratap Sagar Dam in Rajasthan has been commissioned. This brings the total generation of power at the project to 172 megawatts.

● The foundation-stone of a 250-bed hospital has been laid at the Mohannagar industrial complex at Ghaziabad. The Rs 50-lakh medical project includes a nurses training college and kidney-heart research centres.

● The first consignment of 7,500 tonnes of rails produced at the Bhilai Steel Plant, for South Korea, has been shipped from Vishakhapatnam port. South Korea has placed an order worth Rs 4.5 crore with the Hindustan Steel Limited.

● In West Bengal, 22 villages in Cooch Behar district have earned the distinction of wiping out illiteracy during the last six months. In each village 10 to 15 literacy centres were organised.

● The Tiruchi Plant of Bharat Heavy Electricals has secured an order from Poland for the export of valves valued at Rs 4 lakh. Poland will be importing these valves for the first time for use in fertiliser, chemical and other industries.

● A new variety of maize with protein content higher than that of milk has been developed by the Indian Agricultural Research Institute.

● The Durgapur Alloy Steel Plant has started production of a special type of chromium steel, required for atomic power plants. It was so far imported, mainly from Canada. The plant has already supplied about seven tonnes of it to the Rajasthan Atomic Power Project.

● For the first time, a completely India-made fibreglass motor rocket using indigenously developed new high energy propellant has

been successfully flight tested at Thumba. Experts hail this experiment as an important landmark in India's self-reliant programme for launching satellites during the next few years.

● Baroda will be the first city in the country to get natural gas directly from oil fields through pipelines. The gas would be supplied from the Ankleshwar oil fields. The laying of pipelines would begin next month.

● Two expansion plants for the production of urea and ammonia have been commissioned at the Gujarat State Fertiliser Factory near Baroda. The urea plant producing 800 tonnes of urea per day would be the largest plant of its kind in the world.

● Mysore Sandal Oil Factory has earned Rs 1.70 crore in foreign exchange from sandal oil exports during 1968-69.

● A Rs 22 lakh modern cattle feed factory, the first of its kind in the State, has been commissioned at Aarey milk colony in North Bombay. It produces about 100 tonnes of cattle feed a day.

● Assam's first distillery at Dergaon has gone into production. Set up in the co-operative sector at a cost of over Rs 12 lakh, it will finally produce 2000 gallons of industrial alcohol a day.

● In Himachal Pradesh, the public sector Resin and Turpentine Factory at Bilaspur has gone into production. Built at a cost of Rs 36 lakh, the factory has an annual capacity of nearly 8,000 tonnes of resin and 14 lakh litres of turpentine.

● India's export of cashewnut kernels to the Soviet Union has gone up steadily during the first four months of this year. It was almost twice that of the corresponding period last year. During January to April this year, the Soviet Union imported over

10,000 tonnes of Indian cashew kernels.

● The foundation stone of Northern India's first cine city has been laid at Mohan Nagar near Delhi. The 250-acre-movie land complex is expected to be ready by 1971. It will provide production and processing facilities for outdoor and local shooting to Indian and visiting foreign film production units.

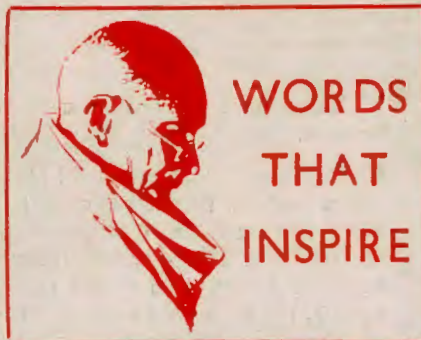
ORE PRODUCTION AT BAILADILA

BAILADILA iron ore deposits have started yielding rich dividends. The single mine for Deposit No. 14 contributes about 16 per cent of India's total iron ore exports. It earns foreign exchange worth about Rs 28 crore. The Railways' receipts from transporting the ore reach a figure of Rs 13 crore. The port of Visakhapatnam receives Rs 4 crore from handling the ore despatch. The national exchequer earns Rs 6 crore by way of export duties and interest on borrowings from Government.

By 1973, when Deposit No. 5 is commissioned, the Bailadila mines will be contributing about 35 per cent of India's total ore export trade, earning Rs 56 crore in foreign exchange. With Deposit No. 4 also going into production, the foreign exchange earnings will reach Rs 100-crore-mark. The mine now under production yields 5.5 million tonnes of the ore. By 1972-73, with the commencement of the exploitation of Deposits No. 5 and 4, the production will go up to 17 million tonnes. The world iron ore trade has gone up from 60 million tonnes in 1952 to 225.5 million tonnes in 1967. India's aggregate iron ore trade has made comparable strides. From almost negligible, it has gone up to 13.5 million tonnes.

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According to me, the (ideal) economic constitution of India and, for the matter of that, the world, can be universally realised only if the means of production of elementary necessities of life remain in the control of the masses. These should be freely available to all as God's air and water are or ought to be; they should not be made a vehicle of traffic for the exploitation of others. Their monopolisation by any country, nation or groups of persons would be unjust. The neglect of this simple principle is the cause of the destitution that we witness today, not only in this unhappy land but in the other parts of the world too.

The economics and civilisation of a country, where the pressure of population on land is greatest, are and must be different from those of a country where the pressure is least. Sparsely populated America may have need of machinery. India may not need it at all. Where there are millions upon millions of units of idle labour, it is no use thinking of labour-saving devices.

My views on national planning differ from the prevailing ones. I do not want it along industrial lines. I want to prevent our villages from catching the infection of industrialisation. American exploitation has added to the moral height neither of the exploited countries, nor of the exploiting country. On the contrary, it has impeded

their march towards spiritual progress and deadened America's real spirit of philanthropy. A phenomenon like the one that America witnessed cannot happen in India. I mean the destruction of tonnes of sugar and other agricultural products.....

When production and consumption both become localised, the temptation to speed up production, indefinitely and at any price, disappears. All the endless difficulties and problems that our present day economic system presents, too, would then come to an end...

I heartily endorse the proposition that any plan, which exploits the raw materials of the country and neglects the potentially more powerful man-power, is lopsided and can never tend to establish human equality.

True democracy cannot be worked by twenty men sitting at the centre. It has to be worked from below by the people of every village.....

In the religion all men are equal. Learning, Intellect, or riches do not entitle one to claim superiority over those who are lacking in these. If any person is suffused and sanctified with the purifying essence and the discipline of true religion, he regards himself under the obligation to share his advantages with those who have fewer...

Bravery does not mean brow-beating others. He is not a brave man who uses his strength to terrorize others. The brave man is he who, though possessing strength, does not use it to intimidate others but, on the contrary, protects the weak...

He alone may be said to be firm in his *dharma* who trusts his safety to God and untroubled by anxiety, follows the path of virtue...

Gandhiji

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