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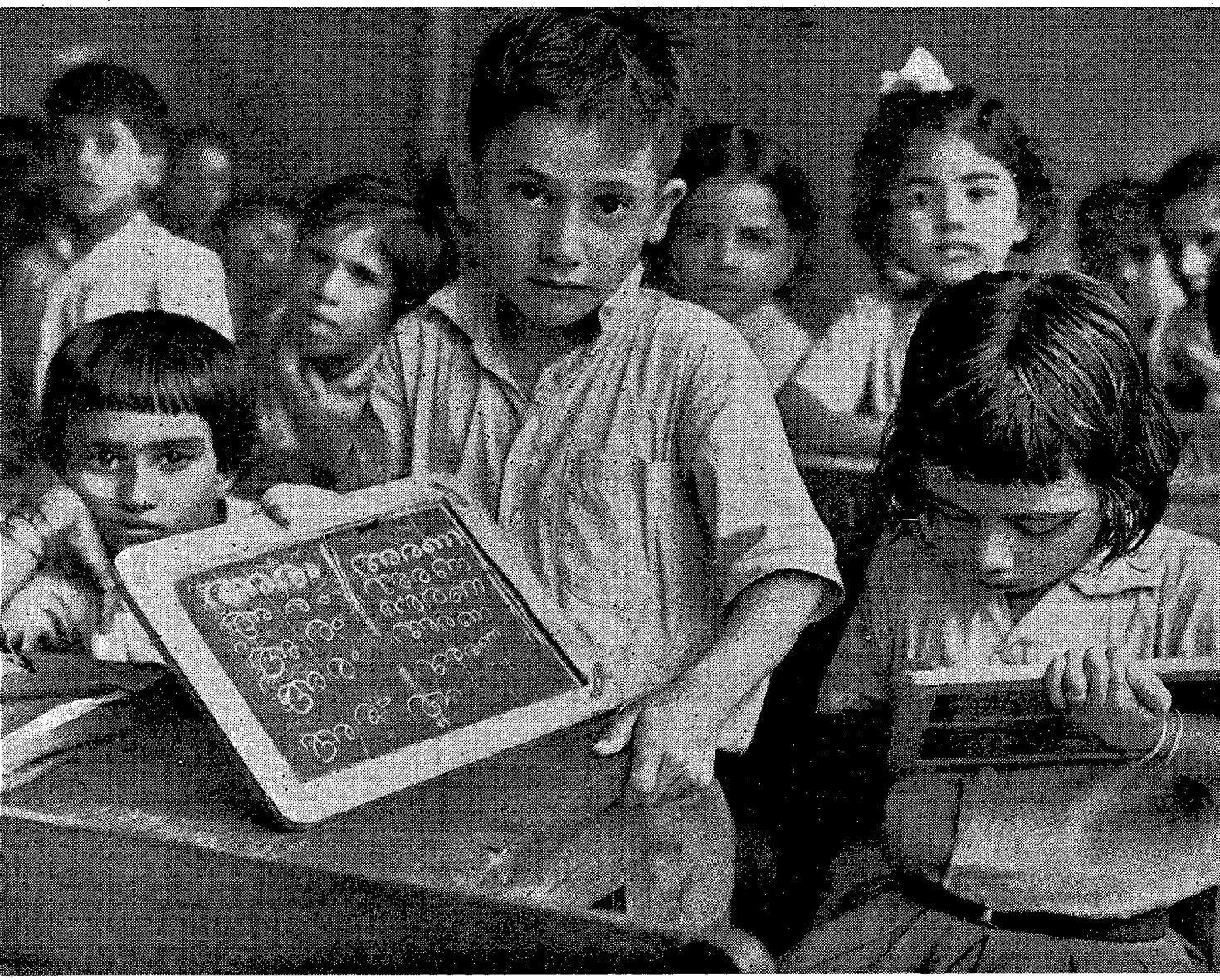

Other Tongue Is His Mother Tongue

DEVELOPMENT COUNCIL DECISIONS

"The Politics of Poverty" By Asoka Mehta

25 PAISE

ABOUT YOJANA

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

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Cover—Story above.
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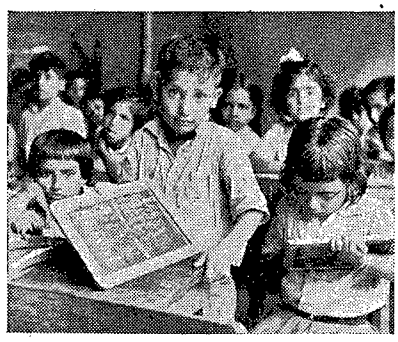

Other Tongue Is His Mother Tongue

WITH a little slate pencil, a little boy is innocently making history. Five-year-old Umesh Chander from Uttar Pradesh is learning his three Rs through a South Indian language in Delhi.

Umesh Chander goes to the Kerala Education Society Higher Secondary School in the Capital, started ten years ago to teach Malayalees in their mother-tongue. The school's Principal, Mr P.I.A. Karim, is all praise for the boy's father, Mr Bachchi Ram Joshi of Almora, for giving the school this privilege.

"We told him we teach in Malayalam in the primary classes", says the Principal, "but the father insisted on admission. He wants the boy to learn in Malayalam. The boy has none to help him in his home work."

It is hard to spot Umesh Chander amidst the small class of Malayalee children. Mrs M.P. Radhakumari, the class teacher, said he mixed well with the rest.

"We have only to explain Malayalam words in Hindi and he picks up. And he writes without any difficulty," said Mrs Radhakumari. "He is a bright boy. He counts one to hundred in Malayalam upwards and downwards. There is nothing strange about it. He is interested and is intelligent," said Mrs K.N. Devasena, the arithmetic teacher.

The three-language formula wants Hindi children to learn a South Indian language. Little Umesh has done one better. He is making a South Indian language his very medium of knowledge.

—**R.K.P.**

NEXT FORTNIGHT

"Loop" Around Delhi—Picture Feature

★

le Corbusier—Bijit Ghosh

★

Population Policies—Lt. Col. B. L. Raina

★

N. D. C. Report

YOJANA

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DEFENCE THROUGH DEVELOPMENT

It was inevitable that Pakistan's aggression should cast its shadow over the two-day deliberations of the National Development Council at its twenty-second meeting. The resolution adopted by the Council refers to the challenge of serious external threats. This is the altered context in which the nation "has to undertake massive efforts for development". Greater defence preparedness calls for higher production. And out of whatever is produced—food, clothing, iron and steel, transport vehicles and so on—more will be diverted to meet the needs of defence. This greater effort will have to be made in such a way that it does not give rise to any inflationary financing.

Already, the nation's leadership had considered the outlines of the Fourth Plan at various levels and in different stages. A consensus had slowly emerged about the size of the Plan and its contents. There was agreement over the means and methods by which the necessary resources were to be raised. Here each has to play its part—the State and Union Governments, the private sector, the public sector undertakings and local self-governing institutions. There is a common desire to attempt more than a Rs 21,500-crore plan, if the economy shows further buoyancy and the resources look up. For the present, the National Development Council has set its seal of approval on the Rs 21,500-crore plan.

Superimposed on the discussions regarding the content and implementation of the Fourth Plan proposals is the urgency to give defence orientation to our aspirations in the economic and social fields. NDC took a major step by way of clearing the decks for this task. It decided that certain norms and policy considerations should govern the way we raise resources and spend them. Time is past when the country could afford the enfeeblement and erosion of tax laws and collection of dues on account of inadequate enforcement.

Leakage of revenue has to be prevented in other areas as well, particularly in the working of public sector enterprises. Here capacity should not remain idle, operating costs should be reduced, interest charges raised to the going rates, and capital costs covered by proper pricing policies. Administrative expenses—if not justified by functions to be carried out and results to be obtained—should be kept down. In no case should they grow at more than five per cent a year. Procedures should be simplified, delays avoided. Non-Plan expenditure should be scrutinised with thoroughness and not allowed to go up at more than $3\frac{1}{2}$ per cent in the year.

The nation has to adhere to this programme of maximising resources and cutting out waste and delay. In a changing situation, it has to arrive at correct judgments on the relative priorities of claims against the national product. Once their order is determined, there remains the technical task of selecting the right methods of financing and organising them. In this context, it is good to remember that the burden of defence or development on the economy is not lightened by transferring expenditure from States to the Centre, or even for that matter, from public to private funds. In essence, the burden does not go up or alter when the people are made to pay for medical care or education through taxes instead of by fees.

In the past fortnight, our discussion on methods of planning and objectives of implementation has imbibed a new sense of stark simplicity: national survival has a claim prior to both welfare and growth. Yet, as Pandit Nehru used to say time and again, the country is at a happy stage of growth where building in defence potential goes hand in hand with economic development. If there are factories to make tractors for agriculture, it is easier to build tanks. The chemical industry can throw up man-made fibres as well as explosives. An efficient transport service can move food grains to the right place at the right time; it can also carry defence supplies. National survival cannot come without self-reliance—so the nation must push up exports the better to be able to pay its way internationally. Domestic products should quickly take the place of imported machinery, metals and fertilisers.

Or, one can have a look at education and manpower planning. The Prime Minister has spoken of the need to plan our educational programmes in such a way that they do not add to unemployment and frustration. Emphasis should be on educational developments which add to the output in field and factory. Our plans have to be so drawn as to increase the number of technicians and technologists, to train skilled workers and to improve labour mobility. At the moment, there is no shortage of manpower. But as our family planning programmes gain in their countrywide impact, married women who have already had a couple of children can join the labour force and work, at the very least, as part-time teachers. They can also become skilled workers who do not have the hard grind of manual labour.

This week's meeting of NDC has created a new sense of endeavour and dedication. It is in order to safeguard the country's security and long-term interests that the National Development Council has authorised the Chairman—that is, the Prime Minister—to reorientate the Plan as necessary. Whatever the rigours and deprivations, the nation is prepared to face the challenge. This challenge is as much economic as military. As the deliberations of NDC indicate, it is being faced in common by the whole country.

"QUICK" ESTIMATES FOR 1964-5 SHOW A GOOD YEAR

National Income Up 7.3 per cent

THE national income of India *in real terms* rose by 7.3 per cent during 1964-65.

This order of increase at constant prices is heartening news, since it is as high as that recorded during 1960-61, which was the highest since 1948-49.

This is a "quick" estimate. The Central Statistical Organisation, the department which calculates the national income, releases the "quick" estimate as soon as possible after the completion of the financial year (April 1—March 31) and the agricultural year (July 1 to June 30).

The "quick" estimate has necessarily to be based on partial data. It is provisional. (A revised estimate follows later). The idea in issuing the "quick" estimate is to give a quick and approximate appraisal of the performance of the entire economy in the preceding year at real terms, that is, at constant prices.

The constant price estimates provide a measure of the increase in production of goods and services in physical terms and are not affected by increase in price level during the period. They are of crucial importance in arriving at economic and planning decisions.

The increase of 7.3 per cent in 1964-65 shows that the growth tempo in the Third Plan increased considerably in the fourth year. In the first three years the increases were 2.6 per cent, 1.9 per cent and 4.5 per cent. This gives an average of 4.1 per cent for the four years of the Third Plan.

The extent of rise or fall in national income depends in a large measure on the performance of the agriculture sector which contributes about 45 per cent of the national income. It is a sector which is subject to the whims of the monsoon. During the years 1961-62 to 1964-65 the percentage increases in the total national income and the income from agriculture sector at constant (1948-49) prices were 2.6 as against 0.2, 1.9 as against a fall of 2.1, 4.5 as against 1.9 and 7.3 as against 9.2 respectively.

Another important sector in the estimates of national income is mining and factory establishments (which registered an increase of 5.9 per cent in 1964-65). Increases in the industrial production are directly reflected in the constant price estimates for this sector. Good performance in this sector sometimes offsets the mediocre or bad performance of the agriculture sector thus reducing to some extent the effect on the overall trend.

The other sectors in the classification are communications, railways, organised banking and insurance, other commerce and transport and other services. Of these, other commerce and transport contributes about 12 per cent and other services about 18 per cent of the national income. During 1964-65, the percentage increases recorded in the above mentioned sectors were 13.0, 2.9, 7.4, 5.9 and 5.6 respectively.

Going back to agriculture, the value of output in agriculture (proper) increased by about 10.2 per cent which was due to an increase of 5 per cent in the production of rice and large increases of about 20 to 25 per cent in most of the other important crops.

In the case of mining and factory establishments, the combined increase for both mining and factory establishments, does not give a correct indication of the performance in each sector. For instance during 1964-65 (which relates actually to the calendar year 1964) the increase in income from mining has been very small (1.5 per cent) and that from factory establishments 6.3 per cent. If mining also had registered a good increase, the overall contribution would have been much higher.

The contributions of individual sectors to overall percentage change in real income during 1964-65 were as follows:

Sector	*Percentage contribution to total national income in 1963-64*	*Percentage change in 1964-65 over 1963-64*	*Contribution to the overall percentage change in 1964-65 over 1963-64*
Agriculture (proper)	35.9	10.2	3.7
Mining and Factory Establishments	10.5	5.9	0.6
Communications	0.6	13.0	0.1
Railways	2.7	2.9	0.1
Organised Banking & Insurance	1.2	7.4	0.1
Other Commerce & Transport	15.4	5.9	0.9
Others	33.7	5.6	1.9
All Sectors	100.0	7.3	7.3

The following table presents the estimates of national income and per capita income at 1948-49 prices for the years 1950-51, 1955-56 and 1960-61 to 1964-65:

Year	*National income at 1948-49 prices (Rs 100 crore)*	*Per capita income (in Rs) at 1948-49 prices (based on 1941, 1951 and 1961 population census figures)*
1950-51	88.5	247.5
1955-56	104.8	267.8
1960-61	127.3	293.2
1961-62	130.6	294.3
1962-63	133.1	293.4
1963-64*	139.1	294.8
1964-65@	149.3	314.4

*Preliminary @Quick

DIMLY AWARE OF THE PLAN

But Keen on Fertilisers

THE majority of the people of a village in Andhra Pradesh, with a 75 per cent illiterate population, favoured family planning and girls' education, but were against dowry, prohibition, and untouchability. The village is Hukumpet, where a socio-economic survey was conducted in February.

Out of the 388 families surveyed by the Rajahmundry Government College Planning Forum, about 75 per cent had annual incomes of Rs 500 to Rs 1,500. The average per capita income of the village was only about Rs 200. Most of the families were in debt. A fourth of the families saved small amounts, which they kept with them, and did not put in post office or banks.

Though the village, which is eight miles from Rajahmundry, got electricity a few years ago, there was no small industry or cottage industry using power at the time of the survey. The people were only dimly aware of the five year plans. They were not satisfied with the distribution of fertilisers through the panchayat.

The bottom 30 per cent of our people together earn only as much as the top one per cent. The poor have a greater need of planning than the privileged. When scarcity rules the people, the need for a clear focus, deeper understanding, collective discipline and dedicated leadership is inescapable.

THE POLITICS OF POVERTY

ASOKA MEHTA

Feroze Gandhi, in my recollections, is inextricably mingled with another comrade of ours in the freedom struggle, Yusuf Meherally. Both had in them the wonderful gift of friendship; both could charm and still the disturbed waters of one's being, and evoke the best that we may have to offer; both were snatched away by death just when they were poised for great undertakings.

I have been asked to weave a garland of words to pay our tribute to Feroze. I have chosen as my theme "Politics of Poverty" because he was steeped in politics; his metier *was politics, and his politics was of the poor and for the poor. He was wedded to basic transformation, peaceful yet decisive change of our stunted economy and eroded society. He was a leading partisan of the revolution by consent that our democratic politics envisage, and in it he got his bearings from his identification with the poor, those without any privileges.*

It is not often that the words of the poor, emerging out of the bowels of their poverty, are captured in their glowing authenticity. Recently, however, I came across a book, *Child of the Dark*, written by a slum-dweller in Sao Paulo. In that opulent city, the articulate outcaste cries out in her despair,

> "Brazil needs to be led by a person who has known hunger. Hunger is also a teacher.....Those who govern our country are those who have money, who do not know what hunger is, or pain or poverty".

This searing prayer of Carolina Maria de Jesus has been answered in our country: we have as Prime Minister a person who has known hunger and poverty, who has had them as his teachers. We may, therefore, talk with some confidence about the politics of poverty.

In fact concern with poverty has been at the heart of our politics ever since the days of Dadabhai Naoroji. A principal justification of our national liberation movement had been the aggravation of poverty that foreign rule brought about by the drain of our resources and its inability to remove the squalor and want of centuries.

Our poverty, however, is not merely of the body. It is at once a poverty of spirit, body and mind, having its roots in our social system, our economic apparatus and our culture. Our situation borders on desperation because these three different roots of poverty have interacted and reinforced one another.

The poor have rarely found entry in the corridors of power. In the Old World, the poor, for countless centuries, were totally excluded from the processes of power. In the New World, the expanding frontier was the one escape available to the energetic among the poor. The vast mass of the people in any country, before industrial transformation is brought about, are the rural poor. They naturally hunger for land and have often turned against the landlords; they have yearned for

Feroze Memorial Lecture delivered in New Delhi on September 8, 1965.

expanding credit and distrust bankers and merchants. The money changers, throughout history, have fattened on the misery of the poor. The poor have only one vested interest; it is the vested interest in change.

The Jeffersonian vision of a rural democracy, of self-sufficient agriculturists, owning their homesteads, has often inspired national leaders. But such a society implies a vast expanse of arable land capable of taking care of not just the existing population, but also of its future growth. Where land is limited, diminutive farms, even if they could be carved out, would not open up any dimension of change. Growth potential has to be coaxed out of the economy, if social transformation is to be ensured.

The thrusts of technological change cannot be held back; even in Jefferson's America, arcadian life faded before it bloomed. Where the pressure of population on land was heavy and kept growing, and technological possibilities leading to economic diversification had not yet opened, ideal communities were thought of in terms of the immense out-pouring of moral energy of men. Today, it seems possible to work out social and economic transformation without demanding abiding presence of moral incandescence in every person.

Karl Marx saw the emancipation of man at the end of the road travelled by industrial growth and economic change. Where these changes had already occurred, he demanded socio-political changes, and where they were yet to occur, he sought political upheavals that would sponsor the missing economic growth. In the former case, it could be a dictatorship of the proletariat involving the dominance of the many over the few; in the latter case, it has invariably proved to be the tutelage of the many by the few.

Reweaving the Fabric of Existence

When the poor are given democratic powers, will they end up with the accent on distributive justice and acquiescence in economic stagnation? Or will they trigger growth with the other changes that they seek? Aneurin Bevan was sceptical of industrial efflorescence emerging through government by consent. His words were,

> "It is highly doubtful whether the achievements of the Industrial Revolution would have been permitted if the franchise had been universal. It is very doubtful because a great deal of capital aggregations that we are now enjoying are the result of the wages that our fathers went without."

If politics of poverty has any potency it would seek to narrow the gulf between the rich and the poor—always wider in undeveloped countries than in the developed countries. Will it also strive for the accumulation of capital (always painful) to initiate and push through structural changes in the processes of production themselves ? Are the poor solely concerned with the *relations* of production, or, also, and even more, with the *forces* of production, whose suppression in the world of today is a greater crime against the poor than the embedded inequalities?

Very few nations are willing to face these elemental challenges. Ours is among the select and the most exposed. Through our action and our understanding we are weaving new patterns in the tapestry of history.

There is no escaping for any country from the stress and thrust of transformation. That requires conscious and determined leadership, whether the process is democratic or otherwise. The main task is to correct the *imbalances*—for example, between population and resources, between educated men and the jobs available to them—and that requires the assertion of *will* and *capacity* in the society. It further demands activisation and energisation of the people. Where the process is democratic—if it is not another name for apathy—the leadership will have to evince deeper dedication and the people greater understanding, in brief, profounder commitment.

With other developing nations, we have reached the stage where, in the words of Robert Heilbroner, *The Great Ascent* has to be mounted. It, in fact, involves in a decade or two

> "nothing short of a pervasive social transformation, a metamorphosis of habits, a wrenching re-orientation of values concerning time, status, money, work; an unweaving and reweaving of the fabric of daily existence itself".

Nation after nation has faced the task of transformation with varying degrees of awareness and purpose. As years have gone, what could have been attempted through *incremental* changes, that is accelerated changes, but along the same lines, have given place to *structural*, or fundamental, changes—where the known dimensions themselves have to be altered. We have now reached a further stage, where *constant changes* have to be accepted and absorbed. The whole concept of stability is thus revolutionised. *That society alone is stable that develops capacity to live with change.* In a recent study of Russian Radicalism and Revolution, *Sons Against Fathers*, E. Lampart sketches a certain profile of mind and spirit that is wholly relevant :

> "The situation of the new radical rendered him more rootless, more mobile than his predecessors of the forties. Alike by conviction and origin he had no feeling for his society and was not a part of it, although the paradox of his situation is that he was concerned with the social problem to the exclusion of everything else. He inherited nothing, not even his personality, which he had, as it were to create anew. He detested conventions and hierarchies, the careers and opportunities, and all the stuffy pomposity of life. Everything in his condition led him to sunder the secure, comforting bonds of custom and familiarity. His tendency to prickliness when confronted with examples of entrenched superiority, or contempt for what he considered to be more airs and graces rarely sprang from private resentment. He had no wish to find a niche for himself in the prevailing class structure .....To be more accurate, he was bent on creating a new society, not on gate-crashing ideologically or convivially, the old one, which he believed to be doomed."

This radical approach is essential to revolution. We need to recapture, rediscover, in the circumstances

of social transformation, the mood that inspired us during the heroic days of the national movement.

Bread and Other Things Too

It might be argued that politics of the poor is simple —theirs is the quest for bread. In our conditions, the ineluctable fact is that either we do not get bread at all, or we get bread and other things too. Bread, to use a convenient symbol, is plentiful only when agriculture is bountiful. Within the traditional confines of agricultural production, the possibilities of growth are limited, and a considerable part of them we have already exhausted. These possibilities leap forth only when the traditional bounds are overcome, that is when new tools and techniques, new skills and scientific understanding, are brought to agriculture. It means constantly altering and improving the human element in agriculture, as also improving and altering the material bases provided by land, water and other inputs in agriculture. A fabulous rise in agricultural output has been achieved in the United States : the production per man hour of labour doubled between 1940 and 1950 and it almost doubled again in the next twelve years. This spiral growth has been due to chemicalisation and industrialisation (including electrification) of agriculture.

Every Indian cannot be assured the simple bread and rough cloth that he seeks to appease his hunger and cover his nakedness with, unless we strive to bring to him a modicum of education, a deepening of industrialisation and a host of associated changes in transport, credit, marketing and other institutions. If it is foolish to juxtapose bread against freedom, it is equally futile to counterpose a basket of bread against a basket of wider achievements.

Twin Requirements

Even where politics of the poor focuses on food alone, it will be still necessary to produce enough food grains—there is a great deal of unsatisfied hunger in our land—and to provide employment and earnings to the hungry to enable them to secure their share of food. These twin requirements demand a great amount of developmental efforts and transfer of resources from the better off to the under-privileged and needy, that is, complicated social engineering.

Even granting that there are many routes to economic welfare, certain critical tasks remain constant. These challenges—or dilemmas, if you prefer that word—can be reduced to four inter-related problems: First, the people must somehow accumulate capital, saved from the rigours of subsistence economy; a surplus that needs to be invested to energise productive activities. Secondly, agriculture has to be revolutionised. Without that neither man nor materials needed for further growth can come nor can the basic needs of the many millions be met. Thirdly, the nation has to encourage alterations in men and institutions; in cultural mores and the folkways. Fourthly, these changes have to be channelled into the process of industrialisation because that way alone new tools and techniques emerge to augment and diversify production, that is, improve productivity and thus, lift levels of living.

There is an inescapable relationship between improvement in life and augmentation in investment in the economy. Professor Colin Clark has offered a workable rule of thumb :

> "It is only in so far as the rate of investment exceeds the rate of population increase multiplied by four that anything will be left for industrialisation or for raising standards of real income."

In India, today, our population increases at almost 2.5 per cent per year. The rate of saving in our economy, today, is 10.5 per cent. This means that we are still hovering at the edge of stagnation. We have to lower our birth rate—shall we attempt to halve it in a little over a decade ? On the other side, we have to step up our savings and investment to 20 per cent in a decade or so. Such a two-pronged attack would open up possibilities wherein the people would experience the glow of change, and improvement in their living conditions. Politics of poverty that overlooks these basic efforts are, in reality, ineffective, shadow politics.

Food for all involves, if not for production, certainly for the possibilities of consumption, universal employment. These simple objectives demand far-reaching developmental efforts and social changes. A recent survey has confirmed that the pattern of distribution of income in the rural households is such that the bottom 30 per cent of them have an income (10.58%) which is almost that of the top *one* per cent (8.87%). Half the rural households have an income (22.48%) that is almost the same as that accruing to the top 5 per cent (19.50%). Even when agricultural production goes up, the marketable surpluses are apt to accrue to the larger holders of land. If these surpluses are to be made available to the poorer sections of the villages, they must be assured of earnings. Those earnings—arising from investments—have to be balanced by savings if inflation is to be avoided. Our rural sector is large, almost half of our national income comes from it, and experience the world over shows that economic transformation does involve imposts on the rural people, hence the outlays will have to be balanced by savings from the top layers of agricultural households. Half the agricultural income flows to 20 per cent of the rural households. Surely the rest, 80 per cent, cannot experience change unless the burdens are adjusted—whether in terms of a grain tax or other forms of imposts upon the better placed.

In the urban-industrial sector inequalities are sharper. Again the managerial elite insists upon having standards comparable to those in the West. At the stage of development where we are today, in no country were these comforts provided. Unless we accept austere standards for the elite, our consumption claims will eat into savings, abridge and erode investments and multiply the miseries of the poor. There is nothing more unsettling for the submerged people as they seek openings of progress than the "demonstration effect" of ostentatious living. Non-basic consumption, which embraces in our country today not just the luxuries and frivolities of the rich but the comforts and conveniences of the middle classes, has not just an unsettling

(Continued on Page 26)

Maharashtra Takes up Loop Campaign in Big Way

MAHARASHTRA, which has the distinction of leading the country in family planning, has undertaken an intensive programme to popularise the Intra-Uterine Contraceptive Device (I.U.C.D.).

The State has set before itself a target of reducing the birth rate by 50 per cent by 1973.

The birth-rate, which was 31.8 per thousand in 1960 has already come down to 28.8 owing to a variety of causes of which the most important is the family planning programme launched in 1953 and stepped up in 1960.

In the last four years 210,000 sterilisation operations have been performed in the State and 3.5 lakh couples persuaded to adopt contraceptive methods regularly.

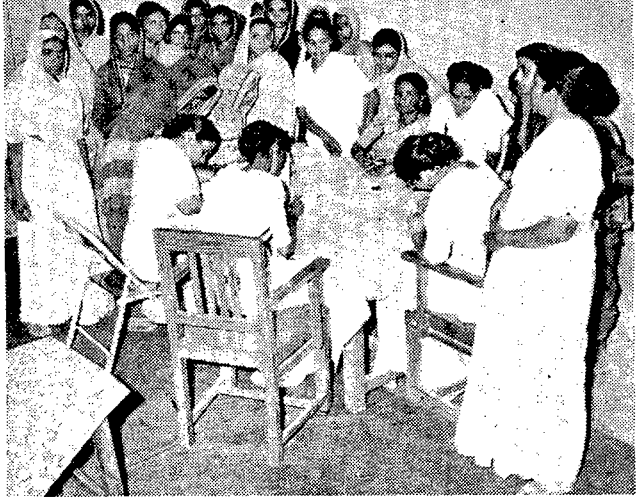
Plan to Cut Birth Rate by Half

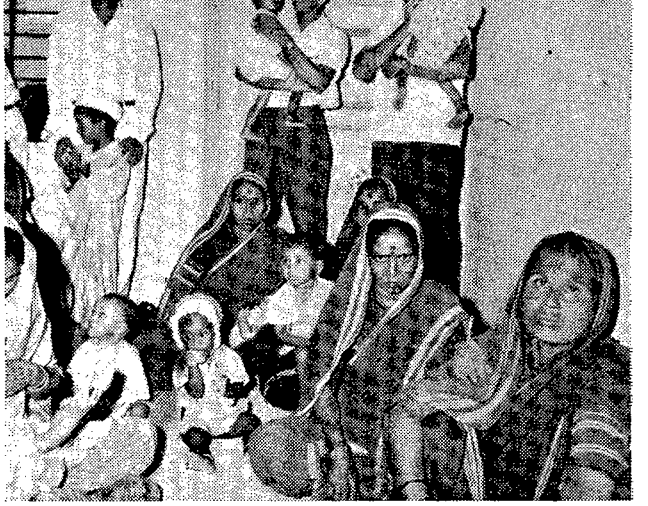
Last year alone (1964-65), as many as 232 vascetomy camps were organised in the State. The total number of camps held in four years is 481.

The new campaign to popularise the loop will be worked through three agencies—private practitioners, existing family welfare planning centres in urban areas, and Zila Parishads in the rural areas.

One thousand private practitioners will be enlisted. Each of the 142 urban family welfare centres will be asked to distribute at least 400 loops every year. Each Zila Parishad has already been told that it will be given 1,000 loops a year, which may be stepped up to 2,000 loops. Voluntary organisations will be given all help.

I.U.C.D. camps will be organised in all the districts in the State. Already camps are being held at several places. At four rural camps held at Aduro (Ratnagiri district), Guhagar (Ratnagiri district), Sirur (Poona district) and Thana, 857 loops were distributed. An I.U.C.D. Information Week was observed in the State, as in the rest of the country, in the third week of July. The full results have not yet been computed.





Women registering their names at a loop camp. *Right:* **Children are looked after by camp officials while their mothers have gone to the operation room.**

The main difficulty in introducing the I.U.C.D. service in the rural areas on a regular basis, in addition to organising the short-term camps, is the shortage of women doctors. There is a proposal to attach a woman doctor to every district family planning bureau.

Maharashtra has a Statewide network of family planning organisations. A State Family Planning Board was set up in 1957. There are honorary "family planning education leaders" at divisional and district levels who tour the districts. A special family planning bureau was established in 1958 under the Director of Public Health. Besides, a Central family planning field unit, which has a travelling training team, has been working in the State since 1962 providing on-the-spot training to health centre personnel.

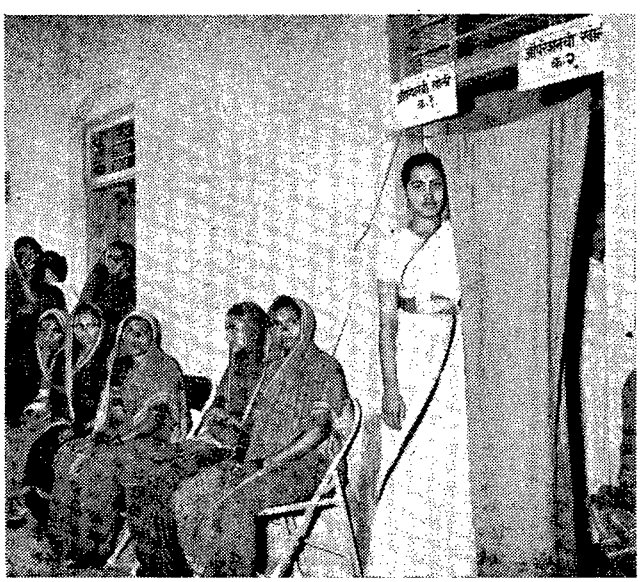
Every district has a family planning bureau, along with a mobile vasectomy unit and a demographic cell under a district family planning officer who is a trained doctor. As the organisation of vasectomy camps has now been taken up by the Zila Parishads (through the district family planning bureaux), the four divisional mobile units which had been doing this work will now take up propaganda and education in family planning.

Besides, there is a network of family welfare planning centres all over the State. There are 142 such centres in the urban areas and 482 centres (with 1,413 sub-centres) in the rural areas. These centres are run by the Government, local self-governing bodies and voluntary organisations. Each centre covers a population of about 60,000. These centres have so far contacted more than 30 lakh people and given advice to 3.12 lakh persons.

Incentives are given to people for adopting family planning methods. Contraceptives are distributed free in rural areas, and to persons earning less than Rs 300 per month in urban areas. Cases are medically examined before and after the sterilisation operation. The persons undergoing operations are granted special casual leave.

Photographs:
Director of Publicity,
Maharashtra.

Women awaiting their turn outside the operation room. *Right*: **After the insertion of the loop, women queue up for collecting medicines.**



Ajanta in True Colours

Experts Suggest New Studies to Restore the Paintings

AJANTA and Ellora. Names that spell magic in the world of art. How long will they continue to do so? How can these great treasures be preserved for posterity? These are questions over which archaeological scientists have begun to ponder.

Recently a Unesco mission of scientists critically appraised the present condition of the mural paintings and sculptures in the Ajanta and Ellora caves and rock-cut temples. Dr. Paul Coremans and Dr. H.J. Plenderleith, great archaeological chemists, examined 25 out of the total of over 60 caves. They reported that many of the paintings were damaged beyond repair owing to smoke, heat and moisture, human vandalism and bad restoration techniques. Many more paintings, they said, were lying concealed beneath dark layers of soot and varnish.

While acknowledging the skill and restraint shown by the scientists of the Archaeological Survey of India in preserving these mural paintings, they have concluded that the latest scientific methods in preservation need to be employed. They have recommended that, until the paintings are scientifically studied, all efforts at cleaning, except essential maintenance, should be stopped.

Preservation and restoration of paintings and sculptures has now become a distinct, highly specialised branch of science. It is not merely a question of upkeep of the treasures for historical documentation, but of preserving their appearance without any change as a testimony of style and artistic conception.

The first step in preservation is to find out the different materials that have been used in the paintings. Secondly, the causes of deterioration and formation of incrustation, which deface the surface and core of the paintings, are determined. Then the paintings are cleansed, the factors which cause deterioration are eliminated and the paintings are coated with materials which protect them from further deterioration.

In scientifically examining the paintings, they are first studied under varying intensities of light, from different angles, using magnifiers.

Then they are photographed by X-rays, ultra-violet rays, or infra-red rays. This is done by using special equipment, which will reveal the nature of cracks, patches and the extent of deterioration that may be concealed under darkened layers of varnish. This study also shows whether there is more than one layer of painting and also the depth of penetration of varnishes, impregnants, etc.

After this a small portion of the paintings is subjected to micro-chemical and spectrographic analysis. Only a few milligrams are enough for such examination. It is possible to find spots of undamaged painting amidst large damaged patches and to remove them for chemical study.

These portions are studied under a microscope. The pigments are then extracted by suitable solvents for microchemical methods of analysis like chromatography.

This diagnosis enables the scientists to arrive at the proper binding medium and coating materials to be used for protecting the paintings from deteriorating further.

A number of preservatives used in the past, such as varnish, wax, shellac, celluloid and cellulose acetate solutions, are not considered safe now. Some of them decompose and crack with time or change owing to oxidation and thereby discolour or blacken the paintings. Modern science has now added to the restorer's tools a number of synthetic resins, which preserve the paintings admirably without any damage. Among them are vinyl acetate, acrylates and "soluble nylon". They not only preserve the surface of the paintings but also act as adhesives to secure loose plaster and prevent flaking of colours.

Side by side with chemical examination goes a study of the causes of deterioration. Paintings suffer

SCIENCE NOTE

BY ROSSCOTE KRISHNA PILLAI

because of (1) gases and impurities in the air, (2) humidity and heat in the atmosphere, (3) bacteria, moulds and fungi, (4) insects, birds and bats, (5) light, and (6) human tampering, either unknowing or wilful. People are reported to have lived and cooked in the Ajanta and Ellora caves during the long centuries when they had been lost. Smoke and heat have added to the damage caused by age.

Chemistry has evolved a wide variety of substances—fumigants, repellents and insecticides—to fight the menace from insects, bacteria and fungi. From among them are chosen those chemicals that do not stain or in any way affect the texture of the pigments and painted materials. Thymol, benzine, petrol, camphor, ethylene dichloride etc., volatilise and produce insecticidal fumes and are thus effective in preventing decay due to insects and bacteria.

The havoc played by climate and nature on mural paintings is immense. Moisture in the air penetrates into the surfaces and salt crystallises on the pores of walls. Water seeps from above and below through crevices in the rocks. Moss and lichen also grow with the help of moisture.

A thorough survey to measure the areas of dampness and the quantities of moisture in the air and inside the walls is the first step in preventing natural decay. Instruments called humidity recorders help to make these measurements. The damp walls are then dried by scientific drying methods.

Unscientific restoration techniques and the use of unsuitable cleansers and varnishes damage the paintings irreparably.

Many of the world's masterpieces have been spoilt thus. But with great care and patience and high scientific skill many of them are being efficiently restored.

Scientific restorers at Belgium have hitherto spent five years in delicately removing traces of varnish and paint used by former clumsy restorers on a remarkable canvas copy of "The Last Supper", the famous Leonard da Vinci mural in Milan, done by his pupil Andreas Solario.

The first scientific attempts at restoration of the mural paintings at Ajanta and Ellora were made by two Italian experts, Professor Cecconi and Count Orsini about 40 years ago. They used casein and lime-plaster and shellac in spirit to fill cavities and beeswax in turpentine as a surface preservative. But these natural resins have decayed in the course of years and are now considered to be injurious to mural paintings.

Systematic research has to be carried out to study the behaviour of modern synthetic preservatives and binding materials under conditions of high temperature and humidity in India. The Unesco scientists have recommended the study of synthetic resins like vinyl acetate, methyl methacrylate, and "soluble nylon" to evolve suitable modifications for the treatment of mural paintings at Ajanta and Ellora.

All advanced countries have big, properly-equipped laboratories near their great archaeological treasures. But Ajanta or Ellora now depend entirely on the Archaeological Laboratory at Dehra Dun for their scientific restoration treatment. The Unesco mission wants at least a small field laboratory to be established at Ajanta.

With the adoption of the latest scientific techniques in preservation, it may still be possible to save at least what remains at Ajanta and Ellora.

QUOTATION BOX

We seem to be satisfied as long as the tender is all right, even if the building cracks.

—Professor P.C. Mahalanobis

Protection for Invigilators at Public Exams.

—Headline in a newspaper

Water experts are inclined to take this enthusiasm for desalination with a pinch of salt.

—"The Economist"

God's creation is indeed in a soup.
What'd save it, but the "loop"!

—"Lok Rajya", Bombay

We are all potential law-breakers.

—Lord Chalfont, British Minister at the Geneva Disarmament Conference

If the object was to throw the report into the dust-bin, why have it done?

—Mr Tek Chand on his Prohibition Report

Had Gobindsagar (capacity 8,000,000 acre ft.) been located in the plains, it would have formed a lake stretching along the Sutlej river, from Rupar to Karachi, say 1,000 miles long, 2 miles wide and 6 ft. deep.

—Mr Pratap Singh in "The Statesman"

When Mr Asoka Mehta was not in the Planning Commission, he complained about bad planning. Now that he is in the Planning Commission he is complaining about the Plan not being executed properly.

—Acharya Kripalani in Parliament

Building Up of Stocks of Coal During Kumbh Mela

—Headline of a press note

I am against the commercialisation of AIR...Bureaucratisation leads only to incompetence and nepotism. But commercialisation leads to incompetence, nepotism and vulgarity.

—The Editor of "The Illustrated Weekly"

...It seems most unlikely that in the event of a *coup d'etat* in Delhi the authors of the *coup* would think it worth their while to make the capture of All India Radio one of their first objectives.

—Mr Iqbal Singh

Missing wisdom teeth can ruin a good talk.

—Mr P. Lal

And those who speak in Hindi
Speak it so chaste and fine.
O do not kick up a shindy—
Their language is divine; .....

—A poetaster quoted by Diwan Chaman Lal

For want of quorum, the Lok Sabha had to be adjourned this evening (August 25) about half an hour ahead of schedule while the House was discussing the no-confidence motion against the Government.

—A newspaper report

Let them not disfigure and mutilate Chandigarh. There can always be all kinds of pressure, including political, to spoil its beauty.

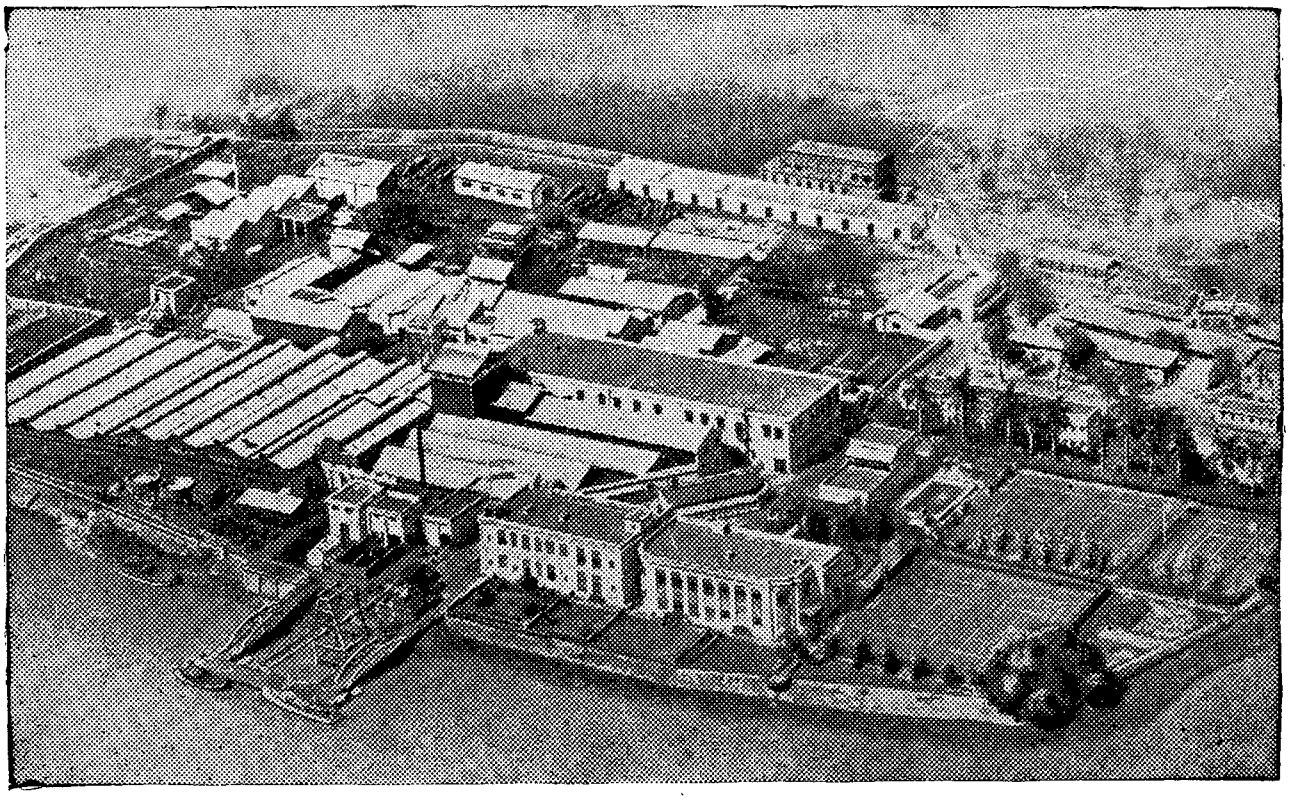
—M. Pierre Jeanneret, retiring Chief Architect of Punjab

Having a house has a number of interesting affinities with having a woman. It begins in restlessness, the itching desire to move on. One casts about, one finds and woos, uneasily aware that certain well-established habits are likely to be called in question if one makes the conquest, one conquers at a cost rather greater than hoped. Once in, the place proves to be amazingly infested with cobwebs and partitions...

—John Coleman in "The New Statesman"

The prices have kept soaring and the only reduction I have come across was in regard to the charge at the Delhi electric crematorium.

—Acharya Kripalani



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- Adhesive Lacquers for staples
- Refrigerator Finishes
- Paints for inside of tube lights
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- Marking Inks and Paints
- Hygienic Hospital and Operating Room Paints
- Tinplate Lacquers
- Insulating Varnishes and Lacquers
- Crown Cork Lacquers
- Pilfer Proof Closure Coatings
- Heat Resisting Finishes
- Fire Retarding Paints
- Hammer Finishes
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- Toy Enamels
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Forest Resources for Industries

NATIONAL INVENTORY OF BAMBOO AND WOOD URGENT

K. G. BHATIA

FORESTS yield various products of industrial importance : timber and the sheet material made from wood, such as plywood, fibreboards and particle-boards, used in housing, other construction, transport and furniture; cellulosic raw materials used in making paper and board; and gums, resins, and other minor forest products. They also satisfy certain needs of the local population such as small timber for building huts and making agricultural implements, fuel for the hearth, and fodder for livestock.

Besides, forests also have a protective role in minimising soil erosion, mitigating floods and regulating the flow of sub-soil water to sustain agriculture.

This many-sided usefulness of forests makes planned forestry important for the national economy. Such a planned approach has to give due weightage to the obligatory features listed above and also take into account the extent and the pattern of demand on forest products.

Let us confine ourselves to the major forest industries. Such industries have certain special features. They yield a wide range of products, both consumer and intermediary goods, flowing into many sectors of the economy. The demand for them rises sharply with economic development and consequent higher living standards. Consumption of industrial wood is small when the income per head is low. The present pace of planned development and rise in living levels and the increase in population have pushed up the demand for various kinds of forest products. A sustained increase in production will have to be brought about through intensive schemes of development of forest resources to bridge the widening gap between consumption and production.

India today imports 60 per cent of its newsprint requirements involving foreign exchange of Rs 5 crore. If availability of cellulosic raw materials could be assured and mills set up, the entire requirements could be met by indigenous production. It has been estimated that against our production of about 5.5 million tonnes in 1961, the country's requirement of industrial wood for various uses is likely to be of the order of 8 million tonnes by 1965, 12 million tonnes by 1970, and 16 million tonnes by 1975. Therefore, if the progress of the country is to be maintained, by 1975 it should have at least this quantity of industrial wood production to meet the expected demand.

Foresters are confronted with the poser, "How to meet the growing demand for wood for various purposes?" Hence the need for increasing the production from forests, rational use of the present yield and increased production by raising large-scale plantations of suitable fast-growing species. This will entail going into hitherto inaccessible forests for which roads have to be built. This is an important method of resource creation.

Better Statistics Needed

What the extent of forest resources is, how they are being consumed and what the likely level of future requirements is likely to be—all these questions need to be carefully examined. We need fuller figures on the pattern as well as the volume of forest products consumed in different sectors of the economy. Factual data are also needed concerning forests—their extent, location, composition, standing wood volume, rate of growth, and the quantities of various products that will be available on a sustained basis as also the cost at which these can be procured by the industries.

But, as is usual in developing countries, reliable statistics are wanting. India has not yet carried out any national forest inventory. The figures of out-turn of wood and other forest products which are mentioned in various publications are rough estimates based on certain assumptions. Even less reliable are the figures of the forest capital, namely the growing stock, which are at best intelligent guesses.

No prospectus for investment in forest industries can be prepared without some reliable information. Concerted efforts will have to be made to tackle the problem. The methods of collecting statistics need to be standardised to provide a basis for general and detailed planning. In short, the immediate needs are:

i. a national forest inventory—to know the present availability of wood and other forest products;

ii. statistics of removals, employment opportunities, trade prospects, and consumption of forest products; and

iii. periodic review of supply and demand trends.

Not only should the present out-turn be utilised to the best advantage, but production should be maximised, particularly of products most in demand. One of the serious obstacles in the development of forest industries is the high cost on obtaining the basic data concerning the availability of forest resources. Aerial surveys are likely to considerably reduce this cost and also save time. Modern sampling techniques have made it possible to get more precise data at lesser cost.

These studies can best be made by a special group with adequate facilities to determine correctly the present availability of various raw materials, the cost at which they can be collected as also the manner and the extent to which they can be increased to meet the future requirements.

We Must Exploit the Remoter Forests

Detailed surveys will take years. But even approximate figures could help in planning and later accurate data could be collected. Realising the importance of such studies the Planning Commission appointed a Committee on Natural Resources which has suggested that such surveys should be undertaken on a continuing basis, reviewing the results obtained from time to time and filling the gaps that come to surface.

The primary function of the Resources and Scientific Research Division of the Planning Commission is to conduct such studies and carry on research on problems relating to development, utilisation and conservation of the natural resources including forest resources. The studies are aimed at ascertaining, as far as possible with available data, the most rational utilisation of available resources and need to create new assets. One of the studies deals with the availability of forest raw materials for pulp, paper and newsprint and measures to

augment the forest resources to meet the future demand.

In the coming years the country is going to face a serious shortage of paper. As against the present low level of *per capita* consumption of only 1.5 kg of paper the reasonable consumption by 1980-81 should be about 6.0 kg. The trend of future demand is given in the sub-joined table:

('000 tonnes)

Type	*Consumption 1963-64*	*Estimated future demand*	
		1970-71	*1980-81*
1. Paper and Paper boards	493.6	1,200	3,000
2. Newsprint	125.2	300	600
3. Chemical pulp	75.4	200	600
	694.2	1,700	4,200

It has been estimated that these targets can be realised only if the availability of cellulosic raw materials is stepped up to the following extent:

Year	('000 *tonnes*)
1965-66	2,800
1970-71	5,300
1975-76	9,000
1980-81	13,000

There are 53 paper and paperboard mills in production in India with a production capacity of 643,870 tonnes and with a licensed expansion of 227,516 tonnes. Besides, ten new large units have been licensed or approved with a total capacity of 244,200 tonnes. The total production of paper and paperboard for the year ending March 31, 1965 was 493,000 tonnes. It may be expected that during 1965-66 the total production of paper and paperboard might be around 550,000 tonnes as against target production of 700,000 tonnes for the Third Plan*.

At present, the main forest raw materials used by the paper industry are bamboo and to a lesser extent *sabai* grass and some coniferous woods. Some of the mills have started using miscellaneous hardwoods (and sugarcane waste). Most of the bamboo from accessible forest areas is either already being utilised commercially or goes for agricultural purposes. The bamboo resources available in the remoter forests have not yet been worked. There is lack of exact information regarding the total availability of bamboo in different regions. It will be desirable to ascertain this by a systematic survey in the interests of industrial development. According to the study the total annual potential availability of bamboo has been estimated at about 4 million tonnes, with an extra 2.4 million tonnes if bamboo-bearing forests are properly tended and the inaccessible areas opened up.

*Information furnished by the Directorate-General of Technical Development (Paper Directorate), Ministry of Industry and Supply, New Delhi.

Similarly, with better efforts we can have access to the large quantities of coniferous wood (fir and spruce) growing in the upper reaches of the Himalayas. So far these forests have only been partially exploited for want of communications.

Thus, supplies of forest raw materials for making paper could be augmented by tapping the bamboos in the forest of Assam, the West Coast and Dandakaranya; conifers in Punjab, Himachal Pradesh, U.P., and Jammu and Kashmir; natural growing miscellaneous hardwoods in the forests near the mills; and by creating industry-oriented plantations of fast-growing broad-leaved species.

Large Employment Potential

The employment potential in forestry operations and forest-based industries is fairly large and is steadily growing. The total capital employed in the paper industry alone is of the order of Rs 7,000 lakh and the industry provides employment to 42,000 persons.* Besides the paper industry, the manufacture of wood-based sheet materials (plywood, fibre-boards and particle-boards) are also developing fast in the country. Efforts are being made to have integrated units so that forest products are utilised fully and to the best advantage.

Forest resource surveys, to determine the economic potential of at least some of the obviously more valuable forests, has received special attention in some of the States during the current Plan period. Work has started on a forest inventory. This major project, called Pre-Investment Study of Forest Resources, receives assistance from the U.N. Special Fund. In the next three and a half years, this study is expected to cover an area of about 29,440 square kilometres. There is need for more inventories so as to cover the whole country.

A wholesome feature is the rapid expansion of plantations of fast-growing species like eucalyptus. A Centrally-sponsored scheme for raising such plantations was taken up during the Third Plan with a physical target of 56,000 hectares at a total cost of Rs 275 lakh. According to assessments made in the Planning Commission for the Fourth Plan, a much bigger programme for planting bamboos and conifers (250,000 hectares) and fast-growing species of industrial importance (437,000 hectares), mostly for pulp, paper and wood-based sheet materials, will be necessary.

To summarise, in order to meet the increasing demand for forest raw materials for various industries, particularly paper and newsprint, composite wood boards, etc., it is absolutely essential to plan for the proper utilisation of available quantities and to maximise production. This will be possible only if—

1. a reliable inventory of forest resources, their availability, removals and end-uses is compiled;

2. there is a periodical review of the trends of supply and demand of various forest products;

*National Progress Report on Forestry (1962/64) issued by the Ministry of Food & Agriculture, New Delhi, 1964.

3. there is intensification of the programme of management of forests to increase their output and reduce the cost;

4. there is opening up of hitherto inaccessible forests by developing communications and introducing modern logging methods for their exploitation, so that forest produce could move at a faster pace and economically to the centres of consumption; and

5. there is a larger programme of planting suitable fast-growing species to meet the rising demand for wood.

Mr K.G. Bhatia is Research Officer in the Planning Commission.

Yojana Bhavan Diary

The Planning Commission met from August 23 to 26 to discuss the Fourth Plan outlays and programmes and again on August 31 to consider the agricultural plan for the Fourth Plan period.

The National Planning Council study groups met on August 27 and 28.

Prof. P.C. Mahalanobis, Member, Mr Asok Mitra, Additional Secretary, Mr B.N. Datar, Chief, Labour and Employment, Planning Commission and Dr K.R. Nair, Director, Central Statistical Organisation have left New Delhi to take part in the World Population Conference (August 30 to September 10) at Belgrade.

Dr. Harbans Lal, Deputy Economic Adviser, Department of Economic Affairs, Ministry of Finance, joined the Research Programmes Committee as Member-Secretary on September 1.

Mr. P.D. Kulkarni, Joint Director Social Welfare Division, participated in the meetings of the UNICEF Group on Scheme of Planning for Children and Youth, held at Bangkok from August 29 to 31.

Mr M.K. Gopaliengar, who has been with the Planning Commission, as Chief (Power), on deputation from the Ministry of Irrigation and Power, has left the Commission to join the U.N. Economic Commission for Latin America as Hydro-electric Adviser.

Mr D.R. Suri, Chairman, Technical Group for Transport, Planning Commission died on August 21. A condolence meeting was held in the Yojana Bhavan on August 23.

TEACHERS CUT CLASSES

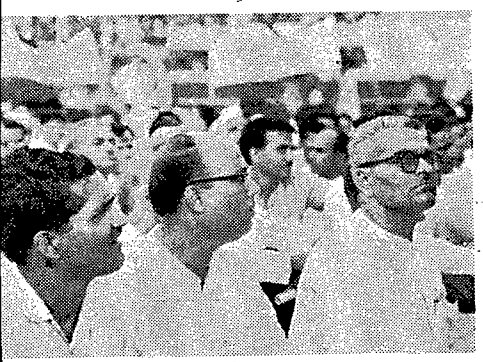
"WE are the gentlest of all those who have demonstrated on this street," he said.

He had eyebrows that looked used to expressing disapproval, but the eyes themselves were of a man who was long forced to be patient.

He was a member of a teachers' procession that marched to Parliament last month in the capital.

It was a procession very unlike others. There were placards, of course, but no slogans were shouted. Evidently the teachers were giving their throats a rest.

Working in Yojana Bhavan, we are privileged to have glimpses of a number of protest marches and demonstrations. There are mammoth-sized ones, whale-sized ones, snake-shaped ones, and some which are



only like squirrels and sparrows. The bigger ones have common features. They are all highly organised, and organised roughly the same way, whatever the colour of the caps and banners—red, saffron, white or blue. There are the scooterised cheer-leaders, who herd the demonstrators arriving by buses and lorries. There are the loudspeakers fixed on the avenue trees. There are the rostrum-builders. There are the professional assistant demonstrators who are ready to swell the numbers of those whom mere ideology brings on to the street.

Then there are those who look to the feeding of those who come from outside. After the Jan Sangh demonstration last month an organiser said they had arranged several thousand lunch packets. (What a great deal of merit they are accumulating? Isn't *anna-daan* the greatest of *daans*?)

The demonstrations are not without their lighter side. A group which took part in the Jan Sangh demonstration came by buses belonging to a Gandhi co-operative transport company. A Sikh taxi-driver going home in the evening said: "Had a good day, I made 90 rupees. But what were these people asking for?" Others who are enthusiastic about demonstrations are those who sell bananas, parched gram, cooked gram, baked sweet potatoes, grilled corn cobs and tinted beverages.

Some months back, after the communists had staged a rally, a colleague spotted a person who looked an Andhra. Our colleague, also being from Hyderabad, asked the other man in Telugu what had made him come all the way. "They said they would pay my fare; they said they would give me my food and some money for tobacco. And they said they would show me Jawaharlal Nehru. So I came," was the reply.

IGNORAMAN

Wants to Know

Isn't it our trouble that we regard food as an INPUT rather than an OUTPUT?

The Books We Send

BOOK buyers, book sellers, book importers and book publishers are all talking about the new import restrictions. The shilling and the dollar are dearer now for readers of magazines and books. We have to pay more for foreign ink and paper—provided the dealer deigns to take our order. Fortunately our young men haven't yet been denied access to knowledge of the doings of Messrs P. Mason and J. Bond, and the older men can still buy "girlie" magazines. It is only the scientists (social and natural) who find it hard to persuade bookshops to get them their needs of books—and what strange names they have (the books)!

Meanwhile a quiet battle rages between sellers and publishers. Some publishers say: "We can do it. We can be independent of foreign books." The sellers say: "What you publish is good only up to intermediate standard; for all higher knowledge we are still dependent." Amidst all this it is interesting to know that we too export books. The Asia Publishing House's bulletin for August says that the book industry earned foreign exchange of Rs 84.15 lakh in 1963-4.

The bulletin didn't give details, but someone who claims to know tells us that half of this sum comes from the textbooks we send to African countries.

ANDHRA'S

HEAVENLY DAMSEL

Helps Industry

1,000 MW Power from Kinnerasani Project

KINNERASANI is a small river in Andhra Pradesh which flows into the great Godavari a little below the pilgrim town of Bhadrachalam.

The river, whose name in Telugu means 'heavenly damsel' and whose praises have been sung by the Telugu poet Viswanadha Satyanarayana, will soon be assisting industry.

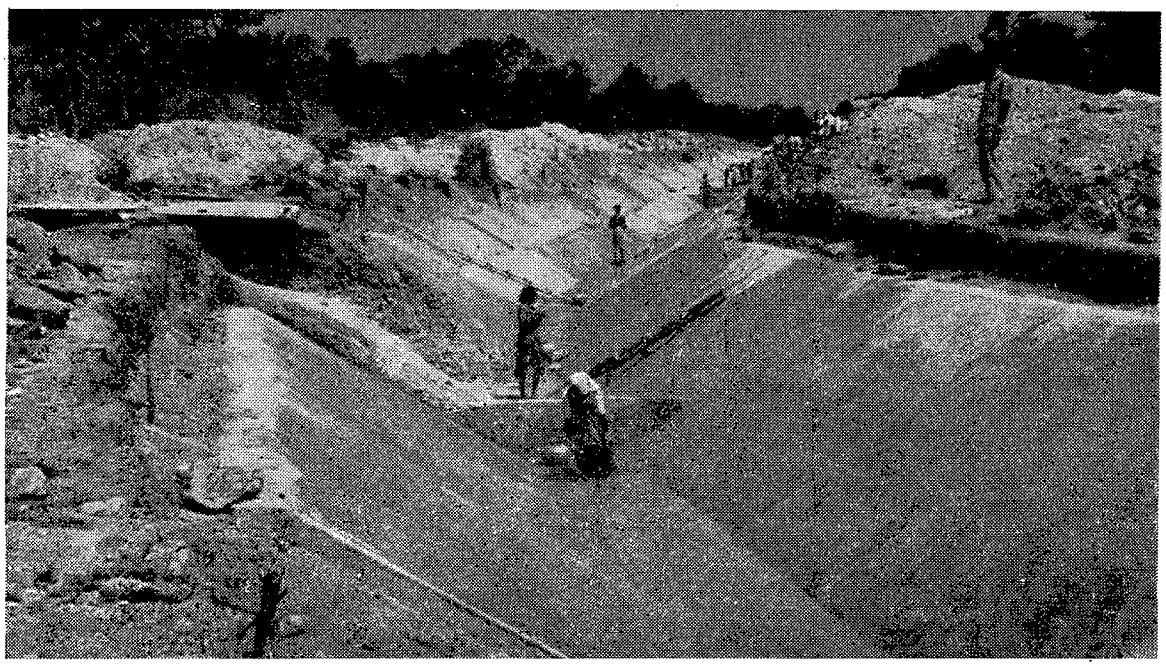
The waters of the Kinnerasani Project in the Burgampad *taluk* of Khamam district will serve the Andhra fertiliser factory and a thermal power station run by the Electricity Department.

In the first phase, by building a dam to a restricted height, the fertiliser factory's requirement of 5 million gallons a day and the thermal power plant's need of 10-million gallons a day will be met.

In the second phase, by raising the height of the dam, the reservoir storage will be increased to its ultimate capacity which will enable the thermal station to be further expanded so as to generate 1,000 megawatts of power, consuming 46 million gallons of water a day.

In its length of 96 kilometres, the Kinnerasani drains a total area of about 1,300 square miles. The stream is reputed for its flash floods which hold up traffic. This

A section of the earthen dam. Below: water channel being lined with cement concrete



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) inches rainfall yearly. The total monsoon
he catchment at 75 per cent confidence limit
to be 9,863 million cubic feet or 2,26,000

between two hillocks and containing the
is proposed to be closed with an earthen
he saddles in the hillocks on either flank
l to be closed with masonry dams.

P. S. RAMAKRISHNA RAJU
cutive Engineer, Kinnerasani Project

hen dam will have an ulimate height of
a top width of 20 feet. The total quantity
uired to be conveyed and deposited in place
phase of the dam is estimated to be about
ubic feet.

)nry dam with a top width of 14 feet and
height of 415 feet will be built with stone
ement mortar 1:5 proportion.

rst phase, the reservoir will have a storage
,375 million cubic feet, and a waterspread
miles. In the second phase, the reservoir
storage capacity of 8,400 million cubic feet
spread of 10 square miles.

rst week of July this year, the river gap had
and the earth dam raised to R.L. 365.00,
er to be stored up to R.L. 340.00. The river
rted through the spillway and the composite
Some 41,939 units of earth (each unit of
feet) have been conveyed, deposited and
n place by using heavy earth-moving machi-
vork has been done departmentally.

the concrete-lined water supply channel
rogress and will be completed by the end of
5. Water will be let out for the testing of
f the first power generation unit of the ther-
by November 1, by pumping the water from
into the channel. The first unit of 60
apacity is expected to go into regular
)m March 31, 1966.

WE TELL YOU YOU ASK US

SUPPORT PRICE

Mr R.K. Goyal, Modinagar

What does 'support price' mean?

Answer : 'Support price' is a price which assures the producer a minimum return on his produce. It is determined by the Government, which offers to purchase produce at that price when the market prices fall below the level.

Support price becomes necessary when there is a glut in the market and the traders and middlemen exploit the producers. Support price thus allows prices to fluctuate in a free market but checks them at a minimum level.

Farakka Project

Mr M.L. Kapur, Ludhiana

What is the Farakka Barrage Project? Why has Pakistan objected to the project ?

Answer: The object of the Farakka project is to save Calcutta port from silting up. Calcutta is an inland port situated on the left bank of the Hooghly. The Hooghly serves as a navigation channel between the sea and the port. The main stream of the Ganga flows through another branch, namely Padma, and the Hooghly gets waters only when the Ganga is in high floods. On the other hand the tidal bores in the sea ride on into the Hooghly and deposit heavy sediments year by year. To flush the sand and silt back into the sea, it is necessary to release water stream into the Hooghly in the upper reaches. The Farakka barrage is being built mainly with this purpose.

This solution for the deteriorating port of Calcutta was conceived as far back as in 1858 by expert British engineers. At the time of partition, the claim of India on the Ganga waters was accepted and the areas adjoining Farakka were distributed on this basis between India and Pakistan. Secondly, the Ganga flows through India, and only 1.5 per cent of its waters are contributed by Pakistan region. Thirdly, the Farakka project will help to reduce floods in the neighbouring areas of Pakistan. Thus, there is no case for Pakistan to take any objection to the project.

Agriculture Plan

Mr P. Sobhakara Rao, Srikakulam

1. What are the measures proposed in the Fourth Plan for the development of agriculture ?

2. What is the effective way of improving our agriculture?

Answers: 1. Agriculture will enjoy the first priority in the Fourth Plan. The various measures proposed to be taken up in the Fourth Plan for agricultural development are :

a. Undertaking and promoting development programmes such as irrigation, land reclamation and soil conservation.

b. Developing arrangements for the production and distribution of essential supplies like fertilisers, improved seeds, pesticides, cement, agricultural machinery and implements.

c. Undertaking measures for increasing the efficiency of factors of production, through research, extension, etc.

d. Provision of economic incentives such as remunerative prices, marketing and subsidies.

e. Institutional reforms to create conditions conducive to greater investment in agriculture.

2. The effective way of securing rapid increases in agricultural production is through application of new scientific techniques to agriculture. For instance, new varieties of paddy which could take high doses of fertilisers have been evolved by agricultural scientists. The main problem is to popularise these varieties in areas with assured water supply by providing necessary inputs of fertilisers and pesticides and credit.

At the same time a self-contained agricultural development plan will be prepared giving details of all the schemes and programmes.

STATISTICS

we are collecting more figures of many kinds to frame policies by

STATISTICS have assumed increasing importance in this country especially since the emergence of the era of planned development. Reliable statistical data are needed to study the existing levels of the economy with a view to planning for the future and also to assess the progress achieved from time to time.

It is well known that there are considerable disparities in the economic and social fields not only among the States but also between regions within a State. The five-year plans aim at reducing these disparities and bring about greater balance and uniformity. In order to take appropriate measures and draw up realistic plans we have to have statistical data for each State based on the same concepts and definitions.

Besides statistics for each State it has been found essential to have statistics for the various regional divisions for specific purposes of development. For the efficient development of natural resources like water, minerals and forests, which are highly localised, the country has to be divided into units apart from the administrative units of States and Union Territories. For instance, the country has been divided into river basins for development of water resources and regions of hydroelectric power. These divisions cover groups of States and even parts of different States. Recently the Planning Commission has drawn up a scheme which divides the country into 14 resource development regions and 57 divisions based primarily on considerations of the physical conditions. Backward areas in the country have been classified by the Commission into (i) desert areas, (ii) chronically drought-affected areas, (iii) hill areas, (iv) areas with high concentration of tribal population, (v) areas with high density of population, low level of income etc.

The National Sample Survey, conducted since 1951, collects statistical data not only according to the States but also according to regions consisting of contiguous districts

By

K. R. NAIR

Director,

Central Statistical Organisation

with certain homogeneous socio-economic characteristics such as crop pattern, attitude, population density etc. At present there are 51 such regions.

While massive statistical studies in very minute detail going down to the household level are undertaken during the Census, periodical and annual statistical surveys in various fields and for specific purposes present an up-to-date picture of the country to the planners and policy-makers.

One of the most important sets of statistics at national and regional levels required for development programming is population data. In our country these data are vital, because the very fast growth of our already large population has been upsetting all our calculations for the future. Population data are needed to assess the needs of goods and services on the one hand and the size and quality of man-power resources available for producing them, on the other. The data provide valuable information on per capita and national income, literacy, structure and distribution of households, important demographic characteristics like sex, age, marital status and migration. The literacy data provide a basis for educational planning; the information on migration is for studying the impact of urbanisation on fertility, mortality, consumption pattern and the complexion of the labour force in different places. The decennial census, the most recent of which was conducted in 1961, is the major source of demographic data in India. Data on population, births and deaths are also being systematically collected through sample surveys organised by the Directorate of National Sample Survey and the Registrar-General of India, but they are prepared only up to the State level.

Under certain sets of assumptions regarding future course of fertility, mortality, migration etc., population projections for the whole country and for each State have been worked out by age groups and sex for every five years beginning with 1966 up to 1981.

Provision of better employment opportunities forms a major goal of planning. This requires statistics of the employment opportunities available to the existing unemployed and under-employed as well as to the net addition to the labour force every five years. At present the Census and the National Sample Survey provide

these data at State and regional levels. The 1961 Census gives the break-up of data down to village, town, block levels and hence provides a bench-mark for assessing changes in the labour force. The National Sample Survey collects data on labour force, employment and unemployment regularly and based on these, estimates of these characteristics at the State level are arrived at for rural and urban areas separately by the State Statistical Bureaus.

Annual collection of data on employment in the organised sectors of the economy registered under various Acts like the Factories Act, Mines Act and Plantations Act and also in Government insurance business and banking is done on State level.

Employment in all public sector establishments and all large private establishments employing not less than 25 persons on a statutory basis are covered by the Employment Market Information Programme, which was launched in 1955. These data, collected every three months, are available at the State and district levels.

As regards agricultural employees, the bulk of whom are self-employed, the population census data form the only source.

The Live Registers of Employment Exchanges, which are located only in urban areas, indicate at least the unemployment trends in cities and towns. The employment data for railways are available by the operational zones which cut across boundaries of States.

Agricultural Statistics Basic to Progress

As agriculture has been given the highest priority in the economic development policy of India, reliable statistical data of the various aspects of agriculture should form the basis of all planned progress in this field.

The primary agricultural statistics relating to utilisation of each plot of land are maintained at the village level. Data of production of all important crops are available for each district and each State. Pilot studies are under way to get estimates of production even at the block level, each block consisting of about 100 villages.

Statistics of agricultural holdings classified according to the size are collected every ten years through sample survey for each State.

Indices of agricultural production at all-India and State levels as well as data on average farm and wholesale prices for all the important agricultural products at the district and State levels help to formulate appropriate price policies and to assess the success of plan implementation in agriculture.

The number of livestock and poultry by sex and age groups, the area, volume, density and composition of the different categories of forests, the quantity and value of major forest products and statistics of the catch of marine fish in maritime States are collected regularly and provide valuable data for realistic assessment and planning in these fields.

Industries Survey Every Year

Since industries form an important segment of planned development contributing about 11 per cent of the total national income, a large variety of statistical information is needed at both national and regional levels. The main source for the statistics of industrial production is the Annual Survey of Industries, conducted by the Department of Statistics of the Central Government. The collection is done through the agencies of the Directorate of National Sample Survey, the Indian Statistical Institute at Calcutta and the Central Statistical Organisation.

The Annual Survey of Industries covers the entire factory sector in the country, that is, units employing ten or more workers if the units have power, or 20 or more workers if the units are without power. In 1964 their number was of the order of 49,000. Factories employing 50 or more workers (with power) and 100 or more workers (without power), which numbered nearly 13,000 in 1964, are covered on a census basis. The remaining factories are covered on a 16 per cent probability sample basis. Data collected include the number of factories, capital, number of employees, wages, input of material, output of products and value of manufacture. These are published both for the whole country and for each State.

In addition, monthly production statistics for selected industries are collected and published by the Industrial Statistics Wing. The total number of industries covered thus are about 330 and the data include installed capacity, production and stocks.

Besides these the Central Statistical Organisation brings out an All-India Monthly Index of Industrial Production based on 201 items.

No comprehensive estimates of private consumption and savings are available either at the national or at the State level. However, the National Sample Survey has been collecting data regularly on household consumption expenditure in its various rounds. These provide the basis for projecting household demand for goods and services, study of changes in household income distribution, personal savings etc.

The raising of education and health levels is one of the key planks in the building up of a welfare State. The complete reorientation of our educational policy and the building up of our structure of education with suitable adaptations to fit in with our national needs cannot be formulated without a statistical base. Educational data are collected in respect of number of public and private schools, teachers at each level, type of education, number of people classified by level of education, age, sex etc., and school finances.

In regard to health services, data are available at regional levels in respect of hospitals and dispensaries (beds, admissions, patients treated etc.), number of doctors, nurses and other medical personnel, their education and training, and number of family planning clinics.

National Income estimates have been prepared annually from 1948-49 onwards both at current and constant prices.

To achieve balanced regional development, a comparative study of the level of industrial and economic development among the States over time is very important and comparable service of State/regional income serves as a useful indicator of development. The estimates of State income prepared by the Statistical Bureaux of some States represent only the value of goods

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Books

The New Thinking in Economic Theory

Lectures on Advanced Economic Theory. K.T. Ramakrishna. Asia Publishing House. xiv+315 pages. Rs. 20.

Ashok Desai

THIS is primarily a textbook on price theory. It is divided into four parts dealing with the "definition, scope and method" of economics, Hicksian demand theory, product markets and factor markets.

The book closely follows what are now standard elementary textbooks on the various topics; it can claim to bring between two covers the conclusions of the best-known economists. However, it does not cover all the work it might have been expected to. Modern work on oligopoly, for instance that of Baumol and Sylos-Labini, is completely neglected; in fact, what Mr Ramakrishna describes as oligopoly is no different from perfect competition and Chamberlin's large group case. Even the work of Wiles and Penrose, which should be fairly elementary economics by now, finds no mention. At least some of the various treatments of the bargaining process of wage fixation—Zeuthen's, Hicks', Nash's—are quite old by now; even they are omitted. Neo-Keynesian theories of distribution also find no place.

One would be justified in saying that this book is designed to teach pre-Keynesian economics. Most of the books and articles the author relies on are pre-war; all post-war ones are elementary textbooks.

In exposition Mr Ramakrishna uses plenty of one-quandrant diagrams. While they are a time-honoured pedagogic device in economics, it is doubtful if they can be made its prime vehicle, or indeed if they clarify the ideas by themselves. Presumably the objective of lectures is to teach students by example how to express the ideas in examinations, and what matters in examinations as well as in public life is facility of verbal exposition, and not amateur draughtsmanship.

The foregoing comments have been based on the assumption that the book is meant for teaching stereotyped syllabi in a stagnant Indian university. But a word of protest against the syllabi and the stagnation cannot be resisted. For economics is not just what economists said and wrote down: it is intended to improve our judgement of the working of the real world and to form a rational basis for policies. Mr Ramakrishna's book comes nowhere near fulfilling this intention. Various economists wrote down various definitions of economics because they did not know how else to start a book or because they disagreed with the politics of their professional colleagues and wanted a methodological stick to beat them with. To enumerate the definitions they thus wrote down to students who have learnt little economics is to waste their time with what to them is meaningless abracadabra. To teach theories of imperfect competition when Mrs Robinson herself has condemned them as largely irrelevant is sheer ritual; and students who are taught economics as a series of fables in diagrams are ruined for ever as potential judges of reality. The best one can hope for with this way of teaching is that it would bore most students stiff and drive them away before they become the useless dry-as-dusts it is designed to produce.

TESTING SOILS OF INDIA

Soil Testing in India by Gilbert R. Muhr, N.P. Datta, N. Sankarasubramoney, V.K. Leley & Roy L. Donahue (Second Edition, 1965). United States Agency for International Development Mission to India. 120 pages.

S.P. Raychaudhuri

THIS is a revised edition of the publication first brought out in 1963. Soil testing has proved a very useful tool in the hands of soil scientists and agronomists for assessing the fertility of soils with a view to guiding proper fertiliser use and thus eliminating guess work in supplying fertilisers to the crops.

Under an Indo-U.S. project on soil fertility and fertiliser use, a start has been made by setting up 24 soil testing service laboratories at different locations. Besides these, the State Government of Bihar has established three new laboratories of its own which are located at Ranchi, Patna and Pusa. The Government of Punjab has established two more soil testing laboratories, at Palampur and Hissar. These laboratories have equipment for analysing 10,000 soil samples a year.

Recently the laboratories at Ludhiana, New Delhi, Bangalore and Sambalpur have been remodelled with the help of USAID and everyone of these laboratories is capable of analysing 30,000 samples a year. Plans to set up more soil testing laboratories in the intensive agricultural areas are under way. There is a proposal to further strengthen the centres for working on the soil testing and crop correlation work more intensively.

Although only a few years old, the programme has shown considerable progress. Soil testing centres have so far handled about 0.82 million soil samples.

The present revised publication gives a clear picture of the work that has been done so far in the country on this very important problem, including collection, preparation and despatch of soil samples, the arrangement of the soil testing laboratories, the procedure for carrying out the soil tests, the preparation of the chemical reagents, use of soil test data (including correlation with crop responses and preparation of soil test summaries) and maintenance of

instruments and their minor repair. The publication includes the floor plan of a standard soil test laboratory designed to analyse 30,000 soil samples per year showing the most suitable arrangement of power point, electric point, sink, water type reactor, etc. Of particular interest is a note on the organisation of work in the laboratory for maximum efficiency, indicating how the laboratory soil chemist might keep contact with the farmers, through extension workers, for securing optimum efficiency and in following up the results obtained by recommended fertilisers. The detailed descriptions of these items, which had also been given in the first edition, have been brought up to date. Some chapters have been entirely rewritten and more illustrations by way of photographs and charts have been included.

A new feature of this second edition is the clear demonstration, through the ABC type trials, that application of fertilisers on the basis of soil tests brings out most economical returns to the farmer in respect of wheat, rice and hybrid maize. Appendices I-XV give useful information on such subjects as equipment needed, composition of important plant food materials and soil amendments, conversion factors and atomic weights of elements.

There is no doubt that this revised edition of the publication will be useful not only to the soil workers and extension staff but also to the general public interested in the application of modern fertilisers in farming.

Rural Fuel

Domestic Fuels in Rural India. National Council of Applied Economic Research, New Delhi. 131 pages. Rs. 12.

THIS is a useful study of domestic energy consumption in the rural sector, a field in which at present no satisfactory and reliable data exist. The past data on firewood, cow-dung and waste-products have been utilised by the Energy Survey of India Committee to process their statistics for the rural sector.

The statistical collection for the survey is stated to have been tied up with the Household Saving Survey undertaken by the Council covering about 9,000 rural household samples chosen in 320 villages in the country with population below 10,000. In linking up two surveys with an essentially diverse approach it remains to be seen how far the methodology and sampling procedure adopted for the rural household saving survey could be claimed as compatible or unbiased for the fuel assessment survey.

A rather cautious approach also seems called for in making projections of future demands. For instance, a target of 37 million tonnes of soft coke projected for the year 1975-76 in the survey could be termed as a herculean miracle for achievement considering the trends in present production as well as consumption pattern of soft coke in the last ten years. Has the country got adequate capacity to finance the project for the mining of at least an additional 65-70 million tonnes of coal for this purpose and also for soft coke manufacturing plant of such colossal dimensions?

The inherent drawbacks in the survey and the overemphasis on soft coke without regard to practicability has blurred the perspective picture attempted.

T.R.

Agricultural Trade

Agricultural Commodity Trade and Development—Prospects, Problems and Policies. A reference paper FAO Commodity Policy Studies Special Studies Programme No. 2 by Food and Agriculture Organisation of the United Nations. $ 1.50.

This reference paper was submitted by the U.N. Food and Agriculture Organisation to the United Nations Conference on Trade and Development which was held in 1964.

The paper attempts to analyse the problems and policies relating to trade in agricultural commodities in the wider context of trade and development. It also serves as a reference service with respect to other relevant FAO studies, consultations, and programmes. In the end it presents in a summary form a series of policy conclusions and suggestions for possible action in the field of trade in agricultural commodities and economic development.

As a supplement to this report, relevant recommendations of the United Nations Conference on Trade and Development are also given.

The report gives in a nut-shell all the problems relating to trade in agricultural commodities and will be of immense use to readers interested in this problem.

Publications Received

The Indian Year Book of Education 1961. 420 pages. Rs 17. *Working With Village People* (A Collection of Case Studies) by Sushila Mehta. 111 pages. Rs 1.25. Both published by the National Council of Educational Research & Training, New Delhi.

Management of Public Health In India. National Council of Applied Economic Research, New Delhi. 158 pages. Rs 18.

Nepal's Finances. His Majesty's Government, Ministry of Finance, Kathmandu. 67 pages.

World Cocoa Survey by C.A. Krug. 242 pages. $ 4.00 or 20 s. *International Commodity Arrangements and Policies.* FAO Commodity Policy Studies Special Studies Program No. 1 by Gerda Blau. 52 pages. $ 1.00 or 5 s. *FAO Commodity Review—1965.* 175 pages. $ 2.00 or 10 s. *Fasciolíasis and the Liver Fluke* by E.L. Taylor. 234 pages. $ 3.00 or 15 s. *Coconut Situation* No. 13 May 1965. 45 pages. All brought out by Food and Agriculture Organization of the United Nations, New Delhi.

Effects of Bhakra Dam Irrigation on the Economy of the Barani Villages in the Hissar District 1961-62. Gurdit Singh and Swaran Singh. 219 pages. *Report on Inquiry into the Standard of Living and Means of Sustenance of the Aged Destitutes.* Gurdit Singh. 62 pages. Rs 3. *Family Budgets of Twenty-six Cultivators in the Punjab for the year 1962-63.* 70 pages. Rs 3.45. All brought out by The Economic and Statistical Organisation, Government of Punjab, Chandigarh.

Joint FAO/WHO Expert Committee on Brucellosis Fourth Report. Published jointly by FAO and WHO. 65 pages. $ 1.25 or 6s. 8d.

A Study on Tenurial Conditions In Package Districts by Wolf Landejinsky. Brought out by the Planning Commission 59 pages. Re 1.

Manpower Journal Vol. 1 No. 1. Institute of Applied Manpower Research. New Delhi. 204 pages. Annual subscription: Rs 12. Per copy: Rs 3.

Social Force for Social Welfare by Dr Shanti Prakash Gupta. Lucknow. 110 pages Re 1.

Fisheries in Indian Economy by S.N. Bhattacharya. Published by Metropolitan Book Co. (P) Ltd., Delhi. 98 pages. Rs 6.

The Third Five Year Plan of the Indian Union—A Pictorial Presentation. 105 pages. Rs. 3. *Jawaharlal Nehru on Community Development, Panchayati Raj and Cooperation.* 165 pages. Rs 1.75. *Financial Control in A Welfare State—Trends in India* by B.B. Lal. 128 pages. Rs 4.50. *Man Behind The Figures.* 31 pages. 50 paise. *The Indian Experiment.* 35 pages. 50 paise. All published by the Publications Division.

Lessons from a River Project

S. SUBBARAMAIAH

The Sharavathy Project of Mysore has shown the need for being ready with alternative designs. It has also revealed the unsuitability of the tender system for big works.

RECENTLY the second generator at the Sharavathy hydro-electric project was commissioned in Mysore State.

The Sharavathy Project, designed and constructed mainly by Indian engineers, is a major project and the largest recipient of American aid (Rs 48.7 crore) among the projects in our country. It will make a big difference to the power picture of India.

To the student of planning, the Sharavathy project, in addition, has some lessons to offer. The execution of the project has in fact occasioned considerable public criticism. Even if part of it has had political motives, there is a large area of established truth. *'A White Paper on the Sharavathy Valley Project* was placed before the Houses of Legislature on March 2, 1964. Three conclusions that can be drawn by an objective reader of the document are : (1) The designing of the project and the programme of work as a whole did have an alternative plan in case the initial assumptions went wrong. (2) The planning of the project was based on inadequate knowledge of the available agencies for contract work. (3) The tender system is rigid and therefore unsuitable for allotment of work to contractors.

Two peculiarities of the project may be noted. One is that the project is located in the Malnad region of the Mysore State and therefore the work-season is limited to barely six months in a year. If the monsoons come early and last longer, the work-season is accordingly reduced. Resources committed for the project had therefore to remain idle half the time. The second feature is that sand and shingle were not available at the project site. Time, and, to a smaller extent, the non-availability of building material were the two constraints to the construction programme.

One of the basic reasons for the traumatic experiences of the Sharavathy Valley Project was that at the very beginning the design of construction was found unsuitable as the assumed rock foundations were not available. This led to a series of changes disintegrating the entire process of work. Getting an alternative design for the earth dam, instead of the originally planned masonry dam, took over 24 months. Virtually the entire process of designing was organised afresh. Even the design supplied by the Central Water Power Commission was unrealistic in that it required the use of materials which were not available at the project site. This process of designing the earth dam meant a four-fold increase in the stone work on filters on the upstream and a twofold increase in the rock-toe work on the downstream.

More complicated than this was 'the double handling of the materials'. Elsewhere in the project, tendered and allotted work became unnecessary, in view of the revised designs. Fortyfour per cent of the quantities stipulated in connection with a particular item of work were found to be surplus. Because of the disintegration of the process of work and the disruption of the flow of work, spillway work on the right bank had to be suspended for three work-seasons.

To recall all this is not to question the validity or the necessity of redesigning some sections of a project. But it is obvious that alternative plans, programmes, and designs should be prepared in advance so that construction work and the integration of the several works may proceed without loss of time.

Planning literature employs defence terminolgy to a large extent—wars are waged on poverty, plans of strategy are discussed and approved targets are identified and fixed under these plans! It is but right that plans and programmes of work, if they are to be significant guides for action, should have alternative plans too.

Failure to formulate an alternative plan apart, even the approved and adopted plan was based on inadequate study and understanding of the nature and size of the available contracting agencies. If the project planners had this information, most of the difficulties relating to the contract work could have been avoided. The project could have been more realistically phased, and the size of individual items of work more realistically determined.

Without such study of the structure and size of the contracting agencies, the Sharavathy Project work was divided into two stages. The first stage consisted of the construction of two dams, one with six sections of chainage, two tunnels, an RCC duct for the power channel, an earth dam and an earth dyke, and rock-fill on the upstream, and a dam mound besides the supply of *surki* and burnt hydraulic lime. The second stage of work consisted of the Linganmakki Dam spread out in five sections.

To undertake and complete these individual items of work within the stipulated time was beyond the means of most contracting agencies. In the beginning stage,

for instance, only three contracting firms offered their tenders. Acceptance of this work meant an unusual degree of technical competence, large capital, both working and fixed, a big organisation and labour force.

Referring to the upstream rockfill work the White Paper estimated the responsibilities as follows: "...it involved a fleet of about 250 transport lorries with a reserve of another 50 lorries, besides a large number of stone-crushers, rock-drills and compressors and large quantities of drilling rods, explosives, detonators, etc. A proportionately large labour strength was needed and all these preparations would need three to four months under the prevailing conditions".

The resources and capabilities of the three contractors were not such as to permit the entire work being given to any one of them, and almost all the contractors working for the Sharavathy project wanted and got some sort of financial assistance or other. In fact, interest-free advances were made to all the contractors and Appendix X of the White Paper shows the amount of machinery advances paid to the several contractors. Even the Public Works Department was ill-equipped to undertake the work when the Hydro-Electric Construction Projects Board allotted it the compaction work. The department did not have all the compaction machinery to proceed with the work and it had to be entrusted to one of the contracting firms.

The lesson therefore is that the size of individual items of contract should be reduced, in present engineering and other technical conditions, to the size of the available contracting firms or, if the technical and engineering conditions do not permit such a reduction, measures must be included in the plan itself for raising the size of the contracting firms. The machinery advance given by the Board and the splitting of the work among the three contractors themselves constitute such adjustments in size.

The very size of the project, the nature and complexity of the construction activities, the revisions of designs and the frequent changes in the process and flow of activities demonstrated that the tender system of selecting contractors and fixation of rates for the various items of work was unsuitable for a large project involving a variety of independent works.

The very first tender for work at the project had to be terminated because the contracting firm got itself dissolved. The rigid agreement over details between the project authorities and the contractors, which completely ignored the dynamic nature of activities in the project construction, led to a series of disputes. Final settlement was not on the basis of the tender agreement but on the basis of mutual understanding, persuasion and business-like negotiation. Thus the project authorities wanted an agency to take up the compaction work which was allotted to the P.W.D. A contracting firm had to be persuaded to accept the rockfill work, and in respect of the rock-toe work there was hardly any time to call for tenders. Again one of the firms was entrusted with the work after negotiations. By abandoning the tender system the project authorities secured economies in terms of expeditious work and expenditure. In one instance alone allotment of work through negotiations, it was claimed, led to savings of Rs 32 lakh.

These inadequacies in planning and lapses in their execution do not, however, diminish the significance of the fact that the Government, and several subordinate agencies like the Hydro-electric Construction Projects Board, the civil engineering sub-committee and others, must have shown a concern for speedy execution of the project, a preparedness to break through the official routine to reach the plan targets, and above all a flexibility that is characteristic of enterprise and achievement. The redesigning of the project, meeting the unanticipated stresses and strains in the disintegrated process of work, rejecting the tender system wherever it was useless despite official requirements, the businesslike approach in dealing with the contractors and the commitment to reaching the targets, speak of a new vitality emerging in Government undertakings.

Letters

Wasted Talent

THE impact of the huge expenditure and investment under the Plans is not yet visible in our economy. This phenomenon can be well explained if we recognise the waste at different levels of our economy, including collossal wastage of talents.

There is general belief that talent is lacking. This is not true. Talent there is, but it is either wasted through inefficient use or not even recognised.

I can give an instance I know of. A leading commercial bank in Bombay employed three highly educated people, each with a Ph.D. degree backed by sufficient experience. Of these one was given officer grade and the other two (let us call them Dr A and Dr B) were placed in the junior grade with an assurance that they would be elevated to a higher post within a year or two. The one in the officer grade was given a job of sorts; of the two in the junior grade, one was asked to manage the bank's library, and the other was sent to be trained in the branches. Dr A disgusted with the type of work given to him, resigned and joined another research firm of repute. Dr B continued in the bank's service and during the years has gathered considerable experience in banking in spite of adverse attitude from the ranks. But the important thing is that he still remains in the junior grade.

There are several ways in which talent is neglected. First of all, organisations do not make full use of the talented persons in their service. Often they are asked to do the work that is far below their capacities and merit. We should not waste a Ph.D. on what a matriculate can do. And sometimes, out of sheer cussedness, talented people are humiliated.

This kind of waste is enhanced by the activities of unions and associations. Labour always demand that promotions be based on the years of service and not talent. Moreover, a large percentage of members of

(*Continued on Page 28*)

C.D. WITH FARM FOCUS

DOES IT REALLY CLASH WITH "TOTAL MAN" APPROACH?

Bibhas Chatterjee

THERE has been much controversy over the recent decision to use all the block personnel mainly for assisting agricultural production. Agriculture has been made the first love not only of the block development officers and village level workers but of the "subject-matter specialists". It is no longer the exclusive responsibility of the agricultural extension supervisor.

This shift in emphasis has caused some commotion in the minds of Community Development workers. According to some who hold firm views, such a step violates the multipurpose character of the Community Development movement and strikes at the very foundation of its philosophy. There are others who prefer to sit on the fence and wait for how things go. Some others however, are ready to go along with the new line with conviction.

What is the "philosophy" of Community Development as we have understood it ? It is that human beings desire changes in their ways of living and ways of making a living, and that this inherent urge for change can be harnessed to bring about an all-round, planned, socio-economic development in rural areas.

Community Development, thus, is a programme of mutual self-help. Its objective, summed up in the phrase "destination man," is to develop the human personality. Too much emphasis on a particular problem or a particular aspect, the purists aver, is therefore the very antithesis of the philosophy of Community Development.

Particular human problems, however important, cannot be dealt with in isolation. All problems of human life are intertwined, interlinked, interrelated. Human problems are either objective, relating to existence, or subjective, relating to consciousness, and the two never obtain in isolation. The development of the human personality, which is the avowed objective of Community Development, cannot make a distinction between subjective, socio-cultural problems and objective, economic problems. In the view of "multipurpose" people the move for preferential treatment to agricultural production, in that it singles out one element alone for emphasis, strikes at the very root of the philosophy; as a result Community Development will lose much of its appeal. It will no longer be community development but mere agricultural extension.

Let us examine this contention. Let us see whether the change in emphasis makes the movement a unipronged one. If we can prove that the shift in emphasis does not mean a departure from the multipurpose approach, we shall have squarely answered the objection.

THE recent shift, it seems to me, merely means that the efforts of Community Development workers should be centred on the activities of cultivators in raising agricultural production. It is a change in the perspective, and calls for some rearrangement of priorities, but *does not connote any change* in approach to human problems as such.

To illustrate, there is the very sound proposal to make the block agricultural farm a nucleus of the agricultural programme. Progressive farmers would be given training on the farm so that the farm as a whole is used as an effective means of demonstration. Now every extension officer has a positive role to play in making this training a success. The instructions given by the agricultural expert can be made more interesting by the use of audio-visual aids, and the social education organiser can help in it. The utility of service co-operatives can be explained by the co-operative man, while the panchayat officer can very well help the cultivator-trainees in appreciating the role of panchayats in the task of agricultural development. The block development officer himself will be there in planning the entire programme of training and in making arrangements for subsequent follow-up in the field by his team.

Thus we find that all the "subject-matter specialists" have full scope in such a scheme for mixing with people and communicating their ideas. The only difference is that they will all share a common platform and work on a common programme. Instead of going out in different directions, they would work on and with a selected group of cultivators in an integrated manner and at one place. In fact, programme planning by the respective extension officers would become more realistic, more precise and more effective. This, obviously, does not infringe the fundamentals of the Community Development approach.

The controversy would appear insubstantial if the term "emphasis on agriculture" is correctly interpreted and understood. It does not mean emphasis on *agricultural problems* as such but emphasis on the *problems faced by an agriculturist* in raising his production. It will be a mistake to consider these two as synonymous. There is a vital distinction between them. Agricultural problems are technical, and the domain of the agricultural extension officer. The problems of an agriculturist are socio-economic in character, and are much vaster, demanding for their solution the

combined endeavours of the block team with the B.D.O. as captain. We thus come back to the "multi-pronged" approach.

A couple of case illustrations will perhaps make it easier to appreciate the vital distinction just made. The programmes for agricultural development in Package areas are fairly comprehensive and detailed, and personnel for executing the programmes are also adequate. The supply line is well geared to the task. Consequently agricultural production has registered an overall increase in the areas. I know of a particular Package district where agricultural production, both *kharif* and *rabi* has gone up by as much as a hundred per cent. This is no mean achievement.

The problem of agriculture, the objective problem of production, has been solved to a considerable extent. But the problem of the agriculturist, i.e. the problem of consciousness, remains. The problem of education, the problem of health, the problem of communication—all these persist. There has been a proven increase in the income of the agriculturist, but there is still no change in his mental attitude, and no more readiness in the matter of creating community assets or fulfilling his obligations.

My experience of working in an "adopted village" provides the second realistic example of my assertion. The adopted village in question has very progressive cultivators who miss no opportunity of getting assistance from the concerned block. Improved farming practices have made them economically better off. But efforts to repair the dilapidated school building through voluntary labour and contribution proved futile because, in their opinion, education for children is wasteful, and does no good. This is due to the fact that all emphasis was laid right from the beginning of the block on the problems of agriculture in disregard to the human problem.

Obviously, the people of the village have not been able to reap the advantages of increase in money incomes by developing into useful and responsible citizens. The village continues to be steeped in conservatism and ignorance; the traditional vices flourish. The village bears out the fallacy of the belief: "If only we take care of agriculture, agriculture will take care of us."

THE illustrations go to show that dealing with the problems of agriculture alone will not lead to the automatic solution of the agriculturists' problems. They also bring out the importance of solving the agricultural as well as the agriculturists' problems through the Community Development staff who combine technical competence with a social vision and have the total personality approach.

The controversy has made the Community Development workers shake off their complacence. It might even revitalise the programme and review the faith that the movement is bound to forge ahead and serve rural India all the more. It is a programme that touches the maximum number of people, institutions, beliefs, social customs and behaviour patterns. It is the only instrument of bringing about socio-economic progress in the countryside.

The recent shift in programme emphasis brings about a change in the form, but not in the content of the programme. It aims at making the programme more practical, integrated and thorough. If we work it with sincerity and conviction, the programme will prove to be a better tool in bringing about all-round development in rural India.

(The author wishes to thank Mr S.N. Banerjee for making his study of several Package districts available to him.)

STATISTICS

(Continued from Page 18)

and services originating within the geographical boundaries of the States and not the total income accruing to their residents. These estimates thus ignore the flow of income across the boundaries of the State. Moreover the State Statistical Bureaux use different types of data and varying methodology to prepare the income estimates which are not therefore comparable and cannot be technically fully accepted. Efforts have now been initiated by the Central Statistical Organisation to streamline this work by evolving uniform techniques, concepts and definitions.

Collection of statistics as between the Centre and the States is determined by the responsibility for the subject matter concerned. As such the nature and structure of the statistical organisation is governed by the Constitutional classifications of subjects. In actual practice, even in those subjects which are assigned to the States, the Centre acts as the co-ordinating authority for presenting the data on an all-India basis.

The foremost among the Central organisations for compilation of statistics on a national scale is the National Sample Survey Organisation created in 1950. Its field wing is the National Sample Survey Directorate which functions under the Cabinet Secretariat and the technical wing is the Indian Statistical Institute. The Central Statistical Organisation (CSO) is the central co-ordinating agency for the National Sample Survey.

The National Sample Survey Directorate is responsible mainly for the field work of the various surveys, except in agricultural statistics. It has a field staff of 1,600 located in the various States, who, in collaboration with their counter-parts in the States, collect and furnish data at the State level.

The results of the surveys are then processed at the Indian Statistical Institute. This has resulted in producing statistics on a large number of aspects of the economy which are of uniform quality from State to State and region to region.

Besides the National Sample Survey, the employment exchanges of the Ministry of Labour and Employment, the Census Superintendents under the Office of the Registrar-General, and the statistical agencies of the Ministries of Food and Agriculture and Transport collect various types of data at the national level.

The organisations mainly responsible for the collection and maintenance of statistics at the regional or State level are the State Statistical Bureaux, the statistical cells in the State Government departments, district statistical offices, progress assistants at the block level and primary and supervisory agencies at lower levels such as *tahsildars*, *patwaris* and village level workers.

Based on a paper presented by Dr. K.R. Nair at the 35th Session of the International Statistical Institute, Belgrade, September, 1965.

PIG IRON PLANT IN PUNJAB

THE Punjab Government will set up a pig iron plant near Hissar at a cost of Rs 3.5 crore. The plant will have an annual capacity of one lakh tonnes of foundry quality pig iron, to meet the requirements of industries in the State. Work on the plant will begin early next year and production would start by the end of 1967.

The plant will use iron ore from Mohindargarh, 128 kilometres from Hissar.

BRIDGE ON DON

The foundation stone was laid on August 28 of a bridge to be built on the Don river near Hittanhally (Mysore) on National Highway No. 13. The bridge will cost Rs 15 lakh.

SNIPPETS

India's exports in 1964-65 were valued at Rs 815 crore, an increase of Rs 101 crore in two years...The exports of tea during the four months April to July this year amounted to 43.22 million kilograms valued at Rs 25.33 crore, an increase of Rs 2.44 crore over that in the corresponding period of last year...Exports of cashew kernel were 34,027 tonnes valued at Rs 18.3 crore during January-July 1965 (Rs 3.54 crore more than in the corresponding period last year). The export of cashew shell liquid during the seven months totalled 7,400 tonnes, valued at Rs 1.19 crore...Canada will supply India about 1.5 lakh tonnes of wheat this year...The Parbati irrigation project in Bharatpur district of Rajasthan extended its irrigation facilities to 20,000 acres of land in 1964-65...The State Trading Corporation will export to the Soviet Union bananas worth Rs 8 lakh under an agreement signed recently. Another agreement has been signed for the export of mango and pineapple juice...Three members of the British Steelworks Equipment Consortium have come to India for discussion on the proposed expansion of the Durgapur steel works.

As The PLAN Moves

H.E.L'S HEAVY MACHINES

THE heavy rotating division of the Heavy Electricals, Bhopal, has gone into production. It will manufacture heavy rotating electrical machines like turbo-generators of capacity up to 150 MW, large water-wheel alternators, large A.C. and D.C. machines. This machinery will be used in hydro-electric and thermal power stations, diesel engine sets, steel rolling mills and other heavy industries and mining.

India Makes Surgical Tools

The surgical instruments factory at Madras has been formally commissioned. Set up with Soviet assistance at a cost of Rs 5.25 crore, the factory will manufacture 25 lakh surgical instruments valued at Rs 2.7 crore every year. (See article in *Yojana*, April 11, 1965)

FACTORY FOR MEDIUM TRACTORS

A FACTORY to manufacture medium tractors and other agricultural implements will soon be set up in the public sector. An agreement for collaboration has been signed with Czechoslovakia. Costing Rs 17.2 crore, the factory will have a capacity to produce 12,000 tractors of 20 HP and 28,000 implements and spare parts every year.

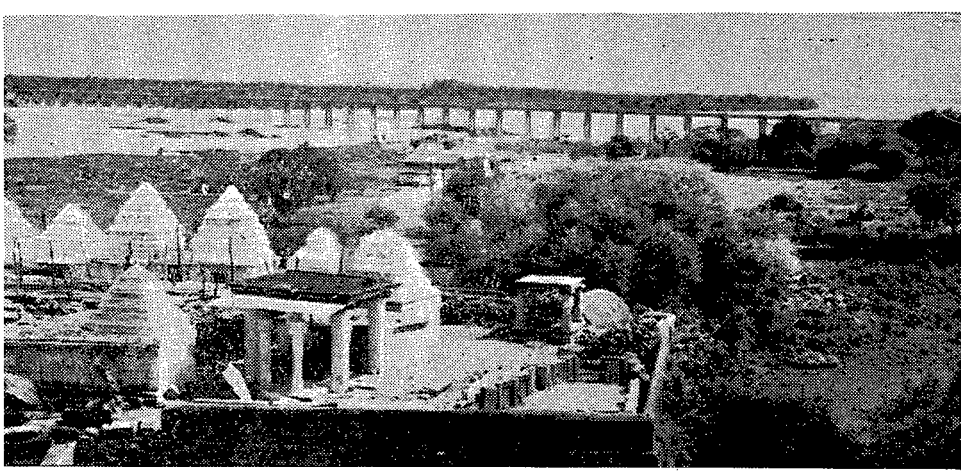
India has so far received 10,000 tractors from the Soviet Union and 2,700 more will come this year.

CREDIT FOR INDUSTRIES

The Industrial Finance Corporation of India has been given a credit of 20 million Deutsche marks (Rs 2.4 crore) by the German Bank for Reconstruction. With this credit the Corporation will have received a credit of 75 million Deutsche marks from the Bank.

Besides, the Corporation has received two other credits—40 million dollars (Rs 19 crore) from the Agency for International Development of U.S.A. and 50 million francs (Rs 4.9 crore) from French Bank of Commerce, Paris.

* Sixteen additional regional centres for workers' education have been set up, thus fulfilling the target for the Third Plan. The number of such regional centres has now reached 28.



A NEW BRIDGE across the Godavari at Bhadrachalam in Andhra Pradesh links the State with Orissa and Madhya Pradesh. It was completed in July at a cost of Rs 70 lakh.

The Politics of Poverty

from Page 5

effect on the poor, but also weakens the surge of growth and slackens the efficiency of those whom we want to draw into more productive pursuits. Politics of the poor, from any rational point of view, cannot seek a flat sharing of poverty but has to work for the priority of investment over non-basic consumption which eats into the possibilities of employment, together with the provision of basic consumption to the millions. Men who wish to avoid becoming victims of uncontrolled social change must consciously organise the changes themselves.

The Ultimate Solvent

Economic growth is the ultimate solvent of our poverty, want, and gross misery. That growth, in our conditions, remains impeded without the widening social changes. Welfare of the people, I would like to emphasise, is the end result of growth and change and not a substitute for either of the two. Shall we deny education to our young people, shall we evade provision of productive skills to them, because we resent imposts to finance those activities? Should provision of drinking water for the people be put off to permit us our comforts? Can India of our dreams emerge where each one seeks an island of security in the whirling sea of deepening want? Can the islands remain safe against the irresistible waves of change?

We have been depending on external assistance for reaching a 13 per cent rate of investment in our economy even when our savings account for only 10.5 per cent of the national income. I believe that as the poor have a claim over the resources of the rich, so also poor nations can seek aid from rich nations, if the concept of world community has any meaning and world peace is to abide. There is another reason also, which we may not emphasise but that we should not ignore. The reason is crisply stated by William McCord in his book, *The Springtime of Freedom* :

> "In essence, the developing nations of today subsidised Europe as it began its economic advance (through the Colonial Drain); surely, this fact alone indicates that Western aid today should be regarded not as a sentimental gift, but a just return on investment."

As international peace cannot survive if rich nations ignore the needs of poor nations: ultimately, they would have to spend far more of their resources in money and men in combating wars and disturbances than is needed for fostering economic change; so also within our country, if the upper sections of the society resent the demands of development on their earnings, the resources they will ultimately have to find to maintain civil peace will be perhaps more. Tragically, the resources diverted to peace-keeping, international or social, add little to the progress of man. By resisting the worthwhile, often one is driven to succumb to the worthless.

It is the logic of development that those that have tend to get more. The rich nations will be able to use constantly new technology and augment their resources faster than poorer countries. In the developing countries, regions that have moved forward will progress faster than the sluggish and the stagnant. The existing industrial corporate concerns in our country, for instance, will have about Rs 1,050 crores of depreciation funds and Rs 900 crores of retained profits etc., during the Fourth Plan period. They will thus expand and proliferate. It is this characteristic of growth that validates the principle of redistribution, of transfer of resources from the better place to the badly set. This is the *raison d'etre* of welfare economics everywhere. In a country like India, just the elementary needs of the people—food and work—require stringent transfers of resources. Even when one reduces the content of welfare to the bare minimum and consciously links it with growth activities, the need for transfers remains massive, because the humanity to be reclaimed from utter morass of want is staggering in its numbers.

Accent on Social Change

Elsewhere it was possible to choose between economic growth and social change. It was also possible to arrange them in some sequential relationship. In India, if growth is pursued by itself, it will never gather strength. Its ambit will remain narrow and precarious. For a short while *enclaves* of development and prosperity will emerge, but they, lacking spread-effect, will remain insecure. The modern sector of the economy will reach limits of expansion if the traditional sectors do not grow, that is, expand and modernise. If economic growth is to achieve sustained momentum, it will have to be stoked by social change. It is not ideology that leads us to lay accent on social change—that is, hewing down of economic inequalities and of social privileges—but the demographic and sociological facts that are stubborn and intractable.

In some countries economic growth opens up a margin of welfare and so permits muffling or delaying of social change. In India the growth itself is a function of the change—the latter enables and triggers the former. Our conditions, compared to the general run of things the world over, are far from normal. They are in fact critical, because we have no margin of tolerance. We are, because of our abject poverty and massive numbers, the world's ultimate proletariat.

This then is my answer to a nagging question in you —whether I plead for national politics or class politics. For me the two are one. We need community consciousness and community solidarity to salvage ourselves. It is not enough to have an open society that we claim to build, it is necessary to have communitarian attitude and approach. A century of experience has made obsolete the controversy between national politics and class politics even in the wider world. Each has to inform the other. Even if we opt for class politics, a ruling stratum will emerge. That stratum will get panoplied in privileges unless it retains its sense of purposes and dedication. Only that leadership will be able to lift our grinding poverty that has luminous purpose and dedication. The objective constraints that operate on us will permit escape to none. Subjective response that

has come cannot be confined to politics alone; it has to be the product of the *ethos* as a whole.

In no country did new forces stir and burgeoning follow until there was intellectual unrest and cultural efflorescence. To challenge the old and articulate the new, is the essential intellectual prerequisite of economic and social growth. In our inherited culture there are many elements that enrich us and must abide. But to seek the fruits of science and technology one has to adjust oneself to the structure of modernity. These cultural stirrings have to reach out to the poor if they are to become active agents, and not passive objects, of history. It is necessary to impart freshness and fecundity to their cultural awareness. To paraphrase Marx, it is not necessary for the culture of the poor to suffer from poverty of culture !

Penumbra of Politics

You are by now, I know, probably thoroughly outraged. What has this hocus-pocus of planning to do with politics, whose substance we know is drawn from caste and community, from local grievances and regional peculiarities, from personal frustrations and group antipathies? I plead guilty to the charge—but only partially. Politics always operates in its peculiar penumbra. Intransigence and intractability of limited loyalties are among the operational media of political action. That is so not just in India but the world over. Again, it is not a bane of politics alone, it is inherent, instinct, in all group life: Lord Buddha had to expel a close disciple from his nascent Sangh, Jesus Christ was betrayed with a kiss to the Roman legions by his immediate associate. Socrates was given hemlock by his fellow citizens.

Group affiliations and aspirations will always operate in politics. But they have to be suffused with understanding, endowed with purpose and direction. That is the real essence of politics. A voter votes on myriad differing considerations, but when the votes are counted a certain pattern of opinion is revealed. It is that pattern of opinion and understanding one has to influence and shape, though none can organise the wayward impulses behind every vote. India's politics is "of scarcity", as Myron Weiner has aptly described it. Politics of scarcity can easily degenerate into politics of scramble. Such politics can only damage the poor; scramble would aggravate the difficulties and it is the weak and the vulnerable who would suffer the backlash. The poor have a greater need for planning than the privileged because without such efforts economic growth, to the extent there is, will tend to be beneficial to the latter. When scarcity rules the lives of the people, the need for a clear focus, deeper understanding and collective discipline is inescapable.

Politics of poverty implies a deeper understanding and specific orientation. It requires involvement in social change by closest association with those whom Gurudev Tagore called, "the lowliest and the lost" It is the return to the worship of God as poor as Gandhiji envisioned it. Any lesser politics is shadow boxing on the brink of a precipice. The poor, just because of their poverty, will not automatically discover the path to transformation. Pandering to their prejudices, even those emanating from injustice and raw wants, will not release the dynamism required for effective deliverance. The effort needed is not brief and dramatic but sustained and purposive. The poor, in India, have a long row to hoe, before the dead crust of centuries is transformed into soil that laughs with golden harvest. Given the key role of leadership in economic growth process, political change itself becomes an area of conscious action. Development that would enable poverty to be overcome requires interaction among political, cultural and economic factors. Even the narrow question of mobilising additional capital for economic growth is made possible only by a *determined* leadership. It is clear that what development needs is not only consensus nor pure coercion, but a *consensus-coercion-continuum*: a widespread consensus that does not hesitate to coerce the intransigent when necessary.

The poor have to continuously precipitate the crisis—of conscience and of politics. Once Gandhiji made it impossible for us to acquiesce in subjection. Likewise, the meaningful politics of today has to make it impossible to acquiesce in mass poverty and gross inequalities. As those who sought to escape from the crisis that Gandhiji precipitated lost significance in the land, so must those who escape to their islands of security forfeit the confidence of the people. It took nearly thirty years of determination and dedication to achieve political freedom; given the same determination, it should not take more than twenty years to ensure for us economic freedom.

The Lever of Development

Those who accept these insights and understanding as crucial and vital for the nation will turn their energies to institutional innovations and constructive politics that would give the needed direction and dimension to the poor man's unfolding understanding and efforts. Politics will then mean not playing musical chairs in stagnation, but activising the escalator of development and change. Austerity and Egality will be viewed not as irksome burdens but as expressions of community solidarity and adjuncts of development. We shall be then not lost in weaving the cocoon of frustration around us, but in discovering in shared efforts the satisfaction of creative transformation. Politics of poverty can mean merely messing about in the morass of stagnation, it can also mean occasional explosions of mass anger. But we can, if we only will, make it the decisive hammer of history that can shape for our people the destiny that we dream of. In my humble opinion, Pandit Nehru was guided by considerations of the kind outlined above. That is why he made Planning the lever of development. "Planning", as Prof. Rudolf Bicanic recently put it, "increases the importance of political action." In the evening of his life, Pandit Nehru heroically gathered his failing strength to give a mighty heave to such a policy. He was fully aware that the cost of change increases as time passes. Time can be a terribly frustrating force. Hence the urgency in his final summons to revitalise and reorient our political action. The very magnitude of the task, he was convinced, would provide incitement to determined effort. A nation cannot be built on unproductive toil, parochial loyalties, and misery that has come to be realised as remediable injustice. The leaders that have left us have given us the vision. It is for us to enshrine it in our life.

Letters *From Page 22*

these associations are from the promoted cadre and have little sympathy with people who have better qualifications and experience.

In order to put a stop to this wastage the following changes should come about:

(1) Talented people should be appointed in grades appropriate to their qualifications. If they are started as junior officers, they must be elevated to a higher grade as early as possible.

(2) Work should be entrusted according to abilities.

(3) The highly qualified people should also be given intensive executive training.

(4) Associations and unions should learn to promote the interest of the talented.

Thana G.V. KULKARNI

MAKE IT TOPICAL

YOUR issue of August 15 would have been much better if you could have made it an Independence Number and included a few articles on the mid-year appraisal of the final year of the Third Five Year Plan.

These days, topics dealing with economic growth have become important in view of our Plans. I think it will be better if you can give at least one article in every issue dealing directly with one aspect of economic growth, for example economic growth and planning, capital formation and economic growth, prices and economic growth, agriculture and industry, taxes and so on. Foreign trade, foreign exchange, standard of living, national income, distribution of wealth, population etc., transport, housing etc. are also themes which interest the people. I hope that you will give due consideration to my suggestions. The article on 'Economic Growth and Education' by Prof. V.K.R.V. Rao and the article in another issue on electricity and economic growth were very useful.

Rohtak M.M. SINGHAL

ONE OR CHAOS

THERE can be only one person to lead a nation. In history he is known as the king. In case there are kings more than one the nation passes through chaos and confusion.

In the interest of welfare of the Indian nation let there be only one official language. The English language is understood by all the States. Let it not be disturbed so that peace and order may prevail.

Tanjore R.V. IYER

THUMB IS ENOUGH

Uneducated people are interested in opening accounts in banks. The difficulty is that they cannot sign their names properly on cheques. If thumb impressions are accepted by the banks, as they are by the traditional moneylenders, the illiterate people will be in a position to open accounts and thus help the banking business to grow. Will the banking authorities consider the proposal?

Bangalore M.R. VASUDEO RAO

A Cheerful New Harijan Colony

A new Harijan colony has taken shape in the Madras village of Karanipuducheri, opening new hopes in the lives of 42 families. Self-help has been the driving force of this development.

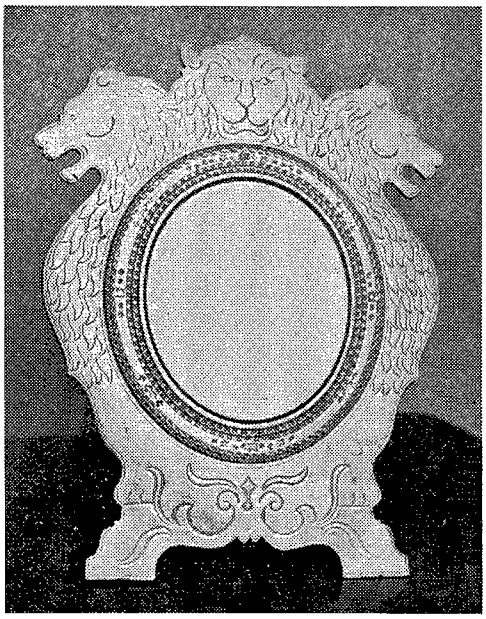
For more than a generation, a group of about 40 Harijan families were living in very backward conditions in a low-lying area. Attempts had been made by a few leaders of this village in Kattankolathur block since 1936, to obtain suitable land from the Government for cultivation and housing. A few acres of forest was offered to them, but they could not derive much benefit.

Their way to success was paved when a co-operative Harijan Land Colony Society was started in 1962-63 with 42 members. Each member was allotted two acres of land. A grant of Rs 17,000 and a loan of Rs 6,000 were sanctioned to the society. And, with this assistance, the members of the society worked hard and converted the barren land into smiling fields. More than half of the society's members have purchased bullocks with financial help from the society.

The members put in their best efforts in agriculture. They cultivated paddy, ragi and chillies. In 1963-64 they even raised a second crop. They plan to deepen a near-by pond and develop it as a small tank to ensure irrigation.

These Harijan members are their own employees. Hence their cultivation expenses are comparatively low. They have been able to save and pay back the loans granted to them. The society provides them many facilities. Today, they have a number of assets, such as sprayers, dusters, double-bullock carts and modern agricultural implements.

An added distinction of Karanipuducheri is that it is one of the cleanest villages in the State.



Kerala's Unbreakable Mirror

ARANMULA, a sleepy Kerala village, becomes in August-September every year a great eyefill for the spectacle-hunting tourist. The regal snake-boat regatta is held there, in which hundreds of bare-bodied oarsmen paddle through the Pampa river.

But little Aranmula, famous for its *Vallom Kali* and its Krishna temple, has one more precious thing to offer: a metal mirror. It is the gifted handiwork of the poor village artisans.

Tradition has it that the mirror was born of chance. About 400 years ago, the chief of the temple committee of the place invited a few professional smiths from far-off villages, gave them lands and wanted them to cast vessels in bronze. The smiths, locally called Kannans, failed to get a good metal casting. The chief was furious and threatened to take back the lands. When the smiths, with prayers on their lips, were melting the usual alloy of copper and tin, the women threw all their ornaments made of pure tin into the vessel as an offering to the gods. The molten alloy glistened like silver and when polished it could reflect images clearly. The smiths made a crown out of the alloy and presented it to the deity, which came to be known as "mirror idol".

The smiths succeeded in making mirrors out of the alloy and the chief of the temple committee encouraged them by including a metal mirror among the *ashtamangalyam* (eight auspicious things). This created a demand for it.

Great patience and care go into the making of the mirror. Its alloy and the method of casting were, until recently, closely guarded secrets of a few families in Aranmula. But, with modern methods of analysis, the method has been found out and production is now successfully undertaken by the School of Arts, Trivandrum. An 18-month training course in metal mirror manufacture has been started under the Third Plan at Aranmula.

38,000 SCOOTERS IN A YEAR

India produced 38,000 scooters, auto-rickshaws and motor-cycles in 1964-65, against a licensed capacity of 70,750. This year, 13,536 scooters were manufactured till July.

The indigenous content of scooters is being raised to 85 per cent this year.

Eight new companies were granted licenses this year to set up factories for manufacturing scooters and two of them have already gone into production.

West Germany has submitted a project report to the Government of India for the manufacture of mopeds (scooterettes) in India, in collaboration with Indian industrialists.

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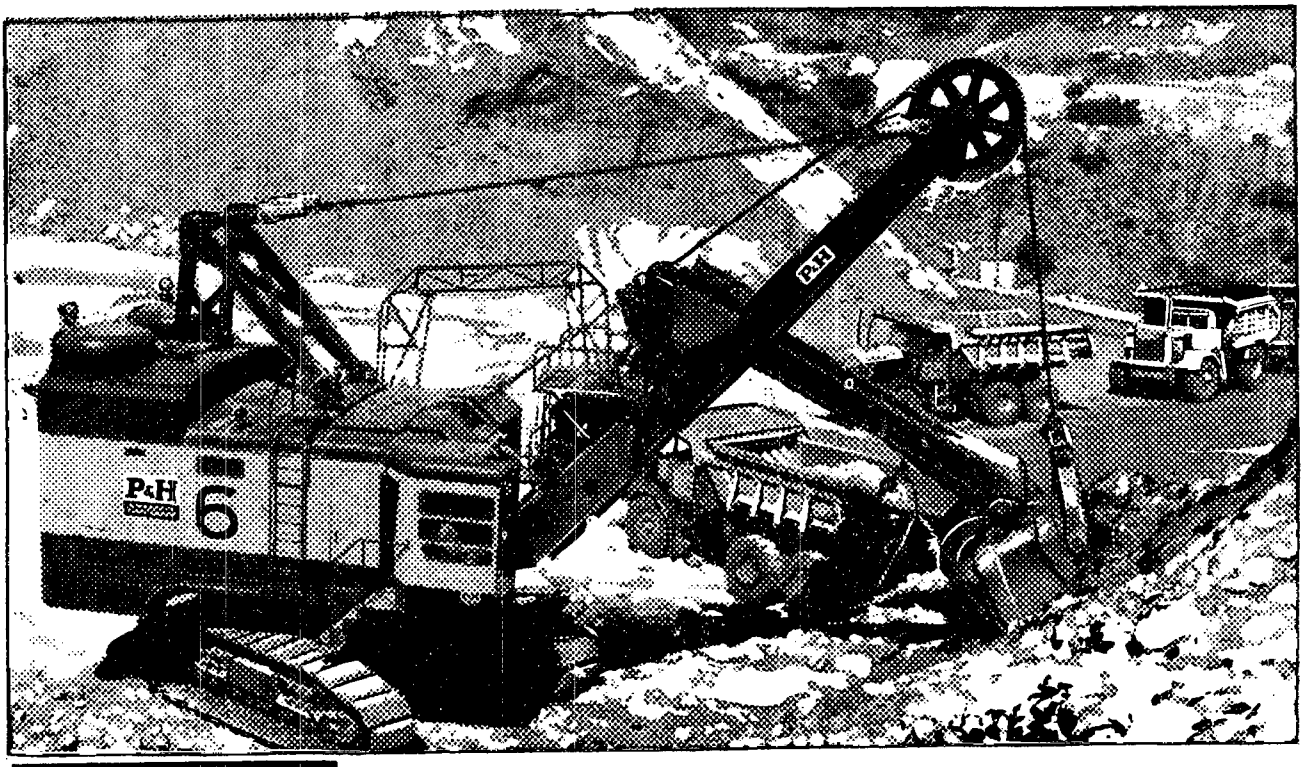

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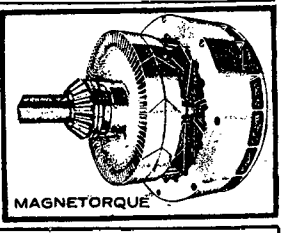

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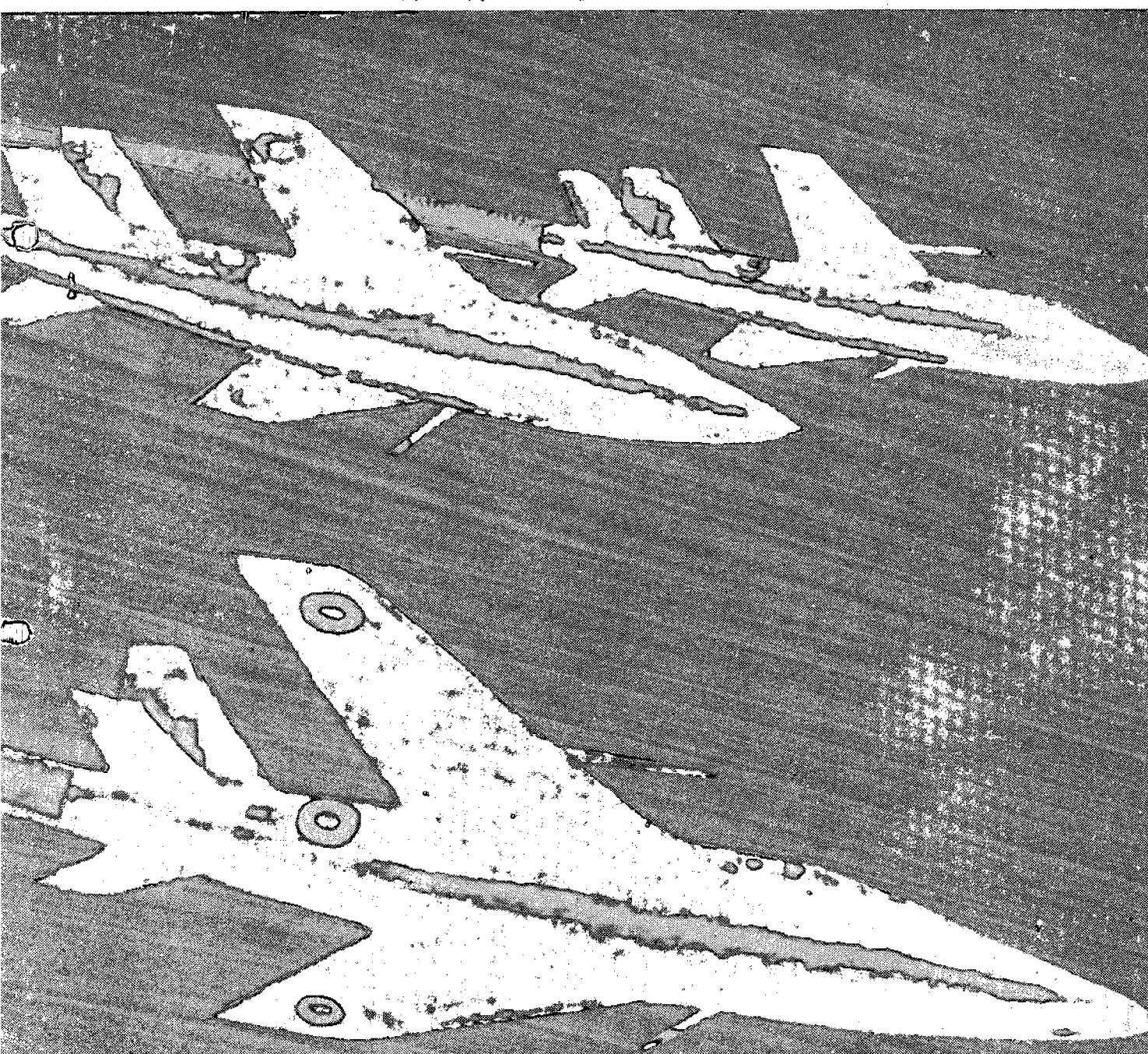

THE GNAT—MADE IN BANGALORE

INDIA—PAKISTAN : Economies Compared

ABOUT YOJANA

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

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IN THIS ISSUE

COVER, featuring Bangalore-built Gnat fighter aircraft, is by JIVAN ADALJA

YOJANA

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TIME OF TRIAL

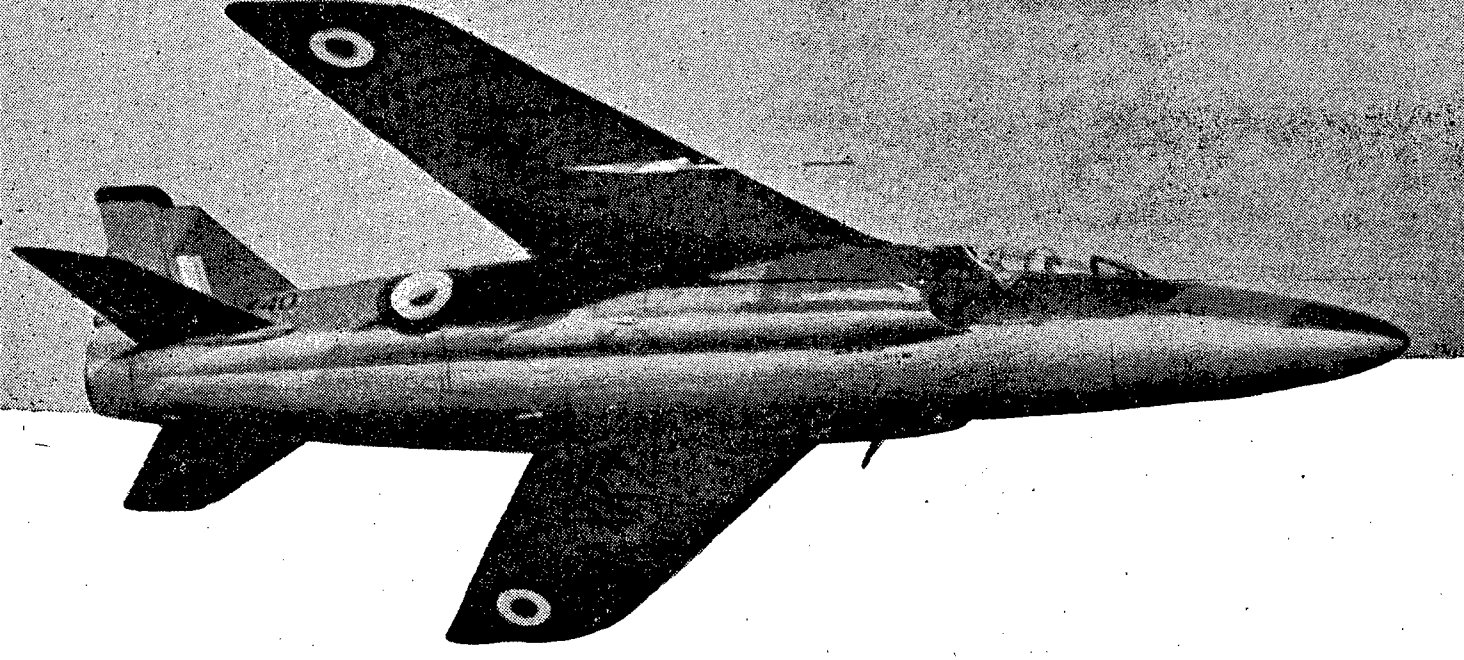
MAHATMA GANDHI, the apostle of non-violence, held that there was something greater than even non-violence, namely fearlessness. He would rather have violence than timid acquiescence in evil. The nation has been giving a magnificent demonstration of both fearlessness and readiness to stand up for the national ideals. As President Radhakrishnan observed in his broadcast, the ideals of our nation are the highest ideals that mankind has been able to evolve—freedom, democracy and human welfare. It is to defend freedom that we have taken up arms, and freedom is inseparable from the territorial integrity of our land. To cede any part of it to blustering bullies and cowardly schemers would be suicide.

Years ago, Jawaharlal Nehru declared before the joint session of the two Houses of the U.S. Congress: "We have to achieve freedom and defend it. We have to meet aggression and to resist it, and the force employed must be adequate to the purpose. But even when preparing to resist aggression, the ultimate objective of peace and reconciliation must never be lost sight of, and heart and mind must be attuned to this supreme aim and not swayed or clouded by hatred or fear."

We achieved freedom and we are defending it. We are meeting aggression, and doing it in a manner that has converted the scoffers to admiration. The force we are employing is adequate to the purpose —neither less nor more. We are careful in not widening the issues beyond what the situation demands. As we made clear the very day President Ayub announced that his country was at war with India, we are not at war with either the State of Pakistan or the people of Pakistan. Our aim is only to cure them of the insolence of power by depriving them of the armament that they have shown themselves incapable of controlling. Above the harsh din of batttle is heard the calm voice of our Prime Minister—a voice of brotherliness, a voice of reason, a voice of peace, and a voice, too, of unshakable determination and fortitude. It is a leadership schooled in the tradition of truth, courage and self-restraint; it is a leadership that upholds the Gandhian precept that above all is fearlessness. It is to this that our people are responding. It is this that reinforces and is sustained by the matchless morale of our own people —those actually doing the fighting and the civilians who are with the fighters. And little wonder that the menace of China too has failed to unnerve us.

The course of fighting depends on the quality of generalship, the valour and skill of the soldiers and airmen, the sufficiency of armament, the vision and leadership of the political chiefs, the will and hard work of the people, and what is no less important, the strength of the economy.

Owing to the far-sighted policies adopted under the Plans, we have a much stronger and more diversified economy today than when we achieved freedom. Instead of relying only on borrowed machinery and equipment we sought to build up our own basic industries. This we did not in pursuit of military strength but to build the basis of a modern economy which can provide work, wherewithal and welfare to the people. This policy now stands us in good stead. While, fortunately, we are not alone and have well-wishers in the world, we have ultimately to fight our own battles and do our own work. The courage of our jawans, the genius of our military commanders, the compelling strength and wisdom of our Parliament and political leadership and the morale of our people are for the whole world to see. It is now for each one of us to realise that wars are won not in a day but through long and patient toil. We have to put in that toil.



OUR GNATS

BLUNT PAKISTAN'S BORROWED SABRES

"VERY much superior", "highly sophisticated", "tremendously destructive", "there is no match to them": these were the uncomfortable thoughts that crossed the minds of ordinary Indians when Pakistan obtained F-86 Sabre jets and F-104 Starfighters from the United States under the military alliance. The Indian Air Force's battles with the Pakistan Air Force have shown that we need have no exaggerated opinion either about the Sabres and Starfighters or about Pakistan's air power.

And what's more, our own Gnat, built in our own country by our own technicians, has proved more than a match to the "superior", "sophisticated" and "tremendously destructive" Pakistani machines. Of course the I.A.F. officers have proved themselves to be the better airmen. When Squadron Leader Keeler and Flight Lieutenant Pathania, using our Bangalore HAL-manufactured Gnats, brought down the first two Sabres over the Akhnur-Chhamb sector in Jammu on September 3 and 4 the Gnats won their spurs in combat.

The Gnat is a single-seated lightweight fighter or fighter-bomber, originally made by the Folland Aircraft Company of the United Kingdom. The Hindustan Aircraft Limited at Bangalore (now part of Hindustan Aeronautics) has been manufacturing this plane since 1956 under licence. The turbojet engine which powers the Gnat is also being produced by HAL under licence from Bristol Siddeley Engines Ltd., U.K.

HAL has also been making, since 1959, a supersonic fighter, the slim, swept-wing aircraft HF-24 Mk I. This is also powered by two Bristol Siddeley Orpheus turbojet engines.

The Gnat, which means "a small two-winged fly", is called so because it is smaller and lighter than most modern jet aircraft. It weighs only 3,000-4,000 kilograms, about half the weight of the American F-86 Sabre (7,900 kg) and less than a third of the weight of F-104 Starfighter. In length and span also, it is smaller than F-86 and F-104. The Gnat is about 9 metres long and has a span of 6.75 metres while F-86 Sabre is more than 11 metres long and has a span of about 11 metres. F-104

SCIENCE NOTE

BY ROSSCOTE KRISHNA PILLAI

GREAT FIGHTING POWER PACKED IN SMALL SIZE

has a length of more than 16.5 metres and a span of more than 6.5 metres. The Sabre jet and F-104 Starfighter are both powered by General Electric turbojet engines.

The maximum speed of a Gnat is about 0.98 Mach (1 Mach=760 m.p.h. or 1,200 km) or 1,150 km per hour and it can fly to a height of 15,000 metres. The speed of the Sabre jet is slightly less than that of a Gnat, that is about 1,100 km. The F-104 Starfighter can fly at a speed of 2.2 Mach or 2,330 km per hour and can go up to 27,400 metres. The MIG-21, the single-seater delta-wing fighter that we have bought from USSR, is equal to, if not better than, F-104 in many respects. Its length, span, speed, and fighting qualities match those of F-104.

The fighters are generally used for combat in air with the enemy planes. So they are small and sturdy and are propelled by the most powerful engines. They fly at great speed, climb rapidly, and can be easily manoeuvred. They attack and destroy enemy aircraft using specialised weapons like air-to-air missiles. They outfly and outmanoeuvre opposing fighters.

Two Aspects of Air Warfare

Attack and defence in modern warfare greatly hinge on air power—the number of latest fighters and bombers on each side, their speed, range, manoeuvrability and armament. Air power gives the opportunity to aim at the heart of the enemy and to strike a paralysing blow.

Air warfare has two aspects: strategic and tactical. *Strategic warfare* consists of aerial bombing upon the enemy's sources of strength or war potential, namely vital military installations and airfields and key industries. These might be far away from the theatres of ground warfare. *Tactical air warfare* is the direct support given by fighter aircraft, light bombers and transport planes to the troops fighting on land.

The problem of striking and destroying the enemy aircraft, which now fly at speeds two to three times that of sound and at such great heights, is so complicated that the modern warplane, especially the fighter, has become an almost completely automatic weapon-system with an array of electronic, navigational and computing gear. It can detect, identify, close with and often fire upon an enemy aircraft with very little help from the pilot. The electronic devices in the plane help the pilot to locate his enemy; with the electronic computers he finds the distance of his target and then fire at the correct moment.

Phenomenal Progress of the Warplane

The development of the warplane from its infancy to the highly automated jets of the present day is breath-taking. Although the aeroplane was developed in 1905 it had only a nominal role to play in the First World War. The Germans were the first to use a fighter aircraft in World War I. It was designed by Anthony Fokker, a Dutchman. The structure was of canvas and wire, with an open cockpit. There was no armament on the planes but the flyers carried up pistols or rifles and exchanged shots in the air. In those days a speed of 150 kilometres was startling for an airplane.

It was during World War II that warplanes came to play a dominant role in deciding the course of a battle and the fate of combatants. Air power was a major weapon in every campaign of the Second War.

Jet aircraft and guided missiles appeared in 1944 and entirely transformed air warfare. The Korean War (1950-53) quickened the change to jet-propelled warplanes. The first large-scale air battles between jet fighters have been mainly between U.S. F-86 Sabre jets and the MIG-15s over Korea.

During the Second World War fighter planes attained a speed of about 640 km. p.h. By 1949 piloted aircraft had broken through the sonic barrier — that is they had flown at a speed greater than that of sound. The latest rocket-powered X-15 plane of U.S.A. has attained a speed four times that of sound.

Among the famous fighters of the war are Britain's Spitfires and Hurricanes, Germany's Messerschmidts and Junkers, France's Mysteres, America's Starfighters and Thunderchiefs and U.S.S.R.'s MIGs.

The need to fly at greater speeds and higher altitudes during war called for more sophisticated and lighter engines than the reciprocating internal combustion engine (similar to the one in a motor car) which was in use in aeroplanes from 1903 to 1939. Frank Whittle of Britain's Royal Air Force was the first to suggest the application of gas turbine for aircraft propulsion. But the British authorities were initially sceptical and before Whittle could see his novel idea actually being implemented in 1941, the first jet-propelled aeroplane, Heinkel 178, designed by Hans von Ohain, flew in Germany on August 27, 1939. The device which powered the plane came to be called a turbojet engine.

The method of operation of a turbojet engine is as follows: Air drawn in from the atmosphere is compressed to 3 to 12 times its original pressure. Fuel, which is generally 65 per cent gasoline and 35 per cent kerosene, is added to the air and burnt in combustion chambers. The mixture is heated to 650° to 950°C. The resulting hot air is passed through a turbine which in turn drives the compressor. The pressure of the air which is discharged by the turbine will be nearly twice the atmospheric. The excess pressure is used in a propelling nozzle to send out a steam of gas at high velocity which produces a thrust. It is the thrust which drives the airplane forward.

In some cases, the excess power in the turbine is used to drive a propeller through reduction gearing. Then the engine is called a turboprop. Turboprop is very much lighter than turbojet and is easier to construct in large sizes. At speeds below 800 km. and at high altitudes, turboprop is more efficient than

(*Continued on Page 23*)

A FOURTH PLAN THAT WILL SAFEGUARD COUNTRY'S LONG-TERM INTERESTS

Higher Farm and Factory Production : Outlay of Rs. 21500 Crore

Resolution adopted by the National Development Council at its meeting of September 5 and 6

THE National Development Council resolves that the overall size of the Fourth Five Year Plan should be of the order of Rs 19,000 crores investment plus current outlay of Rs 2,500 crores on the basis of the 1963-64 price level. It recognises that, in order to advance towards achieving the largest degree of self-reliance and to fulfil, by 1975-76, the objectives outlined in the Congress Party's declarations, the country has to undertake an investment of this magnitude in the Fourth Five Year Plan.

The Council realises that the large investment made in the last three Plans has not improved the standard of living of the mass of the people in the measure that was required or anticipated. This has been due in part to a more rapid increase in population and in part to an inadequate increase in agricultural and industrial production. Together with the additional burdens of defence expenditure imposed on the nation since the Emergency in 1962, these factors have caused internal prices and costs of living to rise to levels which are proving onerous to large sections of the community.

These problems have to be tackled resolutely in the Fourth and succeeding five year Plans. One of the urgent problems to be grappled with for this purpose is the effective control of population growth. The Plan allocations accordingly provide for the maximum possible effort for educating the country on the subject of family limitation and for organising an effective programme to achieve the objective of rapid reduction of birth rates.

The rise in prices has mainly been due to shortfalls in agricultural production, basically of food grains and also of cash crops like cotton, oilseeds, etc. The rise in prices of basic commodities had its inevitable reaction on the prices of all goods and on the general cost of living. To deal with this problem the Fourth Plan has to give the highest priority to agricultural production and avoid inflationary financing altogether in the scheme of mobilisation of resources.

The continued growth of industrial production at a satisfactory rate, at this stage of our development, depends very much on the availability of foreign exchange to import machinery and industrial raw materials and components. All possible efforts should be made to secure the maximum increase of our export earnings and to reduce our dependence on imports of items such as machinery, metals and fertilisers, by promoting their domestic production. The Council recognises, however, that with increase in industrial production as planned there would necessarily be an increase in imports of various kinds of materials, some of which are not available at all in the country and others not produced in large enough quantities.

The Council is of the view that taking into account the need for imports of substantial quantities of machinery and equipment to meet the requirements of Plan projects as well as the large obligations on account of repayment of foreign loans and interest charges during the Fourth Plan, the quantum of foreign assistance for the Fourth Plan will have to be substantially larger than in the Third Plan. The assistance that will be available will depend largely on the goodwill and ability of friendly foreign countries and our earnestness and determination to take all effective measures, within our competence, to implement the Plan.

The Council makes an appeal to workers in farms and factories to contribute their share for the success of the Plan in a disciplined way to put forth their best effort despite the difficult conditions in which they have to work. To those sections of the community which are better off, the Council makes an appeal to restrain expenditure and avoid conspicuous consumption and waste. They have to accept a much larger share of contribution to the national effort both in the interest of the community at large and their own self-interest.

The Council feels confident that, at this time when the country is engaged in meeting the challenge of serious external threats and has to undertake massive efforts for development, the nation will rise to the occasion and demonstrate its inherent strength and solidarity. The Council authorises the Chairman to re-orientate, alter and amend the Plan as necessary to meet the emergent situation and safeguard the country's security and long-term interests.

WE SHALL FIGHT FOR FREEDOM AND DEVELOPMENT

THE PLAN IS ESSENTIAL FOR DEFENCE, SAYS PRIME MINISTER

The National Development Council, which met in New Delhi on September 5 and 6, decided that the Fourth Plan, with an outlay of Rs 21,500 crore, should concentrate on higher agricultural and industrial production, and avoid deficit financing altogether. In view of the present threat to the country's freedom and integrity, the Council authorised its Chairman, the Prime Minister, to make any changes in order to give it a defence orientation.

Addressing the Council, Mr Lal Bahadur Shastri said, while fighting to preserve freedom we cannot give up the important work of economic development, for development was essential even for defence. Mr Shastri observed:

WHEN we met here last, it was felt that we should increase the size of the Plan from Rs 21,500 crore to Rs 22,500 crore. This increase of Rs 1,000 crore in the public sector would generally meet the needs of the country and also to a larger extent meet what our States want. This matter was carefully considered here and several exercises were carried out. Ultimately, the Resources Committee and the Planning Commission came to the conclusion that it was not possible to raise resources for the public sector beyond Rs 13,850 crore. In the circumstances, we had to decide what the size of our Plan should be. The Planning Commission had a number of meetings to consider this and at the last meeting of the Planning Commission, where I also happened to be present, it was decided that we should have a Plan of Rs 21,500 crore because it was essential that we keep within the limit of the resources available to us.

I think that keeping everything in view, this Council will also agree that we should have a Plan of this order and as far as possible we should not go below it. The size of the Plan is, no doubt, important but its content is even more important and in fact it is the content which would provide the result. There are various sectors in which we have to spend big amounts and they are essential. *But naturally the highest priority has to go to agriculture.* I think, agriculture, industries, irrigation, power, road transport, education and medical facilities are some of the important subjects which have to be given hgh priority. But, as I have always been emphasising, the need for increased agricultural production is paramount. Most of our economic development in fact depends upon agriculture and increased agricultural production. Again, in regard to prices and our foreign exhcange difficulties, we cannot achieve much without higher food production. We cannot for ever depend on imports from foreign countries.

It is stated in the Draft Memorandum that at the end of the Fourth Five Year Plan, we shall become self-sufficient in the matter of food. But just for precaution's sake, I would say that we should at the very least be in a position to drastically cut down our imports. We have therefore to provide the largest funds for agriculture. But the main question to consider is whether we can absorb the funds provided. The development of agriculture is a much more difficult process than the setting up of industries because it is a decentralised sector. You have to do it over a big and extensive area. And there is, if I might say so, not enough of co-ordination between the different wings of the Agriculture Department. It is, therefore, not an easy matter to absorb the funds provided for agriculture. We should see to it that agriculture will not suffer for lack of funds. If the allocations made are spent and are utilised and if more money is needed we should not hesitate to cut down something else and provide the necessary funds for further expenditure on agriculture. In fact, I had once suggested and would suggest even now that in the first year the highest priority in regard to funds should be given to agriculture. We have to give our fullest attention to agriculture in the first year.

I do not say that other things must be cut down. For example, in the first year we can try to concentrate on completing all the industrial projects we have in hand and which have not been completed by the end of the Third Five Year Plan. Then we can take up other projects which would yield quicker results. So in the first year of the Fourth Five Year Plan, we will have enough work to do in every sector. But what I had suggested, and would suggest today, is that we should be prepared to make any sacrifice in the first year of the Plan with a view to providing adequate funds for agriculture. This will need an integrated Plan. I am glad that the Planning Commission is trying to prepare an integrated Plan for agriculture. I understand that a note has been circulated to the Chief Ministers, incorporating the draft of an integrated Plan for agriculture. This draft may have to be further considered and your advice will be very valuable.

Purposive Education & Power for Villages

I NEED not say much about education or medical facilities. I am glad that the Plan has not laid much stress on purely literary education. What is essential is that we should see to it that the boys who

are educated do get employment and do not remain unemployed. Merely having academic qualifications and then loitering about here and there leads to frustration. So whereas it is essential that the highest importance should be attached to technical education, we should not spend much on a large number of colleges or universities. I am all for primary education, for adult education and technical education. I do not say that literary education should not be further expanded but there has to be a reasonable limit and we have to view it in the context of all the other urgent needs we are faced with.

About irrigation, I need not say much because its importance is all very well known to us. I think our peasant who is still not so much technology-minded believes that if he gets water, he will produce much more, if not double the quantity. Therefore, irrigation, along with power, acquires great importance.

I would like to lay stress on rural electrification because it means that we can provide pumping sets in the rural area which would help peasants and provide them with irrigation facilities. Power for industry is important but we cannot ignore rural electrification. So these are some of the important sectors which should receive high importance and I know that the Planners are also thinking more or less on the same lines.

Rs. 3,600 Crore More Must Be Raised

ABOUT the resources, it is going to be a very difficult and onerous task to find something of the order of Rs 3,600 crore. This has to be done through taxation mostly. Of course there may be some other sources too, but mostly it has to be through additional taxation. And as far as I can judge, the State Governments are prepared to fulfil their quota. I have not talked to all the Chief Ministers, but last time when we had met here, I had a meeting with some of the Chief Ministers and they told me they wanted a somewhat bigger Plan. I have no doubt that they are prepared to discharge their responsibility of finding the resources allocated to the States. I do not know what they will be able to do now or in the next budget. But I got the impression from some of the Chief Ministers that they might do something even now by imposing fresh taxes or raising the rates of electricity or irrigation. I would leave it to the State Governments to decide as they think best.

External resources have also to be found and we have suggested that it should be to the tune of about Rs 4,000 crore. Of course, it all depends on the goodwill of the countries which have been helping us and also the institutions like the World Bank. Naturally, they will expect that we should do something on our own. We should make our own contribution, and, as you know, our Finance Minister placed a supplementary budget recently before Parliament. It is an indication of the fact that we are prepared to bear greater burdens with a view to giving a new fillip to our Fourth Five Year Plan and also show to the world that if they will continue their help or increase their assistance, we, on our part, will also try to match it and do much more than what they will give, and thus produce conditions in the country which would be in the larger interests of the people.

This supplementary budget, as far as I can judge, does not touch the interests of the common man. I mean he has not been affected and mostly those who reap very high profits have been taxed the most. Heavy levies have been imposed on some of the items which are sold on a profit of about 400 per cent, 500 per cent, 800 per cent like copper, lead and zinc. There is, of course, an additional burden and it has to be borne by the country. As I have said, for both our internal resources and external resources, we have to do our utmost and see to it that there is no shortfall in our Fourth Five Year Plan. If we have decided upon the size of the Plan and if we agree that it should be of the order of Rs 21,500 crore, we have to make every effort possible to see that it is fully implemented and fully completed and that there is absolutely no shortfall. For that, you have to keep a constant watch on the resources position. If we can do better, if we can get more resources, we can add to the Plan, we can expand it. But we have also to keep in mind that in case the resources are not available, or they are available in lesser quantities, then we may have to curtail or cut down our Plan because we cannot go beyond our means. Otherwise, there will be inflation. *We have, as a policy, decided that we will not take any steps which would lead to inflationary tendencies. There will be no deficit financing.* The State Governments have to keep this in mind.

Better Administration, More Economies

ONE of the most important things we have to do in regard to resources is the cutting down of our expenditure. The Central Government is also fairly guilty of the fact that it has not been able to cut down much of expenditure. We did try it and we have succeeded to some extent but we will have to economise our expenditure much more. We have added a number of departments and so perhaps have the States. I think it is time that we carefully consider the question of effecting economies in our expenditure both at the Centre and in the States.

As I said if we do want that there should be no shortfall in our Plan, we have to pay special attention to the implementation of the Plan, of our projects, of our schemes. If those responsible for the execution of the Plan are remiss or if they do not perform their duty satisfactorily, then whatever the funds or whatever the allocations we have, it would not really work. The performance has to be very good, very efficient and very satisfactory.

I have already referred to implementation of our agricultural plans. I am especially referring to it because it has much to do with the work which is actually being done in the field, whether it is irrigation or power, supply of fertilisers, etc. or supply of seeds, credits, or other inputs. The point is that there should be better co-ordination and consistent improvement. We have to keep a watch on this. We see the results on paper and come to judgements on the basis of the reports we get. Co-ordination may have to be done in the Secretariat but it is much better that some of us sit down in the villages and work out the scheme

of co-ordination after actually finding out the difficulties of the people, of the cultivators, of the farmers. We go there only once or twice. Naturally, we are surrounded by the officers and we are not in a position to know the objective facts. It is, therefore, much better that the Plan is actually drawn up in the villages. It may be vetted and polished at the Secretariat level but it is perhaps essential that we go to the villages and find things out. For example, there are canals but people do not get water at the correct time. When they do not want it, they get it in surplus. Then there is a good deal of corruption in the Irrigation Department.

I have said recently and the Home Minister will give thought to the setting up of a high-power Commission in regard to the improvement in the administration, that is, what steps should be taken at the Secretariat level, at the Directorate level and at the district level, and what improvements should be made, and what delays come in the way of the quick implementation of these schemes.

The success of our Fourth Five Year Plan is an important matter. I would merely say that this Plan has a special purpose and it is essential that in the course of the next five years, we should be in a position to give the basic necessities of life to the people—food, clothing, shelter, education, medical facilities. If we cannot provide these things, well, the Plan has no special significance for me. I know that there are various other factors which lead to general economic development and those steps have to be taken, but these direct issues have to be tackled.

Another problem is that of prices. It is one of the things greatly troubling the people. It disturbs me. It should be possible for us, in the course of the Fourth Five Year Plan, to supply the basic necessities of life to the people at a reasonable price, which should be within the means of the wage earners and of the middle class families.

Our objective is socialism and we have to proceed in that direction. We have to fight monopolies and we must see that there is equitable distribution of wealth and national income. This is our objective and with a view to achieving this objective, we have to execute and implement this Plan.

Readiness To Make Greater Sacrifices

EARLIER in the address the Prime Minister referred to the political situation and declared, "If Pakistan wants to compel us by use of force to discuss the main question of Kashmir, I say it is just out of question. We cannot accept it and we will not accept it come what may."

In a detailed reference to Kashmir, Mr Shastri said that the situation was the creation of Pakistan; the entire responsibility was that of Pakistan. Pakistan had indulged in aggression, an aggression of a deceitful nature. Pakistanis tried to enter Kashmir Valley and Jammu. Large numbers of them had come with arms and weapons but they were not in uniforms. However, they were all trained by the Pakistani Army authorities. All the planning was done by the armed forces of Pakistan. It was a disguised form of attack. But it had not taken much time for the world to know the culpability and designs of Pakistan.

Mr Shastri said that Pakistan had expected that on August 9 there would be disorder and disturbances in the Kashmir Valley, especially in Srinagar. This was a date on which Sheikh Abdullah had been arrested in 1954. Pakistanis felt that this was a good opportunity for them to enter the Valley, incite the people with arms and create some kind of disturbance there. Pakistanis came in large numbers. In the beginning, the infiltration created a difficult situation. But the Pakistani raiders had been tackled. The raiders, who in the beginning operated in inhabited areas, had moved to far-off areas and were hiding in the jungles.

Referring to the regular attack by the armed forces of Pakistan in the Chhamb area of Jammu, the Prime Minister said that responsibility for escalating the conflict was Pakistan's. India's strategy for the future would be considered in the light of this. He said: "We do not want that there should be a continuous conflict forced on us by Pakistan and, that they should cross into our territory and then sue for peace, in the hope that we agree to some kind of a cease-fire. This has become intolerable. We do not and cannot accept it. We have to bring this matter to an end." The Prime Minister declared: "The country will have to undergo sufferings and sacrifices and we should give our utmost to the preservation of our integrity and freedom. In this context you have also to think of the Plan. We cannot give up all our work and the most important work of economic development. It is essential even for fighting the war. We need food and weapons and many other things. Defence effort has to be stepped up. The Plan will have to be defence-oriented in the light of the new developments".

No Extra Burdens on the Poor

MR ASOKA Mehta, Deputy Chairman of the Planning Commission, said that Pakistan's gross investment in its economy was 17 per cent of its national income. We had therefore to aim at a rate of investment at least as high. We could not afford to be overtaken by Pakistan in economic capabilities.

Such an effort would require tax receipts, as a proportion of national income, to rise from 13 per cent now to 18 per cent by the end of the Fourth Plan. Through normal growth this share would go up only to 15 per cent; therefore, there was need to make extra effort to get 3 per cent more of the rising national income as taxes.

The effort, Mr Mehta pointed out, would not adversely affect the levels of living of the people. The extra effort was to be met from the *additional* incomes that would be generated. A quarter of the additional income would go to investment, and the remaining three quarters would be available to improve our living standards. It was thus possible to improve living conditions and simultaneously strengthen our economy.

During the three Plans, Mr Mehta said, the Centre and States would together have raised Rs 4,142 crore in additional taxation. Of this amount, the contribution from increments in direct agricultural taxes

(*Continued on Page 26*)

OWING TO STRESS ON DEVELOPMENT

OUR ECONOMY BETTER than Pakistan's not only in SIZE BUT IN QUALITY

CONTRIBUTED

THE recent conflict between Pakistan and India has generated a great deal of interest in the relative economic capabilities of the two countries. The reason is obvious. In the short run, the outcome of the war may be influenced by the state of military preparedness, though as experience of the last few weeks has shown, it is by no means decisive. The result of any longdrawn-out conflict depends largely on the relative economic strength of the warring countries.

From the purely military viewpoint, the size and range of industrial capability are of crucial importance. India's capacity to produce materials of direct military significance is unquestionably superior to that of Pakistan. This superiority derives partly from the fact that we are four times as large as Pakistan. But the difference in industrial strength is much bigger than could be explained by the relative size of the two countries. Thus industry absorbs about 10 per cent of our working population and contributes 20 per cent of our national income compared to 8 per cent and 10 per cent respectively in Pakistan. We have nearly 4 million people employed in modern factory type industry while Pakistan has hardly 0.6 million.

Our industrial base is not only bigger, but more versatile and more self-sufficient. Pakistan has made good progress in developing her industries, but her development has been mostly in the field of cotton and jute textiles and other light industry. Her production of chemicals and machinery is extremely small: she does not have any large plant for producing steel and other metals.

India on the other has made rapid strides in building up these industries as part of her programme for economic development. We produce 40 times as much sulphuric acid, 20 times as much fertilisers and 10-15 times as much of caustic soda and soda ash as Pakistan. We have capacity to produce 8.9 million ingots tons of steel; Pakistan has none. Our machine-building industry is capable of producing a wide variety of industrial machinery, machine tools, buses and trucks, locomotives and wagons, and electrical equipment. Pakistan's machine-building industry is very much smaller and produces only a few simple types of equipment Table I.

Our Plans not for Building Military Machine

With a bigger and more diversified industrial base, our economy is less dependent on foreign aid and therefore less vulnerable. Compared to us Pakistan has to import a much larger proportion of her needs of metals, machinery and chemicals. Both countries do not export enough to meet all the import requirements, but the gap is bigger in Pakistan. In 1964, she imported goods and services valued at Rs 4750 million; her exports were hardly Rs 2,000 million. In other words, more than half of Pakistan's imports were financed by foreign aid. On the other hand, India met nearly 65 per cent of her import requirements by her own export earnings. Obviously, the same proportionate reduction in aid would create far more serious dislocations in Pakistan's economy than in ours.

Such industrial strength as we have is the result of our efforts during the last 15 years to promote economic development. These efforts were not intended to build a military machine, but to provide the essential basis for improving the living conditions of the people. This in fact continues to be our central problem, our major preoccupation. Thanks to the political stability and a leadership imbued with a sense of determination and purpose, we have been able to maintain a steady growth of production and employment in all sectors. Since 1951, our farm output has risen 60 per cent and production of modern industries has nearly trebled. Aggregate income has increased by nearly 75 per cent and per capita incomes by 25 per cent.

Pakistan's record on the other hand is not nearly as impressive. Between 1950 and 1960, her average rate of growth was about 2.5 per cent a year which is almost equal to the population growth. It is true that of late Pakistan has been showing a considerably high rate of growth, and her performance has received rather widespread publicity. Whether this performance will be sustained is to be seen if especially foreign aid is not available on the scale visualised in their plans.

The central problem of India as well as of Pakistan is poverty. In both countries, the vast majority of people are ill-fed, malnourished, poorly-clothed and housed; unemployment is widespread; disease and illiteracy are still far from being eradicated. India's progress since independence has been on the whole faster, and the average living stan-

dard in India is somewhat better than in the Pakistan. The average Indian is a little better fed; he is certainly better clothed, is more literate, and has a longer expectation of life. Even so, it is only too obvious that both have a long way to go before their people have anything like a tolerable life. (Table II)

By provoking military conflict to slake their lust for territory, the Pakistan leaders will only succeed in diverting the energies of both nations from this task.

I. Industrial Production, India and Pakistan 1964-65

Industries	Unit	India	Pakistan
1	2	3	4
1. Sugar	thou. tonnes	2600	312
2. Cotton Yarn	,,	958	236
3. Cotton cloth (mill-made)	mill. metres	4423*	668*
4. Paper including newsprint	thou. tonnes	526.5	116
5. Cement	,,	9420*	1474*
6. Fertilisers (in terms of N)	,,	230	11
7. Sulphuric Acid	,,	681	16
8. Soda ash	,,	280	28
9. Caustic soda	,,	183	15
10. Coal	,,	63990	1500
11. Crude petroleum	,,	1653*	469*
12. Electricity installed	mill. Kw.	9	1.4
13. Electricity generated	bill. Kwh	25.9*	2.9*
14. Steel ingots	thou. tonnes	4400	negligible

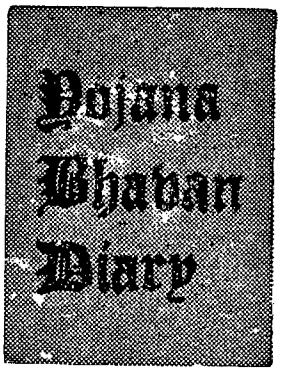
*relates to 1963-64

II. Indicators of Standard of Living, India & Pakistan 1964-65

Items	Unit	India	Pakistan
1	2	3	4
National income (at current prices)	Rs. billion	172*	38.4*
Population	million	464*	110*
Per capita income	Rupees	371	349*
Literacy rate	per cent	28	20
Mortality rate	per '000	15.8	16.7
Number per 100,000 population			
Doctors		17	14
Hospital beds		48	30
Nurses		8	3
Calories intake per capita per day (in 1961-62)		2040	1970
Per capita consumption of			
food grains	Kgs.	172.8*	149.5*
sugar	Kgs. of sugar equivalent	21.9*	19.3*
Cotton textiles (estimated from yarn)	Metres	16.0*	13.2*
Paper including newsprint	Kgs	1.13	1.05

*relates to 1963-64

Sources for Pakistan data: 1. Quarterly Economic Review—May 1965 (E.I.U.); 2. Third Five Year Plan—Summary; 3. Papers submitted to UNICEF Conference on Children and Youth (by Deputy Chief, Planning Division, Government of Pakistan)



THE National Development Council met on September 5 and 6 under the chairmanship of the Prime Minister and finalised the pattern of the Fourth Plan.

Mr Asoka Mehta, Deputy Chairman of the Planning Commission, held a press conference on September 6 to explain the N.D.C. decisions.

The Chief Ministers of Rajasthan, the Punjab and Uttar Pradesh met the Deputy Chairman on September 6 to discuss resource mobilisation for the Fourth Plan.

Planning Secretaries of State Governments met on September 7, with Mr G.R. Kamat, Secretary to the Planning Commission, in the chair.

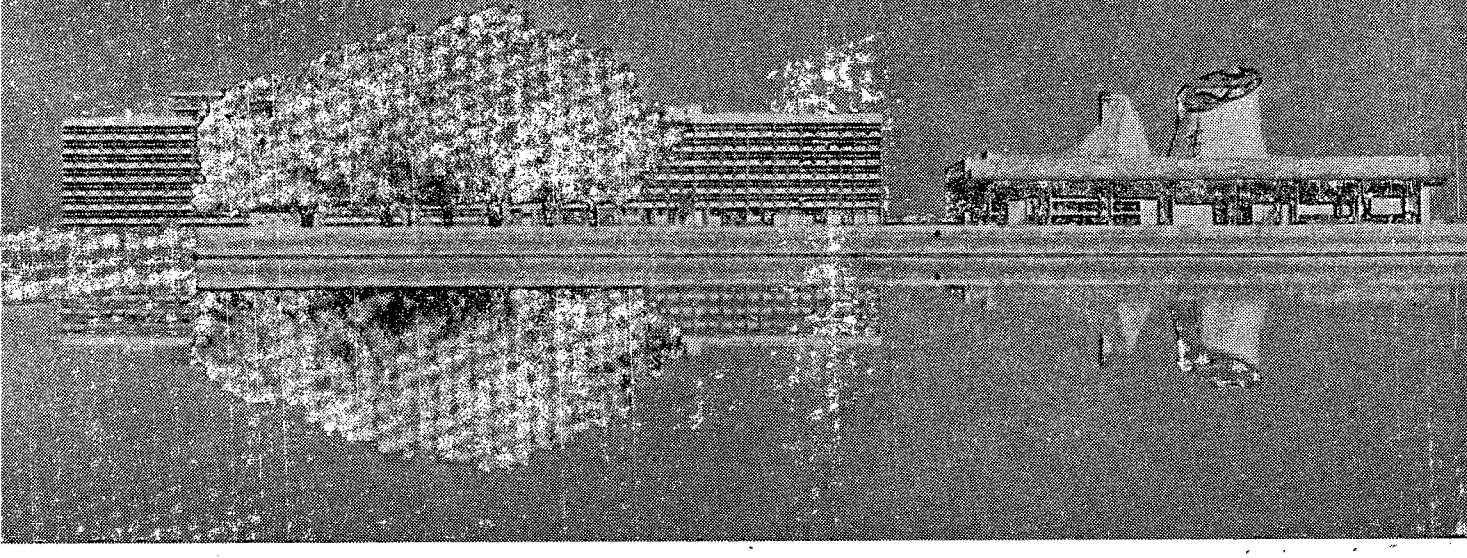
The Planning Commission met on September 14 to consider the annual Plan and on September 18 to lay guide-lines for the States to reorient the State Plans in the light of the country's defence needs.

Mr Asoka Mehta addressed the Fulbright scholars from the U.S.A. on the five-year plan.

The Research Programmes Committee of the Planning Commission met on September 4 at Vigyan Bhavan. Prof. V.K. R.V. Rao, Member, presided and the Deputy Chairman and other Members of the Planning Commission attended. About 20 leading social scientists of the country, who are on the Committee, took part in the discussions.

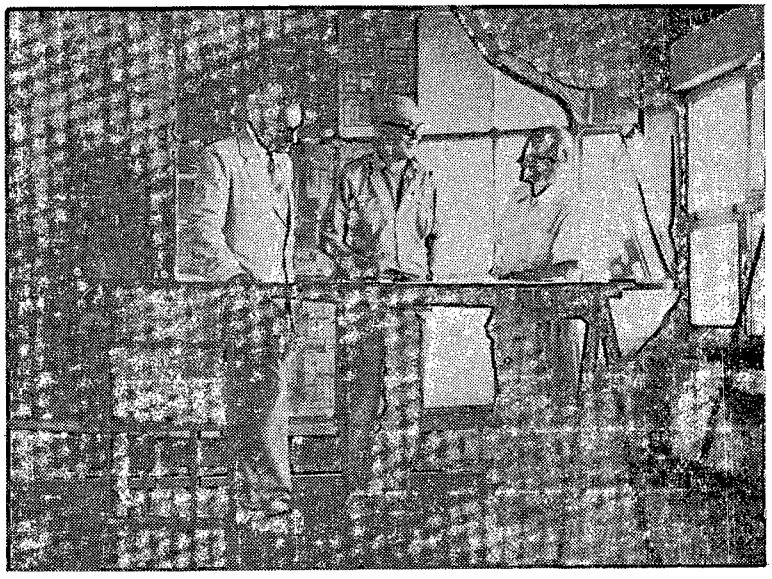
Mr D.P. Nayar has been appointed as Senior Specialist in the Education Division of Planning Commission.

Dr K.R. Nair, Director, Central Statistical Organisation, took part in the 35th session of the International Statistical Institute held in Belgrade from September 14 to 22.

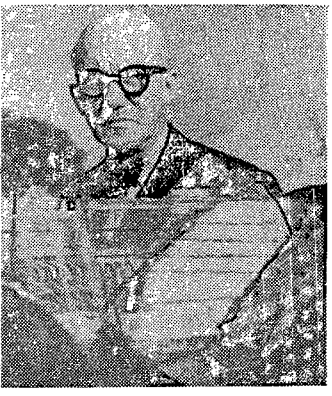


Le Corbusier

The Secretariat and the Assembly Building at Chandigarh. Below: The great architect discusses Chandigarh Master Plan with Mr. P. L. Verma (left) and Mon. P. Jeanneret, two of his colleagues.



Maker of Chandigarh



Le Corbusier with a model of Bhakra dam

By

JEET MALHOTRA

Principal, College of Architecture Chandigarh

With aching hands and bleeding feet
We dig and heap, lay stone on stone;
We bear the burden and the heat
of the long day, and wish 'twere done.
Not till the hours of light return
All we have built do we discern.

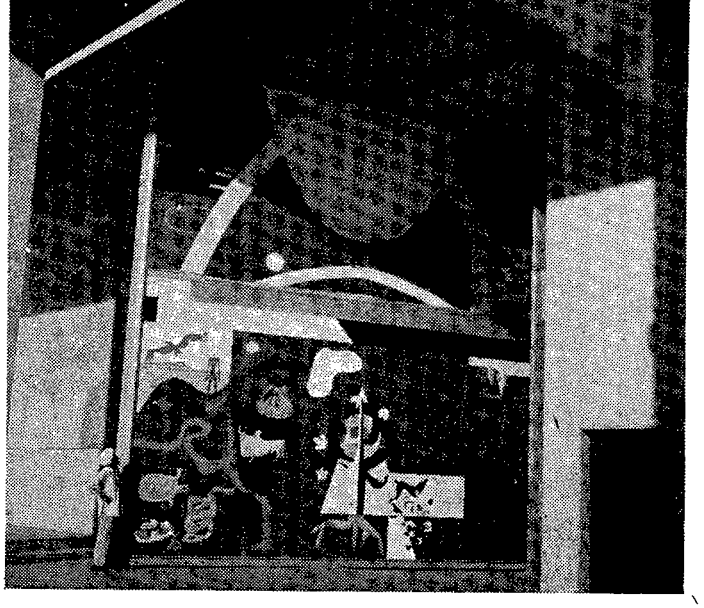
Now is the hour of light for le Corbusier when we wish *he* were here with us to discern what *he* has built. Indeed, he has left us gaping at the numerous enormous buildings which have come up as a projection of his versatile mind.

For me, he has been the most unforgettable character I have met. My first impression of him has never changed. I still remember my first handshake with him when we both were very tongue-tied for the simple reason that we did not have any language in common. Le Corbusier did not know a word of English and I was equally dumb in French. He struck me as a gigantic

figure clad in khaki from head to foot, equipped with numerous pockets which apparently carried all his working paraphernalia. When he saw me staring at his unique and very original type of dress, he smiled and said that all his pockets carried different things like pencils, eraser, sketch book, old coins and his passport.

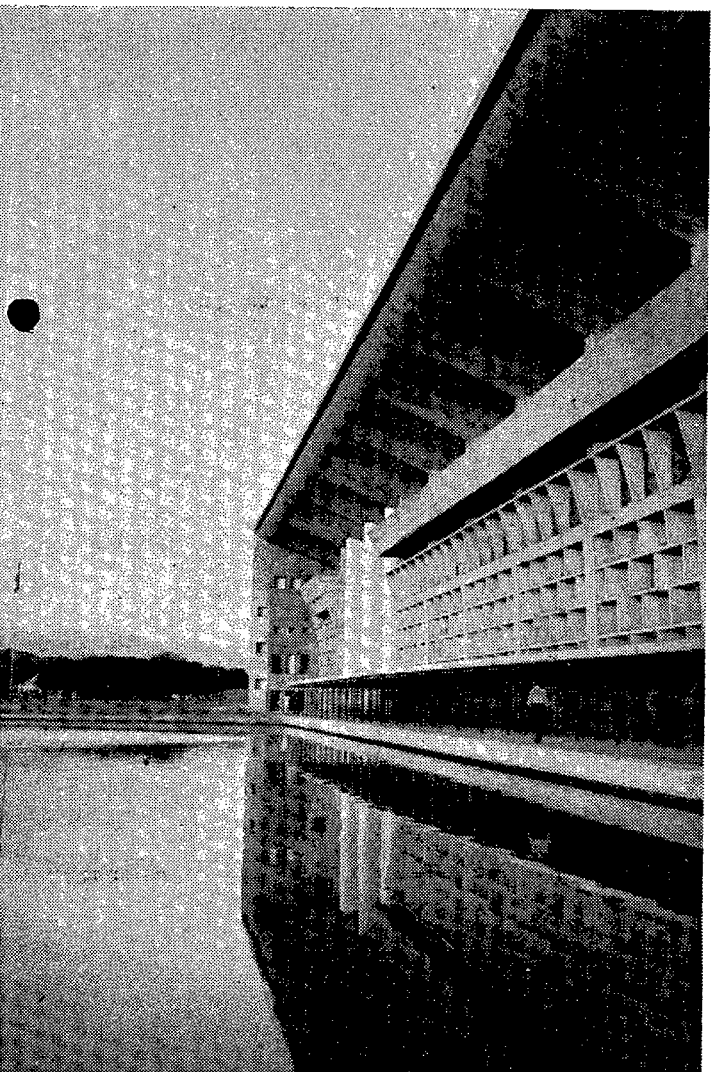
When I look back now I realise how my first glimpse of him was only an introduction to his mind—his clear, systematic, powerful and analytical mind. In all his later works he reflected that ingenuity, precision, resourcefulness and clarity which he showed in his uniform.

It has indeed been a rare good fortune for our country and especially Chandigarh to have had le Corbusier. He brought about a kind of resurrection of architecture and town-planning. He gave full vent to his ideas which were by far the most original, and the result was Chandigarh. In the Capitol complex where five major buildings were designed by him, three have been constructed: the Secretariat, the Assembly Chamber and the High Court, and the 'Museum of Knowledge' and the 'Open Hand' are yet to be built. The landscape features of the Capitol complex are also being materialised. In these works he shows himself not only as a supreme architect but also as a unique painter, sculptor and artist, all combined in one. One cannot really understand le Corbusier unless one appreciates the varied facets of his dynamic personality. The entrance door of the Assembly building reflects a master-painter's mind.



A le Corbusier painting on the pivot door of the Assembly building

The High Court at Chandigarh, one of his first creations in India



He was also a writer of no mean calibre. He wrote no fewer than 70 books on architecture, town-planning, sculpture, painting—advocating the theories he has professed and practised during his lifetime. A creator and inventor first and last, he brought out all the latent faculties in him. But all these lesser creative instincts contributed to one great obsession with him—architecture. And this explains the overpowering effect of his buildings.

Le Corbusier has left behind a rich crop of architecture and it has opened up new vistas of thinking and achievement for the young Indian architects. It is for them to avail themselves of the excellent start given by him. It will be important for us to see that his exacting standards are maintained in times to come.

Nehru was a friend and admirer of le Corbusier and often helped him in difficulties. Nehru respected his powerful ideas and said: "Chandigarh is powerful and it just hits you on the head and makes you think."

With a twinkle in his eye "Corbu" used to say that he preferred to be called "camel" and not a "crow" (Corbu means a crow). Full of the joy of life, he loved to swim, and unlike the other artists who prefer to keep aloof, he had a keen interest in human affairs and human psychology. For 60 long years he kept a diary in which he recorded all his impressions about people, nature and art.

In him we have lost not only a great architect but an incomparable artist of the twentieth century and his death is a blow to the world at large

LE CORBUSIER and CONTEMPORARY ARCHITECTURE

By
BIJIT GHOSH
Professor of Planning, School of Planning & Architecture, New Delhi

Picture : French Embassy

Now and then a person carries a whole nation with him to share his feeling, to see his vision and to speak his language. Le Corbusier, as an architect and painter, made a mark in this respect on his age and century. He absorbed so completely the spirit of the age, perfected it and projected it to the future that he was able to give a new dimension and direction to architecture.

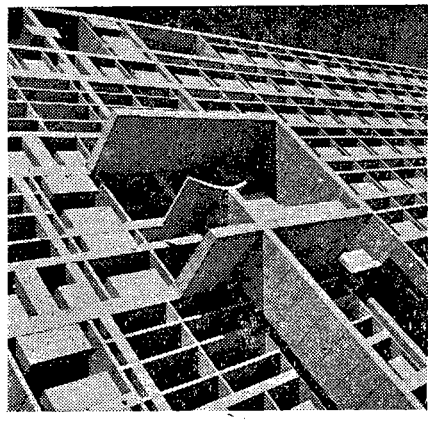
From medieval romanticism to contemporary functionalism, there has been a great surge forward. Architecture has been in transition. But never before had there been so radical a change in concept and practice of architecture as in the last five decades. A turning point was an exhibition in 1922 at the Salone d'Automne in Paris of the plan of "Ville Contemporaine" (the city contemporary) for three million people and the publication of a book *Vers une architecture*—(Towards an Architecture) by le Corbusier.

The city, although planned in minutest detail, was never built and the thoughts expressed in the book were never fully realised by him. But these made the people aware of what he said: "A great epoch has begun! There exists a new spirit." While many considered the architecture of le Corbusier outrageous—some even dubbed it new brutalism—a few could immediately realise that the vision of le Corbusier was to become the architecture of tomorrow. Le Corbusier who followed his conviction consistently was the prophet of this epoch. His death by drowning off the French Riviera on August 27 was a tragic irony of fate.

Le Corbusier's real name was Charles Edouard Jeanneret. He was born in a family of watch engravers on October 6, 1887 in La Chaux-de-Fonds, Switzerland. In the art school of the same place, he studied engraving first and then murals and sculpture. At 18, he was commissioned to design a villa for a member of the faculty in the art school which was in fact his first assignment. The fees he got enabled him to take a trip through Italy to Venice where he worked with Josef Hoffman. Later he went to Paris (1908) and to Berlin (1910) and worked respectively under Auguste Perret and Peter Behrens. Le Corbusier was then in the making to be a master architect and much of his thought on functionalism was actually inspired by Perret. But it was not until the exhibition of his plan and publication of the book mentioned earlier that he really became famous. In 1923 he assumed the name LE CORBUSIER after his French ancestor to distinguish between two of his multiple personalities —those of painter and architect.

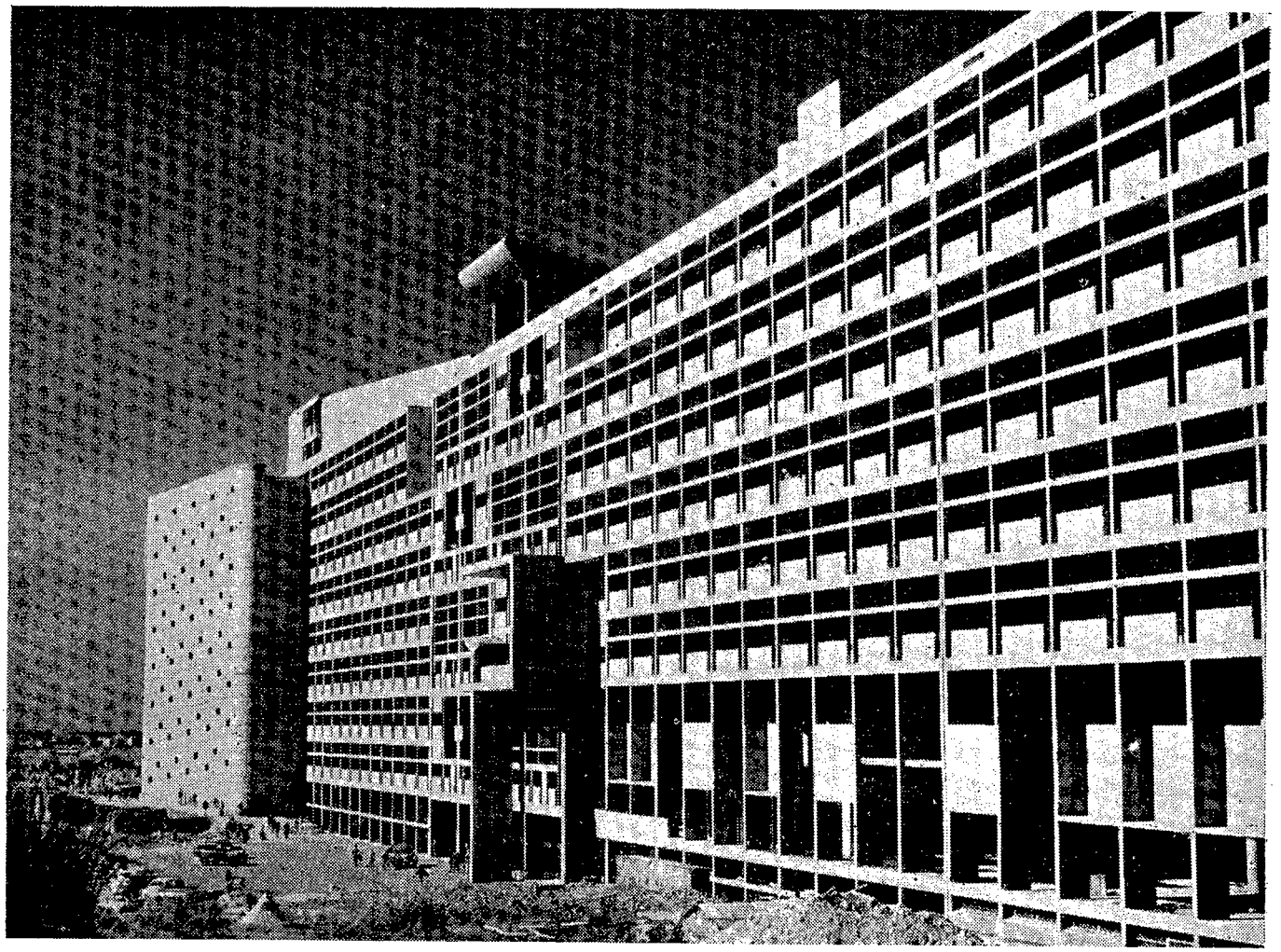
In 1926, he won first prize in an international design competition for the building of League of Nations in Geneva. He joined the C.I.A.M. (Congress for Modern Architecture) group in 1928. To le Corbusier, conceptual studies were as important as actual work. He perfected

"I HAD VERY LITTLE MONEY. THIS GAVE GREAT SCOPE FOR INVENTION AND IMAGINATION."



The Secretariat in Chandigarh—variety by the use of modulor.

Photographs :
Dhruva N. Chaudhuri



The Secretariat in Chandigarh—a simple, bold and honest statement.

the concepts "city contemporary" in his plan for Paris ("Plan Voisin") and the "City Radiant" (Ville Radieuse). In pursuit of functional architecture, he developed "Dom-ino" houses, "Citrohan" units and "Villas Superimposee".

He prepared many city plans, e.g., for Buenos Aires, Stockholm, Algiers, Nemours, Bogota and Moscow and his outstanding architectural designs were the Palace of Soviets in Moscow, the Swiss Home for Cite Universitaire in Paris, an office building for National Education and Public Health in Rio de Janeiro, L' Unite d' habitation in Marseilles, rebuilding of Saint-Die, the U.N. headquarters in Manhattan (in collaboration with Oscar Neimeyer and Wallace K. Harrison) and the chapel of Ron Champ.

In India, he was first commissioned in 1952 for the planning of Chandigarh. He designed all the buildings of the capitol complex—the Secretariat, the Assembly, Raj Bhavan and the High Court. He was also commissioned in 1954-56 to design Sarabhai House and Shodhan House in Ahmedabad. In the same place, the Millowners' Association Building and the Museum were designed by him in 1954.

Even though le Corbusier could not apply the principles of "City Contemporaine" to Chandigarh, the Secretariat building was a fulfilment of his aspiration for architecture. What he could not realise in the U.N. headquarters in Manhattan, Chandigarh's Secretariat gave him the opportunity to do. He was extremely happy about all the buildings he designed in Chandigarh and he said: "I had a free hand but very little money. This gave scope for ideas, invention and imagination."

A Nonconformist

What makes le Corbusier a great architect of the century? The answer is his philosophy, his buildings, and his cities—in that order. In all these, one finds him to be a nonconformist.

Basically his mastery over architecture developed for two reasons. While most of us draw inspiration from tradition, from the cities in history, the vision of le Corbusier was only filled with buildings and cities of the future. Again, whatever might have been his approach to architecture, he could apply the same vision to town planning and very few had so successfully merged building into a city. He attempted in the Unite d'habitation in Marseilles to build a city in a building, to build a vertical city. To him it was clear that

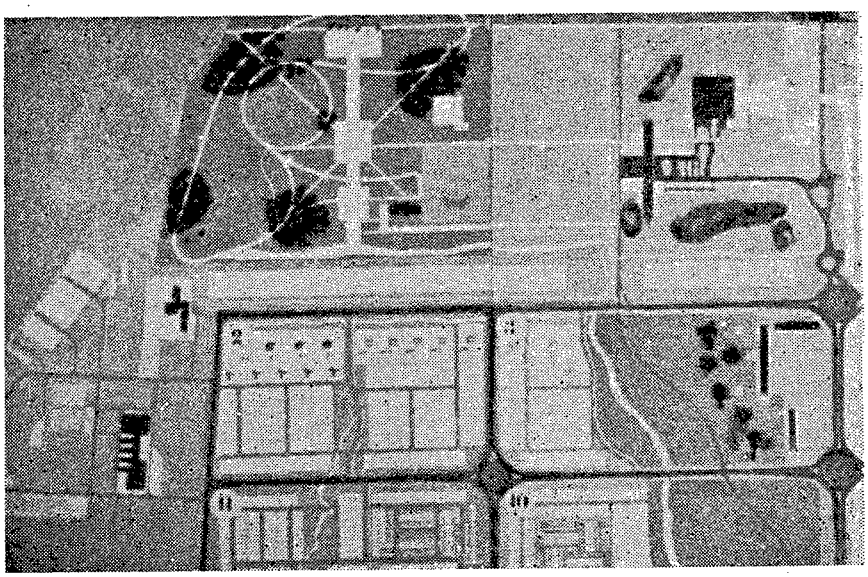
architecture in the twentieth century could no longer be isolated; the city as a whole was architecture.

Machine Art

To fit into the machine age, le Corbusier developed architecture as machine art and he emphasised both machine and art.

In le Corbusier's first apprenticeship with Josef Hoffman in Venice was his first contact with *art nouveau*—the "modern art" movement that dominated all forms of creative expression for about 50 years starting from the poster art of Toulouse-Lautrec. Most of the architects following *art nouveau*, like Antonio Gaudi of Spain, Frank Lloyd Wright of America or Alvar Alto of Finland, believed that nature is honest and so the forms derived from nature must be honest. They surrendered to voluptuous plasticity of natural form and introduced richness in ornate design by extensive use of natural materials. But those who were inspired by machine art like Auguste Perret, le Corbusier and Walter Gropius regarded the machine as essentially efficient; to them therefore the forms derived from machine were efficient.

Le Corbusier startled many people by saying "a house is a machine for living in"; so convinced was he about architecture as being an outcome of machine art. To emphasise his point of view, he considered building to be essentially man-made and it was to be built by man-made materials like concrete and steel. He never allowed the plasticity of concrete to be in excess in exaggerated natural forms; he restrained it into a structural discipline. He used concrete in its crudest, most brutal form, *beton brut*! But he realised the strength of concrete for technical requirements, he responded to the need of utilitarian requirement of living and he offered the only rational solution to the most urgent problems of his time, the building of tall structures, lightly framed and infinitely flexible in plan. He conceived building raised on pilotis is like a tree, its trunk rooted into the ground and foliage spreading above. He conceived a city consisting of many of these towers, the ground being completely released for the freedom of space, for safe movement of pedestrians. This was the genesis of functionalism and architecture was interpreted for optimum use and utility. The meaning of architecture was supported by rationalisation.



Capitol complex—Chandigarh

Even with such emphasis on machine and its efficiency, architecture was essentially art to le Corbusier. He designed building as a pure geometrical form—as a simple, bold and honest statement. His buildings are essentially cubes or several cubes fitted within a cube, the superimposed units. The Secretariat in Chandigarh can be cited as an example. His cities essentially consist of a few such cubes lifted up from the ground and silhouetted against the sky. If contrast was necessary, he played again with pure geometrical forms, a cone or a cylinder, a pyramid or a prism.

That the machine art if not ingenious might be sickening for its monotony and regimentation made him contrive the modulor, a scale of measurement related to various proportions of the human body. The use of modulor provides a flexible choice of units and thus it introduces a great variety. This is particularly suitable for mass production of any building industry, for pre-casting and prefabrication. The use of the modulor has made the facade of the Secretariat in Chandigarh, nearly 420 metres in length, so dominating and powerful; to many it may be grotesque but it lingers in memory for long.

Space is in motion and, in every city, the general trend is to set the motion horizontally. Le Corbusier tried to set it vertically. He tried to lift every building up as if it was forced so by the pressure of a great hand (conceived as a sculpture in Chandigarh) releasing the ground space below. He also tried to hollow out buildings creating terrace gardens and to plan roof gardens in the sky. He spaced a few such vertical towers in his radiant city wide apart so that every family might have the essential joys of living—sun, space and verdure.

While *art nouveau* architects tried to merge city into nature, le Corbusier's city was essentially urban and he made a clear distinction between nature and man-made environment. He separated the buildings from ground, contrasted them by geometrical forms and planned the city in geometrical lines for optimum use and utility, and for maximum efficiency. This is quite evident in Chandigarh, particularly in the capitol complex. Whether it is Unite d'habitation in Marseilles or the Secretariat in Chandigarh, the planning of Algiers or Buenos Aires, all speak of his conviction, all point that he was basically an antinaturalist.

So le Corbusier thought, struggled and worked, and now, with his death, he leaves a band of his followers in India and elsewhere who have his convictions about functionalism and who will keep his spirit alive.

USE LIME —SAVE CEMENT

J. K. VARSHNEYA

Deputy Director (Metric Cell), National Buildings Organisation, and U.N. Regional Centre for ECAFE, New Delhi

THE country is engaged in an unprecedented building activity. The tempo of housing construction accelerated during the Fourth Plan.

Cement is one of the important building materials. But the country is short of cement and the shortage is likely to continue for some time. It is therefore essential to conserve cement and use it as economically as possible.

One of the important ways of conserving cement is the use of lime in its place. Lime has been used as a cementing material from the earliest times. The Egyptians used lime mortar in the construction of the pyramids. The Taj Mahal at Agra, the Red Fort in Delhi and the famous temples of South India were all built using lime mortar.

With the coming of cement and the non-availability of standard quality of lime, the use of lime has receded in the last few decades.

LIME mortars have certain special characteristics : they are easier to work with; they have higher plasticity; they retain water more and they do not shrink much on drying. But they have a low compressive strength. Cement mortars, on the other hand, have a high compressive strength but a low workability. The use of lime in conjunction with cement enhances the advantages. A composite mortar containing both cement and lime combines the best qualities of both.

The present practice in building construction is to use cement for every purpose. Cement is used for foundation concrete, for brickwork, for plastering and so on. To a great extent the use of cement can be replaced by lime; or a composite mortar having cement and lime can be used.

Here are some specific suggestions:

*Use lime mortar for foundation concrete including bedding below flooring and terracing. But lime mortar should not be used in places where soil contains excessive soluble salts or the water table is within 2½ metres of the foundation level. The following mortars can be used for foundation concrete :

1 lime : 2 sand
1 lime : 1 *surkhi* : 1 sand
1 lime : 2 *surkhi*

*Do not adopt R.C.C. framed structures for three-storeyed buildings. Do the masonry work of such buildings with load bearing walls in lime mortar. For buildings with more than three storeys for which framed structures are adopted, 9″ walls (23 cm) may be done in lime mortar and only 4½″ partition walls (11½ cm) need be done in cement mortar.

*Do internal plaster in lime mortar and external plaster in cement-lime mortar 1 : 2 : 9 (1 cement : 2 lime : 9 sand).

*Do not use cement for compounds or front ornamental walls. Do the entire construction in lime mortar.

*Minimise the use of elaborate sun-breakers, complicated cement concrete *jalis*, box type and 'U' type *chajjas* to windows, which require large quantities of cement. Provide *chajjas* simply for weather protection.

*In mass concrete, use fly ash up to 20 per cent. Fly ash is an industrial waste material available from thermal power stations.

*Make efforts to provide flat arches in place of R.C.C. lintels.

LIME used in construction should conform to the specifications laid down by the Indian Standards Institution. The Lime Manufacturers Association of India, 10 Alipur Road, Delhi-6, can be of help in procuring lime of standard quality.

It has been found that by following the recommendations listed above, 8 to 10 per cent cement can be saved in the case of R.C.C. framed multi-storeyed buildings and 30 to 40 per cent cement can be saved in the case of traditional load-bearing buildings.

BASED on chemical composition there are two types of lime.

(i) *Fat Lime* : Pure limestone with little impurities yields fat lime.

(ii) *Hydraulic Lime* : Some limestones contain clay as impurities. Lime obtained from such lime-stones has the property of setting and hardening under water. Such lime is known as hydraulic lime.

The Indian Standards Institution has classified limes as follows :

Class A : Eminently hydraulic lime which is used for structural purposes.

Class B : Semi-hydraulic lime which is used for masonry work.

Class C : Fat lime used mostly for finishing coat in plastering, white-washing and with suitable admixture, such as *surkhi*, to produce artificial hydraulic mortars.

The appropriate class of lime should be used for different items of construction.

Question : Madras is reputed to have the cleanest administration in India. What is your impression ?

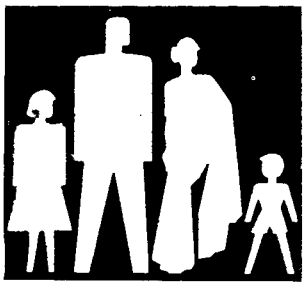
E.M.S. : Cleanest? I don't know. "Cleverest" is the right word in this context, I think.

—*The Illustrated Weekly*

The Loop Means Family Welfare

Village Women Do Understand

Report by R.K.P.
Photographs: T.S. Nagarajan



Women queue up for the mobile van at Bhagwan Nagar, a Delhi village.

IN Tughlaqabad near Delhi, a doctor has made a conquest. She has won the hearts of the simple womenfolk of that village. Under her patient persuasion and leadership the village women have overcome their traditional doubts and taken to family planning. Dr P. Kashyap is the Municipal Corporation's Superintendent for Rural South Delhi and one of the evangelists of the I.U.C.D. (intra-uterine contraceptive device).

One day, soon after she had begun telling the women of Tughlaqabad of the advantages of the I.U.C.D. and even persuaded some women to have the loop, she was challenged by a group of elderly and somewhat agitated women who closed in on her. She asked them what they wanted, and why they seemed to be angry.

One of the elders, a woman with a leaderly look, blurted: "Why do you come here to lead our young women to the path of ruin?" There was righteous anger in her voice. That was the signal for missiles of questions from all sides: "Aren't you ashamed to carry all your city vices to our simple village?"; "Is it what a doctor is expected to do?"; "Don't you know that this *dhaga* (loop) will make our young women immoral?"

Dr A.S. Nalwa says, "Fine! you have come to have the loop?"

The message of I.U.C.D. passes by word of mouth among village women

"I controlled my emotions. I tried my best to keep cool", Mrs Kashyap said to me, narrating the experience.

"I knew that the village woman is backward, ignorant. But she is upright, straightforward and warm-hearted. Go to her with the right approach and she responds so eagerly and well.

"So I lovingly told them: mothers, sisters, please don't think for a moment

Dr Kashyap at the Tughlaqabad clinic, affectionately asks Mrs Krishna, her first I.U.C.D. case at the village, "No complaints, I suppose?"

that I have anything to gain by this loop. If you don't want me here, I shall go away. But remember, like you, I am a woman. I am a mother of three daughters. I have my own sisters like you. I know how precious chastity is to a woman. So, please, for heaven's sake, try to understand me. I will be the last person to be associated with this loop programme if it has even the remotest idea to spread immorality. If it is so, I will be with you to fight against it."

The pall of anger began to lift. But there was an air of questioning silence.

"I put it across to them in a way that would appeal to their hearts straight," Dr Kashyap told me. "I asked them: don't you want your children to eat delicious food, wear good clothes, look chubby, be well-educated, get good jobs? Don't you want to remove your poverty and have all good things in life?"

"Yes, yes." There were a hundred voices in chorus.

"Then you should not have so many children. If you have two or three, then you can devote all your time to them and bring them up nicely and well. Now many of you give birth to ten or twelve children. Most of them die. Is it not being cruel to those poor innocent lives?"

"But the children are God's gifts!" an old woman said in all her naivete.

"Then why does not the same God give you money for your comforts which the rich people enjoy ?

"There was no answer. And then I went on: So this *dhaga* is not a cover for immorality. It enables you to have children when you want and naturally, when you have the choice, you won't go in for more children. But there is no compulsion that every woman should have it. Only those who really desire may. And those who want to have it removed, can get it removed. I am here only to help you.

"There was relief. The women jostled round me and the older women hugged me uttering words of affection. Thereafter I have not had to look back."

Against the backdrop of the famous fort built by the mediaeval Sultan, the Corporation's clinic at Tughlaqabad, which Dr Kashyap attends three days in a week, was a picture of cleanliness and calm. The little four-roomed building, with large open space around, is equipped not only for I.U.C.D. insertions but for curative and preventive medical treatment for all the ordinary illnesses. It has a lady doctor, two lady health visitors (LHV) and a *dai*.

"Meet our *dai*, Mrs Ram Piari", Dr. Kashyap said. "She is really the driving force of the I.U.C.D. movement in this village. She meets the village women at their homes and tells them, in her inimitable way, about the loop. And to her we owe the presence of the village women you see here".

Not only Ram Piari, but, thanks to her, there are other propagandists for the loop in the village. Most of the women who have adopted the I.U.C.D. have been persuading others. We saw Krishna, 25, the first woman to take to the loop at Tughlaqabad. She is a mother of two boys and two girls and Dr Kashyap told us that Krishna's example and words had been followed by many other housewives of the village.

"She was my first I.U.C.D. case here and I am proud of her," the doctor said, and Mrs Krishna gave us a "*namaste*", with the natural dignity of our village women.

"It is an infinite pleasure to deal with these village women, you know", said the doctor. "The urban or semi-urban women go on talking in wheels. They are not generally frank. But the village woman has no time to waste. She has to get the insertion done, go back to her house, make *chapatis*, then go to work in the fields and on her way back collect cowdung for fuel. The village housewife's day knows no leisure. And, although they are undernourished, most of them have no vaginal complaints unlike many city-bred women."

"Have they no complaints about the loop?" I asked.

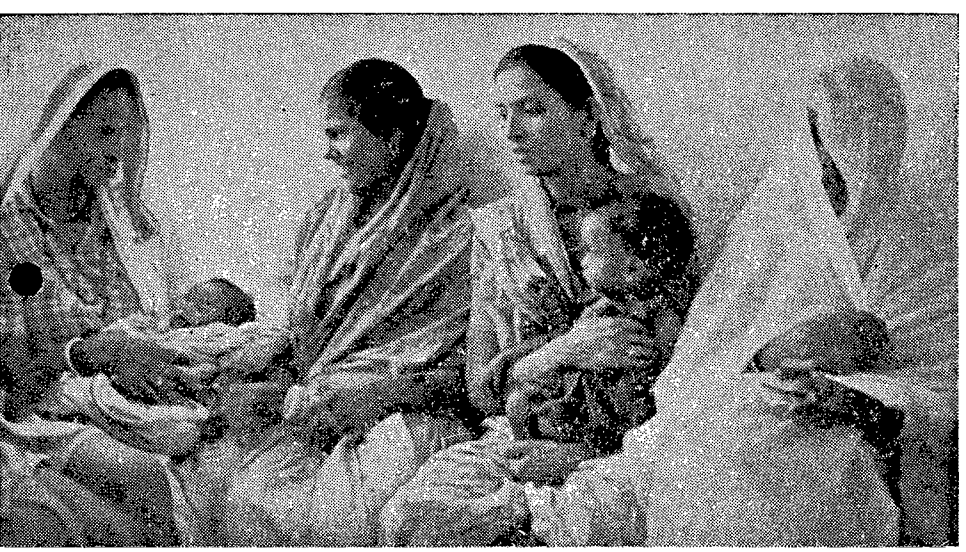
"Now, see, here is Shanti, a mother of five children, who has the loop," the doctor said, pointing at a young woman who had just then come into the room. She asked her a few questions, of course in an undertone, mindful of a man's presence. Then the doctor turned to me and said, "Look, Shanti is a working woman.

She says that she has bleeding because of the loop. It causes a lot of difficulty while working in the fields. But, you will be surprised to know, when I have offered to remove the loop she gives a very polite 'no'.

"Now here is another case. She is again a labourer. She has had temperature after the I.U.C.D. insertion. I wanted to pull out her loop. Then she told me not to. I found on examination that the temperature was due to external infection and she was treated. Now she is all right and the loop remains," said the doctor.

On the day when we were there at the clinic for two hours, six women came for the loop. Five were fitted with it and one was sent back because of some physiological complaint. There was Pushpa, 25, married three years ago. She had only one child but wanted the loop for reasons of spacing. There was Batto, the village elder's wife with nine children, bedecked with heavy gold ornaments, and a milk-seller's wife, with

A mother with children waits for her turn.



11 children, who had listened to the *dai*'s advice. There was Vedvati, 28, who has had seven children of whom four died and who had come there twelve days after her latest delivery. And there was (another) Ram Piari, 33, with three children and a desire for no more. Ten women came on that day for their follow-up checking after I.U.C.D. insertions. In one case, the loop was removed because the husband was against it and wanted more children.

"They should never feel unhappy, you know", said Dr Kashyap.

Pushpa, 25, tells an older mother she is going for the loop for spacing, while next to her sits Vedvati, 28, who has had 7 children (four dead) and has come 12 days after delivery for the loop.

"After all the fundamental philosophy of family planning is human happiness. We must not try to *sell* the idea of the contraceptives. Then the people, specially villagers, become suspicious. The emphasis should be on welfare. The village clinic should be the nerve-centre of social change like the school and the panchayat. Education, I mean psychological preparation, is important. The clinic should have well-organised community programmes. Then there comes about a complete revolutionary change. I.U.C.D.'s path to success is then easy and clear."

The Tughlaqabad clinic serves a population of more than 20,000 in seven villages. Some of the semi-urban backward areas near Delhi, which have no clinic, are served by the Family Planning Institute's mobile van. The van, which is a gift to Indian women from Swedish women, goes to the Okhla Tank area on Tuesdays and Bhagwan Nagar—Khilokri villages on Fridays. We accompanied Dr (Mrs) A.S. Nalwa in the mobile van to the compound of a big Gurudwara in the Bhagwan Nagar village. By nine o'clock in the morning, when we were there, a small crowd of sixty people had gathered. Among them were men, young and old women and children.

"Why have these men and children come?" I asked.

"Well, ours is an integrated service. It is not merely the I.U.C.D. If family planning is to suceed among villagers, we should cater for their medical needs also and thus bring them round to listen to us. There has to be social involvement. From the clinical approach to the community approach is our method. And so, you see, our mobile clinic is equipped for that."

The streamlined mobile clinic, with two compartments, has all the facilities and accessories necessary for conducting even a surgical operation. It is fitted with a motor to make it air-conditioned, and has a cubicle for I.U.C.D. insertions. In the van were Miss H.Bindra, a Lady Health Visitor, and Miss J. Bhatia, the public health nurse, who were helping the doctor in handling I.U.-C.D. cases.

On the day we went, the doctor said she did four I.U.C.D. insertions and pulled out the loop in one case.

"She had it in without asking her husband and he was very angry when told about it," said Dr Nalwa.

(*Continued on Cover iii*)

Books

Villages, Towns, & Cities in Asia

Urban-Rural Differences in Southern Asia: Some Aspects and Methods of Analysis. UNESCO Research Centre on Social and Economic Development in Southern Asia. United India Press, New Dehli. 147 *pages.*

Julia Abrahamson

THIS is the third study on urbanisation sponsored by the UNESCO Research Centre on Social and Economic Development in Southern Asia. Two previous volumes dealt with *Social Implications of Industrialisation and Urbanisation: Five Studies in Asia* and *Urbanisation in Asia and the Far East.* The present volume examines further some of the problems discussed in the second study, with special consideration of the role of small towns. It is the product of the thinking of representatives from several countries in Southern Asia who met in a regional seminar in New Delhi in December 1962. The thirty-six participants were drawn from various disciplines of the social sciences.

The Seminar "had a three-fold purpose...": (1) "to review criteria and categories of urban-rural differentiation and relevant sources of information as well as...studies of urbanisation trends and patterns in the countries of Southern Asia" and, hopefully, to establish the extent to which such categories and studies were comparable; (2) to analyse some of the major assumptions in the classification of settlements, consider their validity, and list the evidence needed to verify them, and (3) "to consider...policies for urban dispersal and for the promotion of planned regional settlements, with special reference to the place of small towns" in such planning.

Papers were presented dealing with the statistical and geographical background, with the pattern of rural-urban migration and indices of rural-urban differences, and with foci of social change.

The discussions based on these papers considered such questions as: Can census definitions and categories of urban places in the different countries be compared? How clear are the distinctions between the known characteristics of urban and rural areas as well as between towns of different size groups in any one country? Do urban settlements in the countries of Southern Asia portray types of social structure which are clearly distinct from those found in rural settlements? Is migration to large cities predominantly rural or urban in origin? Are variations in the social structure of towns associated with their population size or with other characteristics? Is urbanisation spreading downward from the big cities and/or upward from the small ones? Under what circumstances is urban and industrial decentralisation economically feasible and socially desirable?

The participants in the seminar could not have expected to arrive at definite answers, and they did not. In a thoughtful introductory chapter. Mrs Ruth Glass, Director of Research, Centre for Urban Studies, University of London, who was in charge of the scientific direction of the seminar, assesses the problems considered, the findings, and the value of the seminar. She stresses the following points :

Knowledge of the processes and implications of urbanisation in developing countries is limited by several factors. The approach and analysis are largely conditioned by Western thought and experience, which follow lines of demarcation between rural and urban matters and between the various disciplines of the social sciences. The research and literature to date have been largely focussed on large cities, on the one hand, and on villages, on the other, with little research attention given to small towns in Asia. The official definitions of "urban" and "rural" and criteria of "urbanism" vary from country to country and sometimes even within the same country. Urban-rural differences are becoming more and more inconsistent; some areas categorised as rural have an urban occupational structure since their residents are commuters to cities, while some agricultural or fishing centres may be more urban in outlook because they cater for tourists.

"In a sense the negative conclusions reached by the Seminar were the most positive ones" because they high-lighted the scarcity of reliable information, pointed out the hazards of interpreting data on the basis of arbitrary definitions of "urban" and "rural" and emphasised the need for caution in making generalisations about urban-rural differences. Generalisations based on the assumption of the similarity of small towns were rejected. In several countries of Asia, towns are distinguished from one another not only by size but by age—whether they are old or newly developed as the result of major industrial projects—by function, and by capacity for socio-economic change. Inter-urban differences are at least as great as those between so-called urban and rural settlements. This has come about because of internal migration. Since the major movement of population in most countries in Southern Asia is directly from villages to large cities, the contacts between the two are often greater than those between towns and villages. "Apart from literacy—a significant exception—none of the existing demographic, social and cultural indices show a consistent sharp contrast between urban and rural areas nor a pattern of differences matching that of the hierarchy of urban settlements, ranked in terms of population size."

The Seminar's concern with rural-urban differences has relevance to planning and the practical considerations involved in the development

of small towns as "counter magnets" to prevent the continuous growth of large cities.

The volume would have been strengthened by the inclusion of more of the background papers, particularly those by W.F. Wertheim, I.P. Desai, R.K. Mukerjee, and Dr Karol J. Krothi, dealing respectively with urban characteristics, small towns, rural-urban differences in social characteristics, and "Urbanisation—Through Large or Small Towns?" One wonders why these were omitted; why only the papers relating to definition of urban population and population statistics and movement were selected; also whether a more simply worded text and a lesser number of tables might have made the publication more interesting and useful to a wider audience.

The volume however, presents valuable information based on scholarly research; it points up controversial questions; it probes assumptions which call for examination. The book is worth a place in the libraries of social scientists, planners, and others concerned with urbanisation for the illuminating introduction and conclusions by Ruth Glass alone. An added bonus is the bibliography on aspects of urbanisation in Southern Asia, prepared by Dr Ashish Bose.

Mrs Julia Abrahamson is Programme Director of the Baroda Community Development Service sponsored by the American Friends Service Committee.

QUOTATION BOX

I wonder whether we always require China and Pakistan to unite us and nothing inside our own country inspires us to it.

—Acharya Vinoba Bhave

The only abnormal feature of the otherwise normal life at Amritsar is that instead of taking shelter, as they should during Pakistan raids, people rush to rooftops. They like seeing the marvellous marksmanship of the men operating Amritsar's anti-aircraft guns.

—Mr Inder Malhotra in "The Statesman"

Pakistan has found it the final insult that India is not obsessed by Pakistan as Pakistan is obsessed with India.... The Pakistanis have assumed an attitude of defiant equality towards India and in the military field make claim to superiority. This nonsense has got to be knocked out of the Pakistanis heads and, unfortunately, it has had to be done by force.

—A correspondent of "The Statesman"

One experiences there (in Punjab) an overpowering sense of normalcy. At a point near the border, our tanks lumbered forward to meet the enemy but through the pall of dust raised by them one could see farmers fussily preparing their fields for the impending wheat sowing.

—Mr Krishan Bhatia in "The Hindustan Times"

The Pakistanis have spent eighteen years trying to get a settlement in Kashmir of the kind satisfactory to themselves. At the start they very foolishly tried a tribal invasion.... and (were) beaten back... They tried a flirtation with China... They tried to use the popular appeal of Sheikh Abdullah for their own purposes, which are not his, and saw him rearrested. Last month they tried force. And again they will probably fail.

—From article "Pakistan Can't Win" in "The Economist", London

While travelling in an Army jeep towards the Haji Pir Pass, in the area of J & K till recently in Pakistani occupation, an Indian Army observer saw a large number of people peering inquisitively at him.

He stopped to enquire the reason. A 70-year old villager with a grey beard told him, 'We have not seen any vehicles for 17 years in this area. Most of the children are seeing a motor vehicle for the first time in their life.'

—From a Press note

I was dealing with sophisticated and extremely well-briefed men, but men who would suddenly, as if it were the most natural thing in the world, come out with such phrases as: "In the places where the thought of President Mao is correctly applied, the rice harvest has greatly increased".

—Mr K.S. Karol on Maoism in "New Statesman", London

I do not know if one can judge oneself.

—Mr G. L. Nanda

In a guided democracy as in a "basic" or "people's" democracy, "spontaneity" requires a high degree of organisation.

—R.S. in "The Hindustan Times"

If some cranky fellow should organise a competition to assess who has got the largest number of personal friends, I will come out with the first prize.

—Mr S.K. Patil

OUR GNATS

From Page 3

turbo-jet. And propellers give greater control and slower take-off and landing speeds. So they are used in heavier aircraft. At higher speeds the pure jet is the best.

The most important advantage of the jet engine is that it is extraordinarily light compared to an internal combustion engine and its propulsive efficiency is three times more at great speeds. Jets consume more fuel than the piston engine.

In the modern fighter planes driven by turbo-jet engines the wings are thin and of short span, generally well swept back. The pilot's cockpit and armaments are well forward in the nose and the jet engine is at the back. The cockpit is air-conditioned and pressurised and the pilot wears protective pressurised clothing. Automatic ejection-type seats are installed to provide emergency means of escape from fighters. When this equipment is operated, the seat and the pilot are blown out of the plane after which a parachute opens automatically.

All available space in the fuselage (main body) of the fighter is used to store fuel, ammunition, guns, radio, radar, computers, navigation devices, cameras, power plant and other equipment. The air-to-air missiles are fitted on each wing tip. Provision is also made under the fuselage or wings for mounting of bombs or rockets.

From the days of pistol duels, aircraft armament has travelled far to air-to-air missiles. At the beginning of the Second War the fighters carried six or eight machine guns in the wings, and bombers had revolving guns. As the war progressed, intensive defence research made it possible for the fighters to carry 20 mm. cannon which could fire 100 rounds per gun, and later rockets. The guided missiles now fitted to many of the fighters fly at 3000 km. per hour and give approximately 70 per cent direct hits on targets at a maximum distance of 3.35 kilometres.

Rs 815-Crore Fourth Plan for Madras

Every village to be electrified
Every village to have protected water supply
Every Harijan family to get a house-site
Free and universal primary education

EVERY village in the Madras State will have been electrified by the end of the Fourth Plan. The State has made a provision of Rs 30 crore for the programme of rural electrification. The programme will help both agriculture and rural industries.

The Fourth Plan of Madras envisages a total outlay of Rs 815 crore, which is bigger than the outlay of the State on all the three earlier Plans put together. A Plan of such a big magnitude is deemed necessary considering the high density of population in the State, which is 669 per square mile as against 373 for all-India.

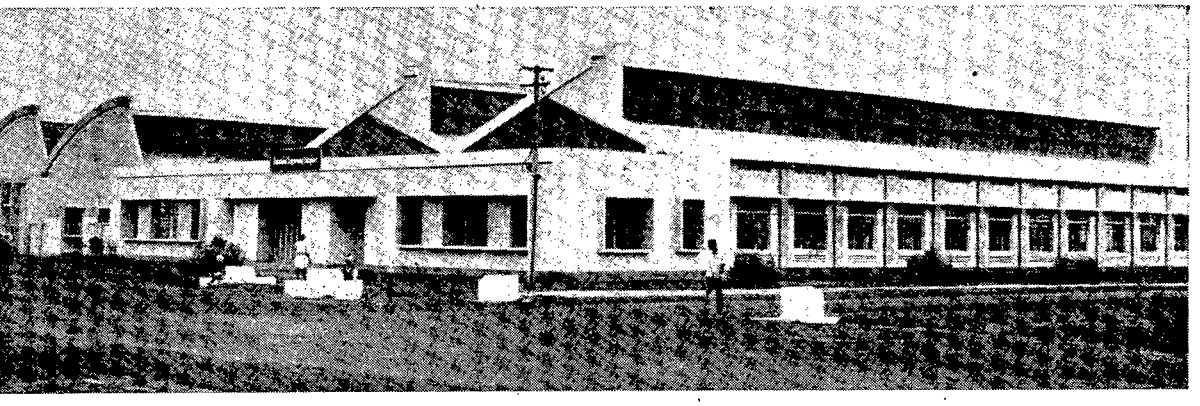
The Plan keeps in view the targets and objectives of the national Plan and seeks to bring about their fulfilment. The first priority, as in the national Plan, is assigned to increasing agricultural production.

The total expenditure on the Third Plan is expected to reach Rs 340 crore. The Third Plan has achieved the targets that the State had set itself in the fields of power, minor irrigation, general and technical education, small-scale industries and roads. The State took up, in the last two years of the Third Plan, a crash programme for pushing through schemes calculated to yield quick returns in the short run. The programmes of minor irrigation and rural electrification were intensified.

By the end of this year, most of the villages with a population of 2,000 and above would have been electrified and 2.35 lakh wells would have powered pumping sets.

Intensive cultivation programmes have also been introduced, as a result of which the consumption of nitrogenous fertilisers is estimated to have risen to 4 lakh tonnes in the current year from 1.15 lakh tonnes in 1961-62. High yielding strains of crops have been adopted on a wide scale.

During the Third Plan, agricultural production in the State increased to 65 lakh tonnes (compared to 53 lakh tonnes in 1961-62—an in-



Left : The industrial estate at Ambattur. Below: Third power house of the Kundah hydro-electric project built with Canadian aid (see YOJANA July 19, 1964.)

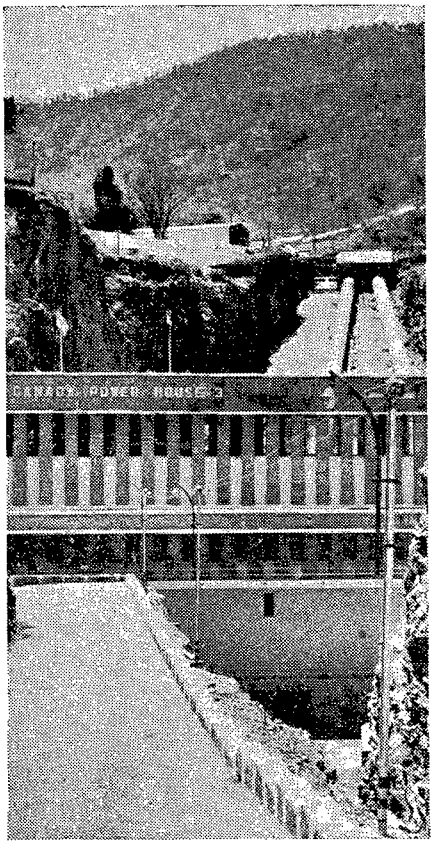
crease of 22 per cent during the five years). The Fourth Plan aims at achieving a production of 82 lakh tonnes of food grains, a further increase of 26 per cent.

To achieve this target of food production, the Plan emphasises adoption of modern methods of cultivation, application of improved seeds and fertilisers, minor irrigation and rural electrification. An additional 2.5 lakh wells will be provided with power to work pumping sets. To encourage the use of fertilisers in rain-fed lands, the State proposes to introduce a scheme of subsidy. Also, more fishing craft will be mechanised and deep-sea fishing developed.

Apart from minor irrigation, a few more schemes of medium irrigation will also be taken up for exploiting the marginal surpluses. The old irrigation systems will be improved. The irrigation channels in the Tanjavur district will be modernised and the Periyar channels improved. The problem of drainage in the Kaveri delta will be put on a systematic basis. A large area in the delta gets water-logged on account of heavy run-off from north-east monsoon rains. Upland drains entering the delta have therefore to be diverted without affecting the irrigated crops. A scheme costing Rs 5 crore has been included in the Plan for this purpose.

The programme of industrial development follows the policy of encouraging the private sector with provision of necessary economic overheads. However, during the Fourth Plan the State will take a direct part in the development of industries and concentrate on establishing medium-sized basic industries producing raw materials and intermediaries for big private industries. It will set up factories to produce consumer goods such as yarn, sugar and cement, with a view to influencing the prices of these commodities. Co-operatives will be encouraged to take up the production of consumer goods. As for major industries, the oil refinery and the Salem steel plant are the main projects proposed.

A programme of developing power generation is necessary to meet the needs of both agriculture and industries. By the end of the Third Plan, the installed capacity in the State would be 1,140 MW besides 400 MW to be commissioned at Neyveli. The Annamalai hydro-electric scheme, the Basin Bridge power station and the Kodayar hydro-electric scheme will be completed during the Fourth Plan. Eight new schemes with a total installed capacity of 1,575 MW and costing Rs 138 crore are proposed to be undertaken. An outlay of Rs 217 crore has been proposed in the State's Fourth Plan for power programmes. Besides, the Neyveli thermal power station will have to be expanded and the proposed atomic power station at Kalpakkam near Madras established in the Central sector to meet the growing power requirements in the State.



Social services will receive greater attention. Free and compulsory primary education will be introduced throughout the State by the end of the Fourth Plan. Textbooks and uniforms are proposed to be supplied free to poor children in primary schools. Backward classes will be given more facilities. Rs 80 crore will be spent on the expansion of education at different levels.

The programmes of developing communications, water supply, and medical and public health facilities aim at bridging the gap between rural and urban areas in regard to the essential amenities of life. Every village will have a protected water supply or a pipe line. Lands are being requisitioned in order to allot them to Harijans and one lakh house sites have thus already been distributed during the past three Plans. This programme will be accelerated to provide a house site for every Harijan family in the rural areas. Besides, all poor people will be given house sites by the end of the Plan period. A sum of Rs 15 crore has been earmarked for this programme.

FOURTH PLAN TASKS

From Page 7

and in irrigation rates was only Rs 95 crore, a mere 2.6 per cent! Balanced development required more investments in agriculture and more savings from agriculture, because agriculture constituted a very large proportion of our economy and income.

During the next five years, over administration, defence and development, the Governments would be spending nearly Rs 20,000 crore. Even a 2 per cent economy, rigidly carried out, all along the line, would yield Rs 400 crore for the Plan. Such purposeful economies had to precede and accompany all efforts at mobilising resources, existing as well as additional.

Mr Mehta said in conclusion: "The claims of defence obviously have the overriding priority. But in a large measure they do not conflict with, but in fact reinforce, the needs and design of development. As we repulse the onslaughts of aggression on our land we shall be achieving greater solidarity among our people, a sharpened sense of sacrifice, greater efficiency in effort and discriminating understanding about priority needs. These insights and understanding will help our development efforts equally."

Several Chief Ministers of States made brief observations after the Prime Minister had spoken. Mr Mohanlal Sukhadia of Rajasthan said that the Plan should be given defence-orientation and each State should take suitable steps in common with other States. Mr S. Nijalingappa of Mysore said higher agritural production would best be achieved by extending agriculture. Mr. K. Brahmananda Reddy of Andhra Pradesh stressed the need for economies in administration and for a regional approach to economic problems. Mr K.B. Sahay of Bihar said that if effective action were taken against floods, agricultural output could go up substantially in Bihar. The farmers had become keenly fertiliser-minded and there was considerable scope for rural employment in suitably located industries. Mr P.C. Sen of West Bengal suggested higher inter-State sales tax, higher excise duties for sugar, tobacco and mill-made cloth and passenger tax for those travelling on the Railways, in order to increase resources. Mr. Balwantrai Mehta of Gujarat thought that the size of certain sectors like irrigation and industries might have to be increased, with the Central Government helping the financing of some major projects. Mr V.P. Naik of Maharashtra referred to procedural delays in taking decisions and thought there could be greater delegation of decision-making power.

JOWAR RECORD

In 1964-65, the production of jowar was 9.81 million tonnes, the highest so far and 7.4 per cent more than that in the previous year. According to the all-India final estimates by the Directorate of Economics and Statistics, 18 million hectares of land were under jowar crop in the year, an increase of 0.3 per cent over the previous year.

SALUTE TO SCHWEITZER

THE SAGE OF LAMBARENE TAUGHT AND PRACTISED 'REVERENCE FOR LIFE'

Ram K. Vepa

ALBERT Schweitzer is no more, and in his passing the world has lost one of the wisest voices of the century. He has been a symbol of sacrifice and dedication, providing inspiration and guidance to millions all over the world.

The life of Albert Schweitzer is almost out of a story book. When, fifty-two years ago, Schweitzer decided to undertake medical work in the heart of the French Congo (now styled the Republic of Gabon) he was no romantic, fascinated by the gloomy mysticism of the Dark Continent. Although only 38, he had already built up a considerable reputation as a philosopher and musician. His biography of the great German musician, Johann Sebastian Bach, had won acclaim. It seemed as if a fruitful career lay before him as a distinguished European savant; but when the inner call came to him, Schweitzer embarked on a new career to serve the people of the African continent.

Renunciation is the keynote of his whole life; but his renunciation was not negation of life but a way of seeking fulfilment. At Lambarene in Gabon, remote from Western civilisation, he established a hospital "to minister unto the maimed and the sick". As he buried himself in the rain forests of the Congo basin, he really went into the heart of civilisation.

At Lambarene, Albert Schweitzer gathered around himself a small but devoted band of doctors, men and women, who, animated by similar ideals and loyalty led a simple, almost Spartan, existence. The hospital itself, although a 400-bed institution, is no gleaming antiseptic affair. Its tin roofs and ramshackle wooden buildings merge easily with the shabby environment. In fact Schweitzer had intended his 'jungle clinic' to be easily accessible to the poor and illiterate, who, he argued, would feel out of place in an ultra-modern hospital with chromium plating and white overalls.

For decades after 1913, the outside world heard little of the white Doctor who was rendering service to fellow man, deep in Africa, and it was not till the Nobel Peace Prize was awarded to him in 1952 that the world began to take serious notice of him. It is doubtful whether Gandhiji himself had known much of the kindred soul. His autobiography *Out of My Life and Times* outlined his attitude to life and its problems, while an even earlier work *On the Edge of the Primeval Forest* described his position, both literally and metaphorically. In his work *The Kingdom of God*, Schweitzer sought to provide a personal interpretation of the teachings of Jesus Christ. "Christianity", he wrote, 'has constructed an elaborate dogma but it has not really comprehended that the mission of Jesus was to enable everyman to discover the Kingdom of God in himself." His monumental work, however, was *The Philosophy of Civilisation*, conceived in four volumes, of which only two have been published.

Although Albert Schweitzer is respected by millions and even venerated by some as a near saint, he is not without his share of detractors. There are some who see in his life mere escapism; others regard him as sentimental, patronising and even colonial. They point out that the actual impact of his work in Africa is no more than that of other missionaries. An educated African is said to have remarked that he would rather die unattended than be treated at the hospital at Lambarene. Perhaps the most significant criticism of Schweitzer is that he lived in an age before the Frist World War, "hardly knowing or caring that a century and a continent have passed him by"; in many ways, it is said, Schweitzer is an anachronism in a continent where the wind of change has been blowing hard, liberating millions of people not merely from colonial domination but also from voodoo and witchcraft.

It is true that the world of mid-sixties is a vastly different place from that of 1913, when Albert Schweitzer first set out for Africa. Yet, in all this tumult and upheaval, the spirit and purpose of man has changed but little, and before Albert Schweitzer is dismissed as a relic, one may pause to examine the symbolism of his life and achievements. Why, it will be asked by later generations, did he have to leave everything and bury himself for more than five decades in an utterly alien environment? The answer is best given in his own words: "I decided I would make my life my argument. I would advocate the things I believed, in terms of the life I lived and what I did". One recalls the life of Gandhiji who, impelled by a like motive, remoulded himself and his country. "I did not want my ideas to become ends in themselves", Schweitzer wrote, "the ideas took hold of me and changed my life. Resistance to those ideas would have been impossible." How very similar are the "ideas" of Albert Schweitzer to the "inner voice" of which Gandhiji had often spoken!

What then are these "ideas" which had influenced Schweitzer? "No single phase of my own philosophy", Schweitzer said, "is more representative of my thinking than Reverence for Life. Ethics is nothing else than reverence for life. In reverence for life, religious feeling lies before us in its most elemental and most profound form". In choosing for his service the people most outwardly alien to him, Schweitzer was affirming, in practice, his innate belief in the sacredness of all life. It is in this ability to make a sustained sacrifice for a principle, even as Socrates, Christ or Gandhi did, that

AS THE PLAN MOVES

LUBRICATING OIL PLANT TO BE BUILT

A lubricating oil base stock refinery will soon be set up in Bombay under an agreement signed on September 15 between the Union Government and Esso. The agreement was being negotiated for the past six years.

The plant will have an annual capacity of 1.45 lakh tonnes of lubricating oil, of which 55 per cent will be high-grade automobile base oil and the remaining 45 per cent medium-grade industrial type base oil.

The plant will be built in two years at a cost of Rs 7.2 crore.

A new company will be formed in which the Union Government and Esso will be equal partners.

Lubricating oil is the costliest of petroleum products. We import Rs 4 crore worth every year.

SUGARCANE OUTPUT UP

The production of sugarcane is estimated to have increased by 16.4 per cent in 1964-65, the production being 122.13 million tonnes compared to 104.92 million tonnes in 1963-64.

PACT WITH YUGOSLAVIA

India and Yugoslavia have entered into an agreement for co-operation in the development of atomic energy for peaceful purposes.

VILLAGE VOLUNTEER FORCE

The Ministry of Community Development and Co-operation has urged the State Governments to mobilise the Village Volunteer Force fully to meet the present emergency.

The new tasks for the V.V.F. will be to guard the village from infiltrators and foreign paratroopers, and watch and protect means of communications and industrial installations. It will also supplement the regular police and other forces deployed in the area.

SNIPPETS

The Banana and Fruit Development Corporation has prepared a breakfast food for jawans. The food is based on banana powder and contains 16 per cent protein and adequate minerals and vitamins.....The output of iron ore during the first six months of the current year was over 10 million tonnes, 10 per cent higher than that in the first half of the previous year... Uttar Pradesh has so far re-forested 45,640 acres of degraded forest lands for raising the supply of timber for industries and wood for fuel...The Hindustan Shipyard, Visakhapatnam, will produce six ships every year...In 1964, there were 8,161 newspapers published in 44 different languages in India...Protection to the safety match industry will be withdrawn.

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Chief Editor: H.Y. Sharada Prasad

Courage

THE whole land is thrilling to reports of simple courage on the part of jawans, generals and civilians. The jawan Ayub Khan who hails from Rajasthan (our answer to the Pakistan President of the same name) and who smashed a tank in pitched tank battle, Havaldar Abdul Hamid who, lone-handed, destroyed three Pattons before being cut down by a fourth, gunner Raju, a city's saviour and darling, whose deadly aim will go into military history, the unnamed pilot who gave his life to break up the Sargodha radar system, the Punjab villager who pinned down an armed Pakistani paratrooper with a thick piece of wood, the station master of a small village who prepared 400 meals every day for jawans—these are the stuff of which India is made.

Three years ago Mr Nehru said that if the Chinese attack had come like a thunderbolt, the response of the people of India also come like a thunderbolt.

Between then and now there is an even greater sternness of will. The kind of confidence that has been seen in the two weeks after Pakistan pushed its forces into Chhamb is of the kind that can stand not only successes but setbacks. With this kind of civilian morale, we can wage a long struggle and make the world appreciate the rightness of our policies and the strength of our people.

A typical example of our people's courage was given to us by a teacher in Delhi University. One day he discovered that the large number of labourers, men and women, who were working on a building in the University had all disappeared. When he didn't see them for a second day he asked the contractor. He was told that after the aerial bombings around Jodhpur, the panchayats of the villages had written to all their people to come back home. And the building workers had all gone back to where danger is.

IGNORAMAN

Wants to Know

We have smashed
Pakistan's
Pattons
How shall we deal
with the
Pattons
in our offices?

Fewer

ON April 21 this year there were 9,257 family welfare planning centres in the country. On may 21 the number stood at 13,901.

The August issue of *Family Planning News*, which gives these figures, says that this marked increase is "because of supplementary information" received from the various States.

The journal gives a useful account of the Central Family Board's recent meeting and a seminar of family planning officers. The proceedings were not without light moments. When the job specifications for various kinds of family planning workers were being discussed, one member moved that the proposed sentence "The family planning health assistant must pay frequent visits to the auxiliary nurse midwife" be revised by dropping the word "frequent". Everyone agreed.

Yojana, as an ardent advocate of the movement, will not be mistaken if it pleaded for fewer pictures of seminarists in such journals. The August issue has fourteen pictures. All of them are of discussion groups and of dignitaries, and none is of family planning camps or of the ordinary men and women who have to become converts to the faith.

VILLAGE WOMEN ADOPT THE LOOP WAY

(*Continued from Page 21*)

"So we had to take it out. It is actually a hard task to get over the ignorance of people. Another woman in whom we inserted the loop had bleeding. She went to an untrained *dai*. The *dai* terrified her saying that it was *bijli ka tar* (electric wire) that we had put in and then pulled it out herself. It created complications."

"Do you give other contraceptives also?"

"Yes. We have our Voluntary Depot Holders to whom we supply all kinds of contraceptives except the loop. They propagate them among the villagers and supply them with the contraceptives".

In Bhagwan Nagar village itself we went to Siddharth Basti, a colony of Harijans. The Voluntary Depot Holder there was Tara Chand, a tailor. He told us that besides him, other social workers also occasionally visited the Basti and preached family planning. Among them was a Buddhist monk. When the Harijans faced him with the question "Are not children gifts of God?" the monk countered, "The sun is also a gift of God, but don't you hold an umbrella when you don't want the sun?"

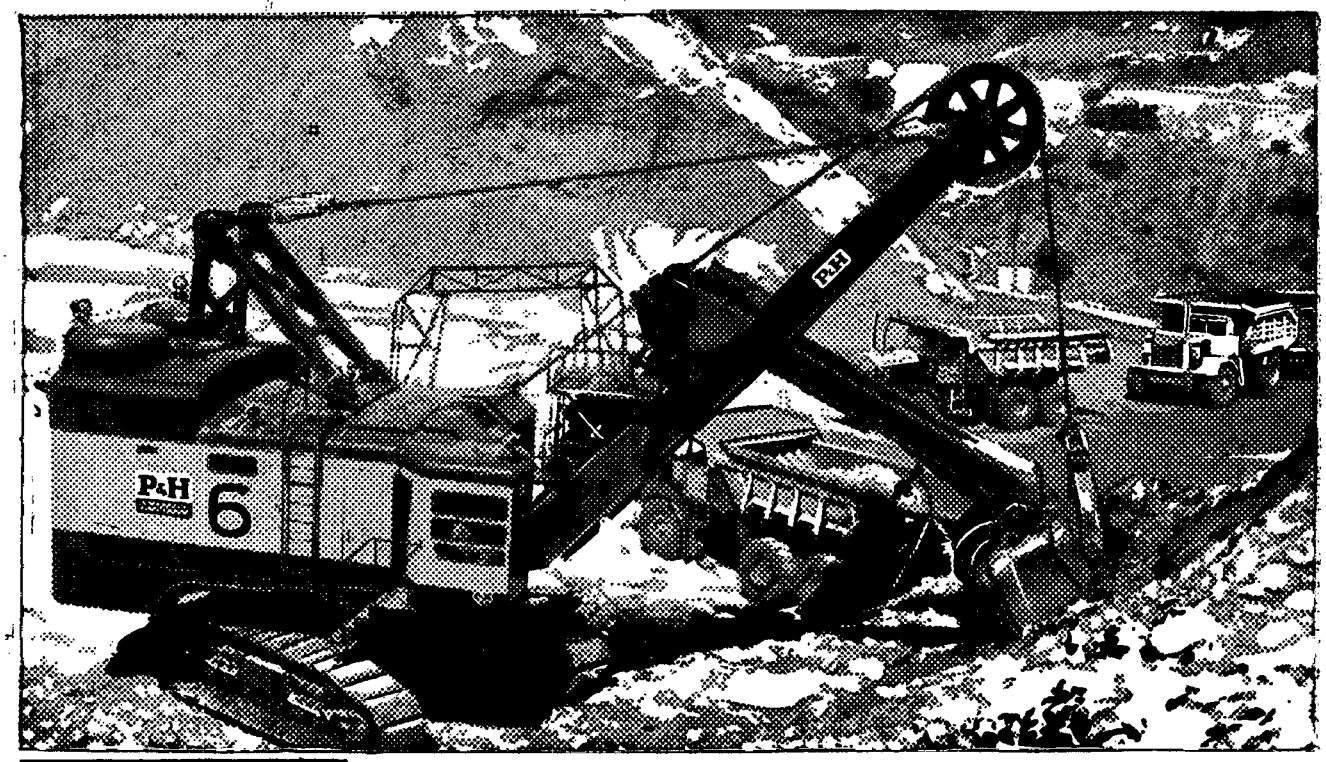
Thus the message of family planning spreads to the villages with the help of enthusiastic doctors, persevering *dais* and itinerant social workers.

Collector's Item

A road sign near
a Mysore school :

BEWARE OF SCHOOLS

Reg. No. D—876



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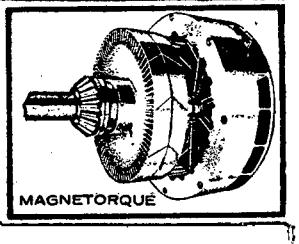

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