YOJANA

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NO-14

57 LAKH HOUSES IN FOURTH PLAN
"PEOPLE'S WORK AREAS" EXPAND
ATOM FINDS FAULTS

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 of problems of social and economic development.

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IN THIS ISSUE

Cover, on houses, is by JIVAN ADALJA

EARNING A PENCIL

I have come to India, and the Yojana Bhavan, in order to study some aspects of the Indian manpower situation at close range. I have been alternately impressed with the innate qualities of Indian workers and shocked by the great misuse, and disuse, of these qualities. One incident that occurred recently is a classic in office comedy, and indeed would have been quite funny if similar occurrences were not so common here.

A peon entered the room of a colleague with a handful of pencils, and a large, official register. My colleague was offered a pencil, his standard three-month allotment, and was required to sign a receipt for this 15 P item in the register. On closer examination, I found page after page of the register to be covered with similar scribbled receipts for "1 pencil".

I am intrigued as to the eventual use to which this register will be put. Is it intended to do a statistical analysis of "The Utilisation of Pencils in the Planning Commission, 1965-67" with classifications by division, sex, age, and job title of the workers? (If so, I understand that different quality pencils are supplied to different grades; the wearing capacity of the different types must certainly be taken into account.)

Perhaps it is intended to present an award to the individuals or divisions which show the greatest economy in pencil utilisation? A public presentation of such an award would be a great incentive to the other workers in the Commission to reduce their consumption of pencils. There is only one slight danger in such a scheme; since the only output of the Planning Commission is the written word, a striving towards the ultimate in pencil conservation might result in a drastic reduction of Planning Commission output.

New Delhi ROBERT W. MOSS

NEXT FORTNIGHT

THE URANIUM MILL AT JADUGUDA

HAS PANCHAYATI RAJ HURT EXTENSION SERVICES?

POTATO RESEARCH
—Staff Report

Necessary

I am a student of M.A. (class economics). I have necessary your publication 'YOJANA' Monthly Magazine. Pl. let me send one copy as specimen. Thank you.

Mandala ***

(The letter above has been published with no corrections, specially for English enthusiasts. The name of the writer has been withheld for obvious reasons—Editor)

Heavy Structurals

The Triveni Structurals has been registered to establish and run the heavy structurals project at Naini near Allahabad.

The project hopes to make 25,000 tonnes of structures for buildings, towers, bridges, pressure vessels, etc. It will be built with the help of an Austrian firm at Rs 5 crore.

'OPERATION HARDROCK'

The United States of America has announced a loan of 3.5 million dollars to meet the foreign exchange required for an extensive survey of non-ferrous minerals in India. The project is called "Operation Hardrock".

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EXCHANGE AND THE PLAN

THE import policy announced at the beginning of the month points up the acute straits we are in in regard to foreign exchange. It has also occasioned a good deal of public concern and comment. Some of this comment is impassioned and constructive; some of it is openly motivated by political rather than national interest.

The strongest of economies sometimes run into ways-and-means problems. The United States was recently worried that the outgo had been more than the inflow. Britain at the time of the Suez crisis had a payments crisis and was helped out by the International Monetary Fund.

For immediate problems the Government will no doubt find some immediate remedies. But it is only fair to state clearly that ours is not a mere short-term problem. It has to be equally clearly understood that a lasting solution of our foreign exchange problem has to be sought over the long term, through well-thought-out and well-enforced policies.

We are in the position of a man who builds a big house, and in the process of construction runs into cash difficulties. The advice to give him is not to abandon his effort or to revise his plans and build a little house on the large foundations. He must hold fast to his determination, and seek to complete some portions of the building and put them to productive use, while going ahead with the rest of the project.

The analogy need not be pressed further. But the essence of it might be summed up in these words: that the true solution to our foreign exchange crisis is in more development and increased production, and not in holding back development.

Agricultural production must go up to produce more of the exportable commodities and, what is even more necessary, to do away with the dependence on foreign food. All the food that we get from abroad is not PL 480 food from the United States; some of it we buy the hard way. And even on the PL 480 food that we get we have to pay shipping and handling charges in foreign currency. This is a great and urgent area in which saving of exchange can and must be made.

But higher agricultural production and productivity depend on inputs from industry. To grow more grain, jute, cotton and plantation products, we need more fertilisers and pesticides and pumps and other implements. Industrial production in these sectors has to go up.

Industrial production has to go up in other sectors too. Steel and machinery, for instance. We are now importing large quantities of them. If we stop their imports, we save exchange, certainly but we shall bring the economy to a halt. What we must aim at is to make more steel at home so that imports may be stopped as soon as possible—and we might even exploit our advantages and *export* steel and machinery.

Higher steel production—and higher production elsewhere—depends on *imports* of machinery and materials. To slash imports in these essential fields is to cripple the economy. If anything, the need for imports will grow. But there is a case for examining the pattern of these imports and reorganise it in such a way that our self-reliance and ability to pay are built up.

This examination of the content of imports with a view to making fuller use of capacities and building up long-term capabilities is necessary and, doubtless, being done. Investment and import policies must both be guided by the consideration: Can we make within the country and with the equipment already established, things the import of which we can stop? This is referred to as import substitution; it is more, for it will bring about a basic structural change in the economy. Import substitution should not be regarded as being unrelated to export promotion. They are part of one basic process. The same decisions that would result in saving imports could result in enlarging exports; in the process they would have increased domestic product and added to the strength of the economy. Higher production of farm products and of steel will do this, for example. The battle for exports will be won not just through exporting a larger volume of the traditional export commodities. The world market for these has been unfavourable for years. We must so draft our policies as to alter the structure of exports.

By giving up our objectives we are not going to be blessed with a glut of foreign exchange. Merely by going on as we have done, too, we shall not be solving the problem. We need to learn from experience and seek out and stress the long-term policies which alone will yield a lasting solution. And we must remind ourselves constantly that our aim is to do without net inflow of foreign capital and equipment by the seventies.

57 Lakh Houses in Fourth Plan

BUT NOT ENOUGH, NOT ENOUGH

Central Board Promised: Start in Prefabrication

YOJANA REPORT

"HOUSING IS A basic necessity of the people and it must be provided," said the Prime Minister a few weeks ago while inaugurating a new "bhavan" in Delhi.

By drawing attention to what can be regarded as a self-evident truth the Prime Minister was reminding administrators that governmental programmes should keep social needs and social purposes uppermost in their thoughts.

The basic needs of human existence are food, cloth, work and a home to live in, with medical care and education following closely behind. Yet there is no nation which is wholly satisfied with the stock of houses it has—not even the small and highly prosperous countries like Sweden and Switzerland.

Among the larger countries, the United States of America needs to overhaul a fourth of its housing. The Soviet Union, after many years of self-denial in the effort to build a strong economy, has only recently launched a national house-building campaign (see article on page 7) so that at the end of the current 20-year plan, that is 66 years after the Revolution, it will assure adequate minimum housing for all.

In our country where we cannot yet assure a job or a minimum availability of food for everyone, adequate housing can come only years later. But that does not mean that the problem can be neglected: indeed it is not being neglected.

While Government is building houses for the poorer people in increasing numbers, the bulk of homes are still privately built in our country. This will be so for years to come. Building a house, like buying a piece of land (and one might even say, like marrying), is a big personal urge.

In the five years of the Third Plan, between 1961 and 1966, it is expected that something like Rs 1,565 crore will have been spent on building houses—Rs 460 crore by the Government and the rest by individuals.

During the Fourth Plan period (1966-1971), the investment in house-building is expected to be Rs 2,460 crore—more than a tenth of the total outlay on the Plan. Something like 57 lakh houses will be built from this money (of which Rs 1,010 crore will come from public funds).

★

FIFTY-SEVEN LAKH houses—this sounds impressive.

But like most other impressive figures, this is only a drop in the Indian bucket.

The strange thing is that the housing shortage will be *greater* after these houses are built than before!

The reason is simple: the huge rate at which our population keeps growing. Families grow at a greater rate than buildings to contain them.

> The Census of 1961 for the first time gathered together the relevant figures on the housing situation in the country. These figures show that in 1961, out of 845 lakh households in the country, 53 lakh had **no separate house at all to live in.** The total number of dwelling houses was 792 lakh. Of them 185 lakh were **pucca** houses. The shortage of housing, on the assumption that all the 845 lakh households had to have a **pucca** house, was thus 660 lakh.

Approximately 42 lakh houses will have been added in the Third Plan,—but at the same time the increase in the number of households will be something like 105 lakh. As in the case of employment, the faster we seek to go, the farther behind we seem to fall, for the reason that population moves even faster.

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IT IS A SITUATION with which Government is not happy. But can it, all at once, build seven and a half crore houses ? What about the materials for construction? And the men? And the investment ?

The housing policy of Government consists of two elements: one, to set apart increasingly larger sums from public funds to build houses for those sections of the people who are in the greatest need of housing; and, two, to encourage people who are able to do so, to build houses for themselves.

Who are the needy sections ?

In towns and cities, the industrial workers, the very low income group people, the slum-dwellers, and sweepers and scavengers. In mines and plantations, again the workers. In villages, the landless labourers and Harijans and other backward classes.

Further, as a model employer, the Government has to provide houses for its own employees. The

Railways, the Posts and Telegraphs, the Transport Ministry have all their own housing programmes. New projects, often built in remote places, have to build houses first, to attract workers. In addition, there is a separate Housing Ministry at the Centre not only to build houses for government servants at large but to allot funds for house-building through the State Governments, industrial establishments, co-operatives, etc., under eight social housing schemes. These schemes, with the year in which they were started, are :

1.	Subsidised Industrial Housing Scheme	1952
2.	Low Income Group Housing Scheme	1954
3.	Plantation Labour Housing Scheme	1956
4.	Slum Clearance & Improvement Scheme	1956
5.	Village Housing Projects Scheme	1957
6.	Middle Income Group Housing Scheme	1959
7.	Land Acquisition and Development Scheme	1959
8.	Rental Housing Scheme for State Government Employees	1959

Under the first scheme, the Union Government gives to State Governments, or State Housing Boards, or municipalities, *all the funds* if they undertake to build houses for industrial workers. Half the money is given as outright subsidy and the other half as loan. If employers come forward to build houses for workers in their factories, the Union Government gives 50 per cent as loan and 25 per cent as subsidy.

The scheme has not made as much headway as hoped for at the start. In the first twelve years after the inception of the scheme in 1952, only 171,700 houses were sanctioned; of these, the number in the employers' sector was only 32,474.

To induce more industrial establishments to come forward to build houses, the scheme has been liberalised in the last two years. The period for repayment of loan has been extended from 15 to 25 years. Also, employers can draw funds even before construction begins. It has been recommended to Government by a conference of Housing Ministers which met in Chandigarh in December 1964 that as a further incentive to employers, Government may (as in its pattern of aid to State Governments and Housing Boards) meet the *whole* cost, 75 per cent as loan and 25 per cent as subsidy; and if even then employers are not forthcoming, make it legally obligatory for employers to house a certain proportion of their employees.

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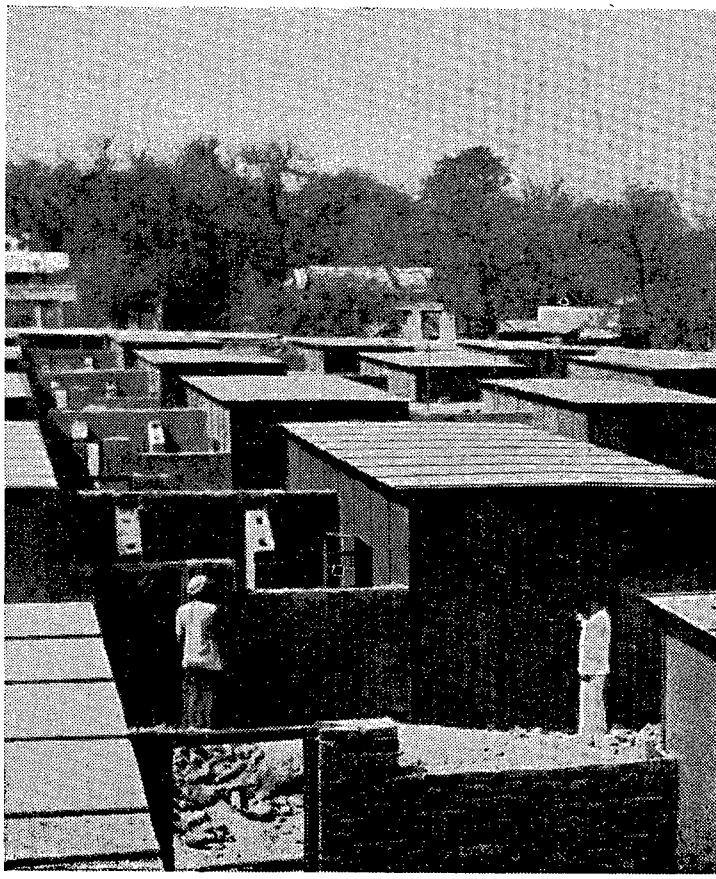
LET US LOOK at another scheme a little closely, namely the Slum Clearance and Improvement Scheme, in order to know the kind of problems that have to be faced and solved.

Even the advanced countries have slums—but they had more of them when they were industrialising themselves than now. In our country, because of the all-too-fast and unplanned growth of cities, it can be said that *the majority of the urban population lives in slum conditions.*

Slum clearance means that slum-dwellers must be provided fit houses either on the same site or elsewhere. They cannot pay higher rents. And the men who own the shanties and the plots of land they live in are not far too keen to let Government acquire the land.



"Swedish huts" set up in Delhi from prefab parts

The Union Government meets three-fourths of the cost of the new houses (37½ per cent as loan and 37½ per cent as subsidy). The rest has to come as subsidy from the concerned State Government. But so halting is the progress of the scheme that throughout the country only 85,441 tenements had been taken up in the eight years between 1956 and 1964.

The main obstacles are the galloping increase in the value of land in urban areas, and the difficulties, legal and other, in acquiring the slum areas.

To deal with these difficulties, a law has been enacted by Parliament but it extends only to the Union Territories. Under this Act, Government can acquire slum areas at a much lower rate of compensation than would be payable under the Land Acquisition Act. Also, Government can direct the owner of a slum area to improve it in accordance with plans given to him.

The State Governments have been urged to adopt similar legislation.

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IN THE LAST FEW years, just as we see stylish new houses come up in cities (even as slums are growing), so, too, new tiled or cement-topped houses are to be seen in villages. But, in general, housing in villages is getting worse, not better.

A Village Housing Scheme has been in existence since 1957 but at best it hopes to touch only 5,000 out of the 567,000 villages in the country. In the Third Plan the aim was to build 127,000 village houses accord-

ing to new plans, but only 15,800 had been built until November 1964.

Under the scheme, two-thirds of the cost of a house (up to Rs 2,000) will be given as a loan to the builder of a house. The poorer villagers cannot afford to apply for this loan; the better-off find it insufficient.

Another aim of the scheme is to provide house sites for landless labourers. But this also has not made much progress, because, to provide sites for the landless labourers, land has first got to be acquired. And property-owners are not ready to part with their holdings.

The Chandigarh conference of State Housing Ministers suggested that the State Government should make more active efforts to give house sites to landless labourers by acquiring land near the village *abadi*; and that loan levels to intending house-builders in villages be raised to 80 per cent of the cost of a house, up to a maximum of Rs 3,000 (instead of 66 2/3 per cent and Rs 2,000).

The feeling within the Social Welfare Division of the Planning Commission, which is concerned with the slow progress of schemes for housing Harijans and landless labourers in villages, is that the problem of Harijans should not be dealt with separately from the rest of the community. There should be an integrated approach to rural housing, and funds available for housing Harijans and other backward and weak sections and those earmarked for general rural housing should be pooled at the State level. At least Rs 100 crore should be available for this integrated scheme in the Fourth Plan.

Besides the Chandigarh conference of State Ministers, the National Development Council's Committee on Social Services has also considered housing policy in general, with special reference to the programme for the Fourth Plan.

A view expressed by both the conference and the committee was that the State Governments tended to place housing too low on their list of priorities and that this must change.

The specific suggestions made were that every State must have a Housing Board and that all house-building agencies in a State (now distributed among different departments) must be brought together under one Housing Minister.

It was also felt that there should be a Housing Board at the Centre; and the Housing Ministry is indeed hoping to announce soon the setting up of such a Central Housing Board.

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THAT THE STATES have tended not to think too highly of housing is seen by the fact that they often divert housing funds to other purposes. When the Emergency was declared, one activity to be hit almost immediately was housing. Cement shortage made its own contribution to this situation.

As a consequence, even the inadequate allocation of Rs 182 crore made for the eight social housing schemes under the Third Plan is not likely to be fully used.

Out of the Rs 182 crore, Rs 80 crore fall under the State Plans, Rs 22 crore under Central schemes for slum clearance and housing dock labour, and Rs 20 crore under plans for the Union Territories (totalling Rs 122 crore). The remaining Rs 60 crore were to come from the Life Insurance Corporation.

Because the States have not been contributing their share of 25 per cent to many of the schemes, only Rs 96 crore are likely to be spent from governmental funds instead of Rs 122 crore. The Life Insurance Corporation's Rs 60 crore will, however, be fully utilised, specially because the State Governments themselves are putting pressure on the L.I.C.

★

THE SETTING UP of Housing Boards in all States has been strongly urged because of the good work done by the Boards in whichever States they now exist.

The best example is provided by the Maharashtra Housing Board.

The old Bombay State established a housing board in 1949. Bombay even then had a tradition of social housing. As a result of the report of a commission in 1918, some ten crore rupees were spent to build 30,000 tenements for industrial workers; soon after Partition another 20,000 houses were built for displaced persons. **Between 1949 and September 1964, the Housing Board built 65,282 tenements in Maharashtra (with 13,666 more due for completion by March 1965).**

Of these tenements, more than 61,800 are in Greater Bombay. How much worse the congestion and suffering in Bombay would have been without this large addition to housing stock can be imagined.

The cost of the 65,282 houses is Rs 27.77 crore. Rents (which bring in Rs 1.50 crore annually) are reasonably low. In the suburb of Vikhroli an industrial worker occupying a Housing Board tenement pays Rs 44.92 for a tenement consisting of two rooms, a bath and a lavatory. This includes service charges. A family resettled under the Slum Clearance Scheme (there are 3,000 such tenements in Vikhroli) pays only Rs 20 a month plus Rs 4.50 as servicing charges. The Housing Board has also built flats for the middle income group which are given out on the instalment purchase system. A third of the cost is to be paid at the outset; the rest is realised over 15 years.

★

AMONG OTHER SUGGESTIONS on which there appears to be agreement is that the existing housing schemes for urban areas should be integrated into two broad categories: (1) a subsidised housing scheme and (2) a loans scheme. The need to give the highest priority for housing sweepers and scavengers in congested towns is recognised.

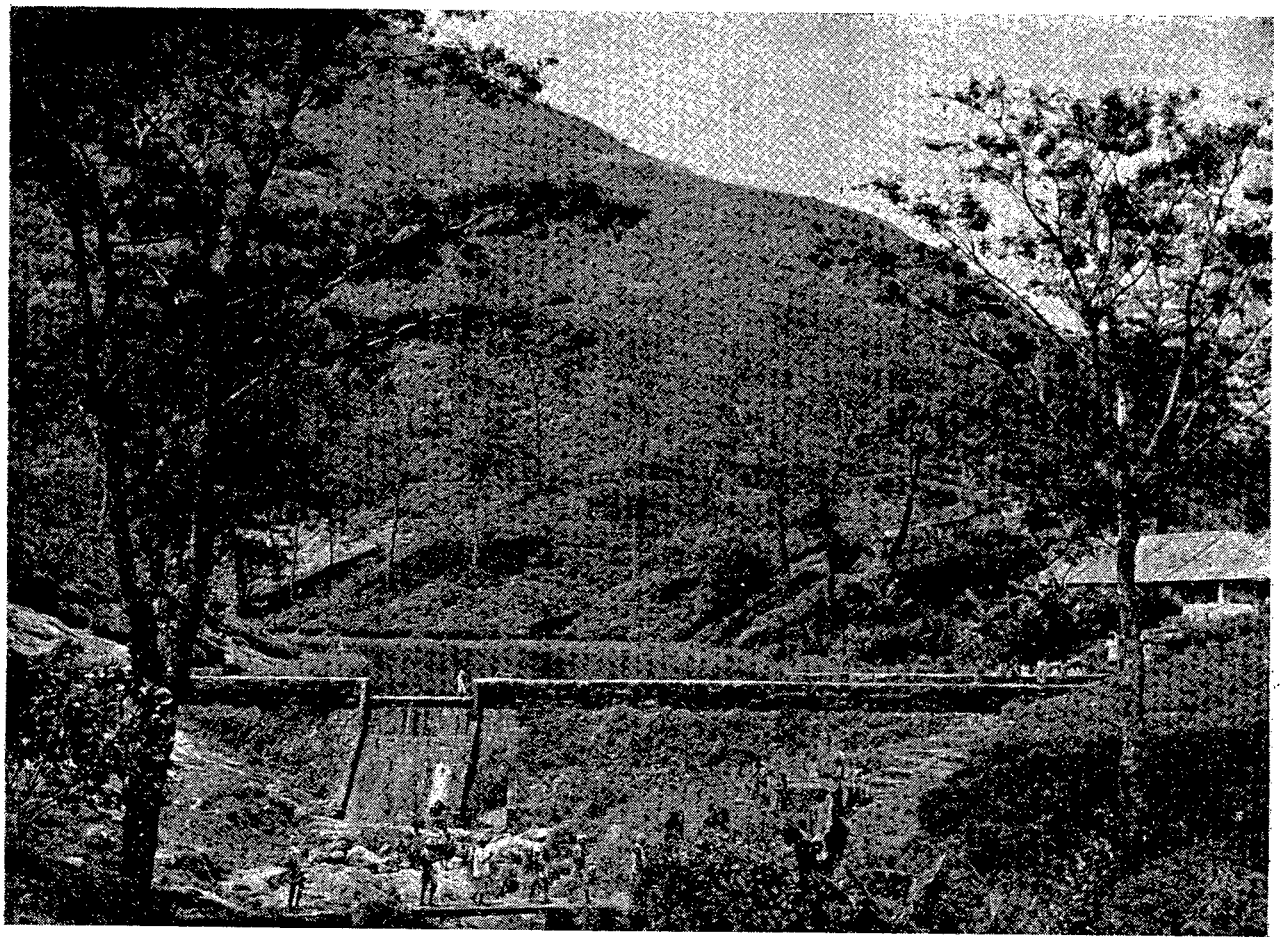
The Housing Ministers' conference has set up a committee of ministers under the chairmanship of Professor M.S. Thacker to recommend improvements in housing policy, especially legislative and other steps for speeding up land acquisition.

★

DURING HIS VISIT to the Soviet Union, the Prime Minister was impressed by the vast building programme there—tenements being built in numbers running

(Continued on Page 18)

Expanding Movement of Self-Help and Service



This is Stagbrook, a tea estate in Kerala, where a Lok Karya Kshetra has been doing fine work.

Lok Karya Kshetras Grow

WHEN people decide to help themselves unitedly, there is a great deal they can achieve. This faith is the basis of Panchayati Raj, and of the Lok Karya Kshetra scheme.

Lok Karya Kshetras are an effort to ensure public co-operation in the development effort and to bring the Plan and the people close together.

The scheme of the Lok Karya Kshetras was prepared by the Bharat Sevak Samaj in 1957 at the instance of the Planning Commission. A beginning was made in November 1958 with 25 Lok Karya Kshetras. At present there are about 350 rural Lok Karya Kshetras all over the country; of them 200 are in the Central sector, and the rest in the State sector.

The aim is achieved in the following way: by building up the initiative of the people and assisting the growth of local leadership; by mobilising manpower and resources for production, and by creating conditions in which people's institutions can function effectively.

The Lok Karya Kshetra is more a popular movement than a mere scheme of voluntary service by some socially-minded workers. It does make use of Government agencies like Community Development, but in 65 Kshetras the work is done without any outside help.

A dozen all-India voluntary organisations and several educational institutions participate in the Lok Karya Kshetra scheme, besides the Bharat Sevak Samaj. Recently 35 Kshetras were allotted to educational institutions.

It is not only economic activities that a Lok Karya Kshetra takes up. In 1962, after Chinese aggression, the Kshetras oriented their activities towards helping the defence effort. Twenty-five Kshetras were set up in the border areas of Assam, U.P., Himachal Pradesh and West Bengal. At several places, the Kshetras conducted surveys to assess the number and needs of the families of the military personnel and help was secured for them.

The scheme is aided by the Government and every rural Kshetra gets a grant of Rs 5000 annually.

A Kshetra covers about a hundred villages in a Community Development block that is in pre-intensive stage. A set of ten villages is selected at a time for the activities of the Kshetra. After working for about 18 to 24 months and making sure that the work and spirit initiated by the Kshetra workers will be continued, another set of ten villages is taken up.

There are three full-time workers in each Lok Karya Kshetra. They are a Mukhya Sahayogi (chief co-worker), and two Sahayogis (co-workers). They divide the villages among themselves. A Sahayogi begins with establishing close contacts with the village community and forming a village committee of Panches and Sarpanch, representatives of the co-operative societies, village school and prominent farmers and village leaders. A representative each from the village committees, panchayats, co-operatives and the schools comprise the managing committee of the Kshetra. An executive committee is also constituted to look after the day-to-day work. These committees are responsible for the working of the Kshetra programme.

A survey of the social and economic conditions of each village is conducted and, on the basis of the data collected, a development plan for each village is separately prepared. The plan is discussed and reviewed periodically by the committees.

Agriculture is the main item in the village plan. Farmers are persuaded to take to improved methods of farming. The use of compost-manure and chemical fertilisers is popularised. Irrigation channels and wells are dug. Kitchen gardening and subsidiary occupations to enlarge the income of the farmer are encouraged.

Co-operation is emphasised in all economic endeavours of a village.

Attention is given to the maximum utilisation of local resources in manpower and material. Shramdan is organised for building community assets such as roads, bunds, irrigation facilities, school and community buildings, drinking water wells and sanitary works.

The school is the light of village life. A Kshetra worker persuades the parents to send their children to school. Literacy classes are opened for the adults.

Children say their prayers at a school run by the Stagbrook Lok Karya Kshetra

Organisation of the youth, children and women is essential for the welfare of the village. Over six hundred youth clubs have been organised so far. Women's clubs take up gainful activities for the benefit of women and Balwadis look after young children. Rural libraries and reading rooms are opened.

In a Kshetra village, a number of compaigns are organised the year round to arouse the enthusiasm of the people, keep them better informed and engage them in constructive work. Fertiliser festivals have become popular in Kerala. Over a lakh of persons participated so far in sanitation drives.

Besides rural Lok Karya Kshetras, there are also urban Kshetras and Nashabandi Kshetras. Urban Kshetras are few in number and they are confined to slum areas.

The Nashabandi Kshetras are exclusively working an intensive programme of educating the people against the habit of drinking. There are 24 such Kshetras in the country.

In order to be able to do the organisational work, the Kshetra worker is trained in different aspects of social service. The Bharat Sevak Samaj runs two training centres for this purpose—one at Mehrauli near Delhi, which was opened in 1959, and the other at Trivandrum in Kerala, started in 1963. The two centres had trained over 1,000 workers by the end of 1963-64.

THE STORY OF STAGBROOK

THE story of Stagbrook Lok Karya Kshetra in Kottayam District in Kerala is the story of an experiment in public co-operation among plantation labour.

In March 1961 the Planning Commission sanctioned this Lok Karya Kshetra, on the request of the Bharat Sevak Samaj, to be worked as a pilot project among the estate labourers in the high ranges of Kerala. Three tea estates, employing 1,000 workers and accommodating a population of 2,500, were selected initially. Subsequently the activities were extended to some of the adjoining tea estates, adding 3,000 workers supporting a population of 7,500. Bazar areas of Pallikunnu (Church Hill) and Elappara lying close to these tea estates were also included.

The tea estate workers were continuously exploited by merchants and others. They never cared for their own health, clothing and food. The only entertainment for them was a cinema house five kilometres away, and occasional festivals and other celebrations in the nearby churches and temples. They spent more than they earned and always ran into debts. Addiction to alcohol was common. Children were most neglected.

Half a dozen trade unions kept the labourers in different political

(*Continued on Page 28*)

New Houses Go Up in 700,000 Soviet Villages

CONSTRUCTION AGENCIES REPATTERNED

NIKOLAI SAPFIROV

THE Soviet Union is an immense country. There are 700,000 villages with a population of over 100 million people on its territory. Ten per cent of its farmers live in half a million small villages with not more than 100 inhabitants in each, and 60 per cent live in 50,000 small townships with 500 and more inhabitants.

It is but natural that in the reconstruction of the countryside it is the larger villages that are given priority, being the more promising in this respect. Concentrated, combined production organisation and, consequently, concentrated settling of the rural population is a specific feature of socialist agriculture in general. This makes for a more efficient use of investments and materials for capital construction. Collective and state farms have already singled out some 50,000 townships in which capital construction work is being now concentrated first and foremost. Collective farmers from small and distant villages will move to these townships, as they are built. Shops, public catering establishments, bakeries, clubs, schools, kindergartens, creches and two-family houses with garden plots are being built in these new townships.

2,000 Building Organisations

The growing scope of rural building construction has called for a radical repatterning of the organisation of building jobs and provision with building equipment. Not so long ago, the farms used to build their production facilities and dwelling houses themselves, resorting to their own facilities and labour.

In 1955, collective farms started setting up their co-operative construction organisations, building for them plants for the production of structural materials of local raw materials and buying equipment and transport facilities. There are over 2,000 of these organisations in the country today.

They have at their disposal thousands of excavators, bulldozers, building cranes, concrete mixers, and trucks. The state has been in every way promoting the development of this progressive form of building organisation and rendering extensive financial and technical assistance to rural builders. This year alone, they are to be granted 1,500 million roubles of long-term credits for building prefabricated concrete, brick, lime roofing and woodwork enterprises and buying new equipment.

Building sites are a component part of the rural landscape in the U.S.S.R. We shall hardly find a collective or state farm which is not building new homes, schools, clubs, hospitals and production premises. Here are a few figures to illustrate the scope of building construction in the countryside in the six years of the current seven-year economic development of the U.S.S.R; *in the course of these years 26,000 million roubles were invested by the state and 20,500 million roubles by collective farms in the construction of production buildings, water and irrigation developments and dwelling houses in rural areas.*

These sums were used to build almost a thousand major elevators and mechanised grain storage facilities, cattle and poultry farms, dwelling houses with a total area of 130 million square metres, including 70 million square metres financed by the state budget. *Besides over three million houses were built by collective farmers and rural intellectuals.*

Capital investment projects have acquired a still larger scope this year, which is the final year of the Seven Year Plan. A total of 7,200 million roubles are to be spent by the state and collective farms on building and erection work alone. This accounts for about 30 per cent of the entire volume of building construction in the whole national economy.

This year is to see the commissioning of sheds for 8 million head of horned cattle, pigs and sheep, 247 enterprises for the commercial production of eggs and poultry meat, elevators with a total capacity of over 1,400 tons of grain, and irrigation networks for 350,000 hectares of crop land. Hundreds of thousands of farmer families are to get new comfortable homes.

Drawing on the state's assistance the Soviet countryside is changing beyond recognition, providing its population with conveniences and services, extending and strengthening its material and technical basis—the main prerequisite of the steady rise of agricultural production. Many satisfying changes have taken place at collective and state farms in recent years. Well-planned all-brick production and housing compounds have appeared. The "Leninsky Luch" Collective Farm (Moscow Region), for instance, now has an excellent central township which is in no way inferior to an urban community: it has large block dwelling houses and attractive cottages; in the centre there is a five-storey school, library, out-patient clinic and kindergarten. The township will be fully provided with gas and central heating this year.

There are many collective farms like this one, and there will be many more soon. The task of transforming all villages into urban-type townships, of course, is not an easy job, requiring great capital investments, and it will take some time.

Mechanised mobile construction gangs which execute general and

(Continued on Page 12)

Why BEAS DAM project chose CATERPILLAR for earthmoving

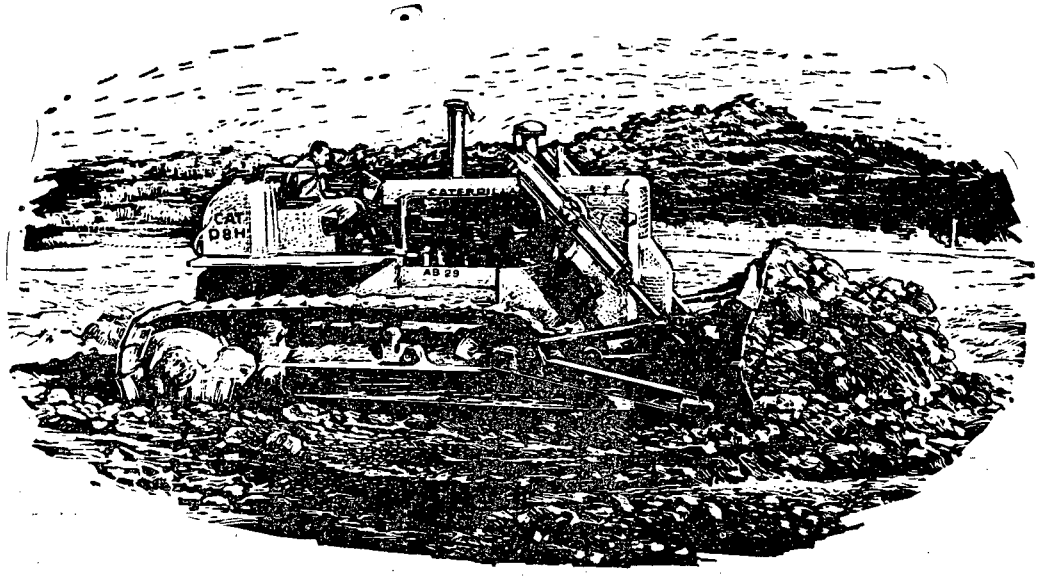
In 1970 nearly 25 lakh acres of desert in Rajasthan will be converted into fertile agrarian land—on completion of the Beas Project in Hoshiarpur, Punjab. On the job are a number of CATERPILLAR Track-type Tractors helping develop the dam site faster.

At the Beas project, machine availability is found to be as high as 92%, power shift transmission has been helpful in keeping schedules. Many built-in features in Caterpillar Track-type Tractors are continuously demonstrating substantial job economy by saving time. The high standard of dealer after-sales-service reduces downtime to the minimum, enabling higher economic production.

HOW DO YOU SELECT EARTHMOVING EQUIPMENT?

Tradition often demands that Purchase Authorities "buy the lowest priced machine that meets bid specifications". Sometimes this is false economy. The purpose of low price buying is to obtain low cost performance. But this relationship is not necessarily true. Two track-type tractors may look alike at time of purchase...may appear to differ only in initial cost. But what about these same machines two or three years later ? Are operating costs comparable ? Has each tractor worked the same number of hours and performed the same amount of work ? Considerations like these will soon show that purchase price is only part of total machine cost. Caterpillar Quality is a measurable asset, one that means more work at less cost. It can be measured in low downtime, low repair cost and maximum productivity over long periods.

Consult your nearest CATERPILLAR dealer — if Long Term Low Cost is your prime consideration.



CATERPILLAR IS ON THE JOB WHEREVER THERE'S MATERIAL ON THE MOVE

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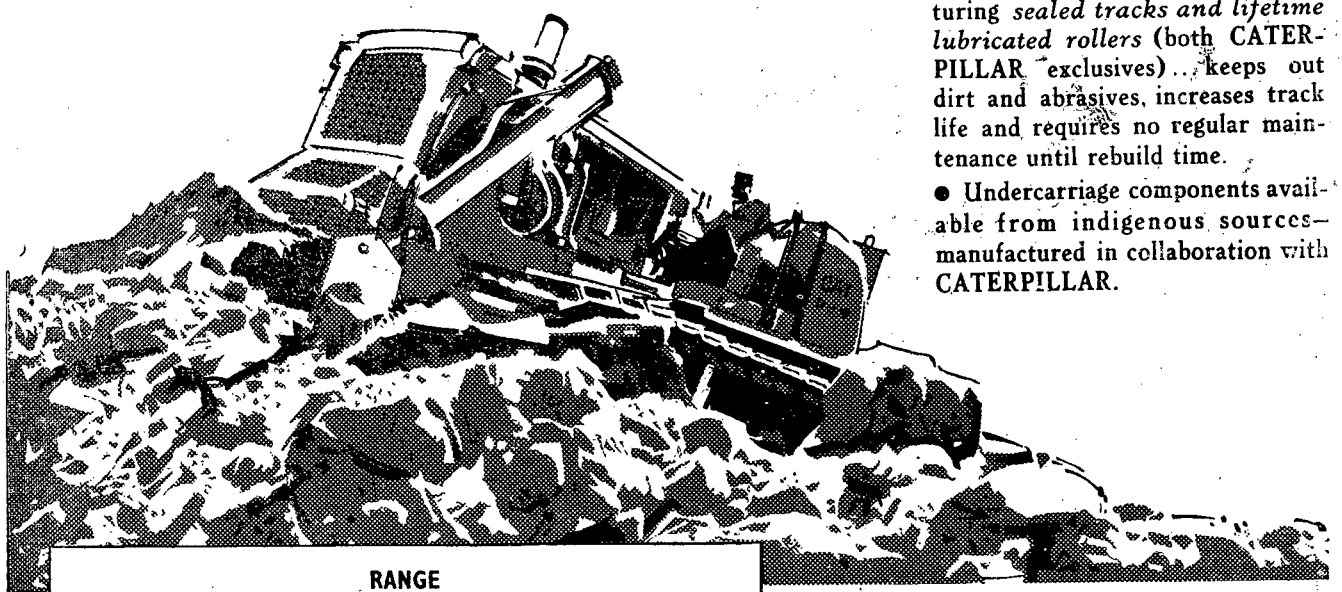
TU/G/264

PRODUCTION-BOOSTING TRACTOR FEATURES MEAN JOB ECONOMY

The range of CATERPILLAR Crawler tractors combines simplicity in design—for easy maintenance—with built-in rugged dependability for tough job conditions... means more work in less time, at less cost.

- A choice of transmissions—Power Shift with exclusive Torque Divider or Direct Drive with CAT Oil Type Flywheel Clutch.
- Heavy-Duty Undercarriage featuring *sealed tracks and lifetime lubricated rollers* (both CATERPILLAR exclusives)... keeps out dirt and abrasives, increases track life and requires no regular maintenance until rebuild time.
- Undercarriage components available from indigenous sources—manufactured in collaboration with CATERPILLAR.



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D9G	385 Flywheel H. P.	—Power Shift
D8H	235 Flywheel H. P.	—Power Shift & Direct Drive
D7E	160 Flywheel H. P.	—Power Shift & Direct Drive
D6C	120 Flywheel H. P.	—Power Shift & Direct Drive
D6B	93 Flywheel H. P.	—Direct Drive
D4D	65 Flywheel H. P.	—Direct Drive

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- *Cable and Hydraulic Bulldozers*
- *Rippers*
- *Towed-Type Scrapers*
- *Land Clearing Tool Bar Attachments*

Let your local CATERPILLAR dealer help you select the machine for your particular job requirement. If you have an earthmoving problem, remember he is only a phone call away.

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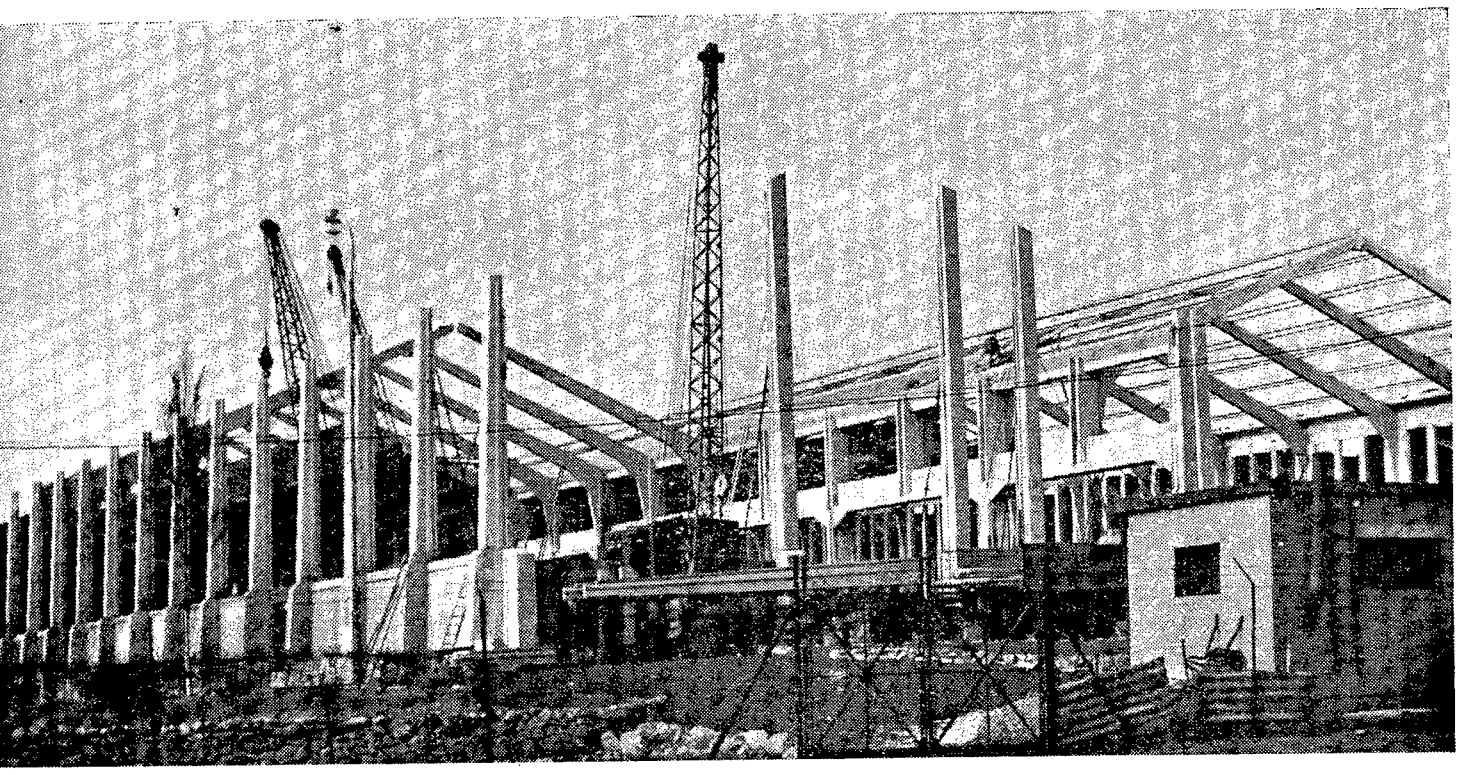


A pre-cast workshop under construction in Warwickshire, England

Factory-Made Homes Cut Costs in UK

By STANLEY ALDERSON

Perhaps the most compelling reason for the growing popularity of prefabricated systems is the tremendous expansion of industrial and mining development in so many lands far removed from the existing centres of population. Such enterprises as the Snowy River hydro-electric scheme in Australia and the great uranium mining centres of Canada's northern territories are examples of great developments far off the beaten track where, in the absence of normal building facilities, prefabricated structures from Britain have provided not only homes for the workers, but also the schools, hospitals and offices required to service these enterprises.

BRITAIN long ago produced the system of school building, using pre-fabricated walls, columns, beams and partitions. But the example was not immediately followed in housing.

House building was largely in the hands of small and medium-sized firms, which were neither technically nor financially equipped for experiment. Also, it was widely believed that prefabrication and standardisation were not applicable to British housing.

These methods had proved successful in other European countries. But in those countries more people lived in flats, and flats lent themselves to industrialised building. In Britain, over half the local-authority building consists of houses, not flats; and of all the homes in the country about three quarters are houses.

Over and above this, there was a prejudice against industrialised house building in Britain, even among architects. People thought of the typical concrete flats of France and Russia and equated prefabrication and standardisation with monotony.

The origin of the present revolution in house building was the appointment of Mr. Cleeve Barr as the Ministry of Housing's chief architect in 1960. Mr. Cleeve Barr set the Ministry's research and development group to developing a lightweight system of prefabricated parts for house building, quite distinct from the heavy continental system.

The system now perfected is similar in principle to the "Clasp" system for school building. It is extremely flexible, comprising many kinds of factory-made components that can be assembled in many different ways.

The structure of the building is "hung" on a steel-and-timber frame. The outer walls can be panels of timber, lightweight concrete or, indeed, more or less any material. So far from being open to the charge of promoting monotony, the system affords much more variety than traditional British house building.

The break-through came in 1962. By this time Mr. Cleeve Barr's team had gone far enough with their research to know it would be successful. The first housing embodying the new system was completed at Sheffield in the following year.

By 1962, also, it was evident that industrialised house building was going to be an economic necessity. The index of building costs of three-bedroomed council houses had gone up by 50 per cent in ten years, and

15 per cent of the increase had occurred in the previous year.

Labour costs, in particular, had become a problem. With full employment and increasing affluence, ever higher wages were necessary to attract workers into an industry where the work was hard and it was often necessary to travel and be away from home during the week.

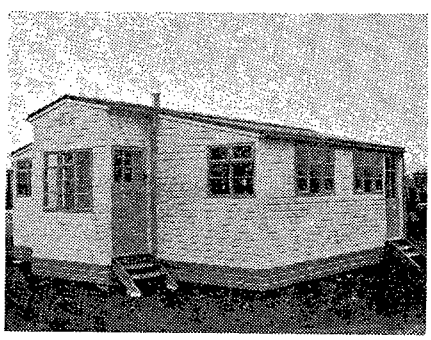
Moreover, the high wages paid to labourers reduced the differential with a craftsman's wages. Young men entering the industry began to feel it was not worth doing an apprenticeship. A serious shortage of craftsmen could be foreseen. Mechanisation was the logical answer to the problem and mechanisation of house building means mainly prefabrication.

Slum Clearance

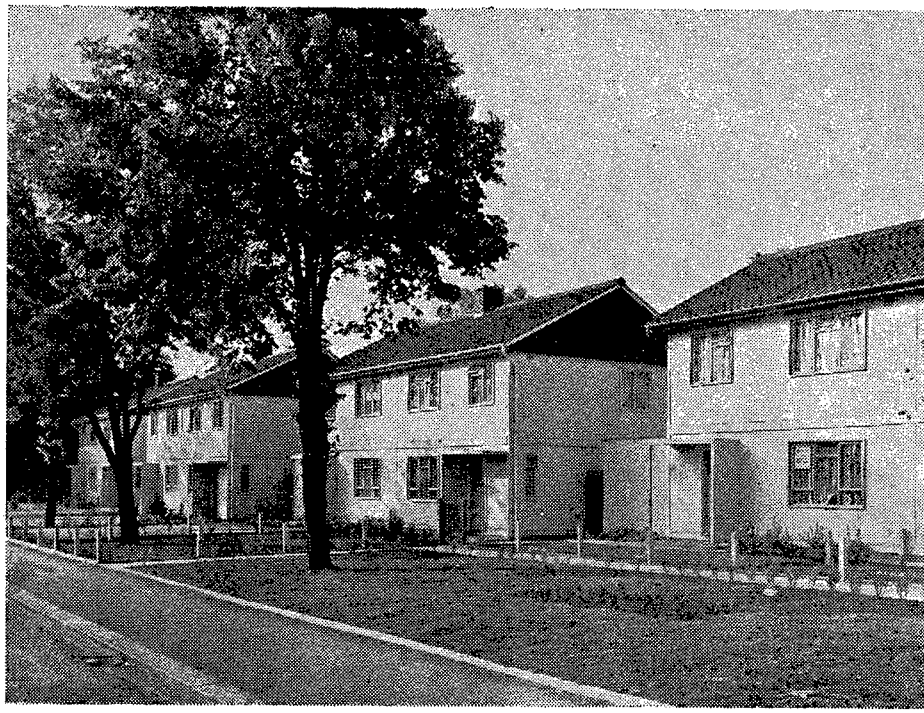
In October, 1962, the Minister of Housing and Local Government, Sir Keith Joseph, announced an accelerated slum clearance drive based on the new techniques. About the same time, it became known that the London County Council was heavily committed to a programme of prefabrication for house building.

Shortly afterwards, Sir Donald Gibson was appointed to a new post as director general of research and development at the Ministry of Public Building and Works. Sir Donald had been responsible for rebuilding the bomb-damaged city of Coventry. He had been associated with "Clasp".

Quite suddenly, a revolution in house building looked inevitable. The manufacture of standardised components is economic only on a large scale, and before this time firms had hesitated to invest in it because they could not feel assured of a large market.



A mobile house which can be folded and moved on a single vehicle and erected within six hours.



Prefabricated homes in Hertfordshire

The confidence that now the market would be there constituted the break-through. Ever since then, British newspapers have been carrying reports of plastic and aluminium houses that can be erected in a day and towed by a car, and of blocks of flats made from prefabricated components and *erected in nine days instead of 15 months.*

An Industrialised Building Systems and Components Exhibition, held last year in London's Crystal Palace, displayed both "instant houses" and systems of standardised components employing new materials. Even two years ago, such an Exhibition would have been unthinkable.

Needless to say, the Exhibition itself was erected in record time.

New Methods in Sweden

Standardised Dimensions Help Speedy Building

GORAN HELLSTEN

SWEDEN has 7.5 million people, three quarters of whom live in towns. The country had a housing stock of 350 units per 1000 population in 1962.

In recent years, investments in building and civil engineering have amounted to some 15 per cent of the gross national product (GNP). The corresponding figures for France were rather over 10 per cent, Britain around 8 per cent, West Germany and Italy 12 per cent, and Switzerland 17 per cent. Over and above the 15 per cent in investments, 4 per cent of the GNP have gone to maintenance.

Of the 1964 investments, more than one-third was spent on housing —over 5 per cent of the GNP; 1.5 per cent of the GNP was invested in new industrial buildings and as much in commercial buildings and in roads.

As these figures show, the largest group of investments is in housing: the production of housing units has risen sharply in recent years. The

1962 figure was 10.7 units per 1000 population against 7 in France, 5.9 in Britain, 9.9 in W. Germany and 8.1 in Italy. Of the 81,400 units built in 1963 the private sector accounted for the largest share, 32,700, while municipal enterprises built 28,500 and co-operatives 20,200.

Less Work on Site

LIKE other countries Sweden employs the method of prefabrication of elements which can be more or less simply assembled on site. The greater the degree of prefabrication, the less the work on site. The object of these industrialised building methods is to replace manual labour on the building site by machines to the greatest possible extent.

Many interior fixtures have been prefabricated for a long time past—wardrobes, kitchen benches and cupboards, window frames and doors. This process has now been extended to painting and the attachment of fittings in the factory.

Attempts to prefabricate the frame of the building came much later. The first real trials were started by a number of building enterprises in the early fifties. The elements used by these firms were designed by them and often manufactured in their own factories. This is the "closed system", the builder undertaking the planning, manufacture of elements, and the actual building of the house.

There is also an "open system", however, in which building elements are available on the open market, dimensioned for a particular building project.

More Research

IN Sweden we are now well on the way to achieving a dimensional standard for frame elements. About a year ago the storey height of blocks of flats was standardised. This led to standardisation of the dimensions of elements for outside walls, facings, stairs, ventilation ducts, refuse chutes, outside wall insulations, piping, electric mains, and lift shafts. The latest step came recently with the acceptance of a standard for horizontal frame dimensions, the horizontal module 3 decimetres (just under one foot). This new standard is expected to have a great impetus on the manufacture of elements and especially of concrete elements. It will form the basis for planning and dimensioning of frames and will directly affect the design of their component parts, outside walls, load-carrying partitions and floors. Elements made to this standard will thus have horizontal dimensions which are multiples of 3 decimetres. The same horizontal standards have been adopted in several other countries, so that an international exchange of building components and of machines and formwork can now take place.

Even if developments in the element sector have been slow, building methods in other respects have undergone great changes, most particularly perhaps in their increased mechanisation. A house of reasonable size can as a rule be built today with the aid of a crane, and on road-building the machinery costs, excluding drivers' wages, represent 40-45 per cent of the total.

A government commission was recently appointed to examine questions of industrialisation in the building field, and this is expected to have a great influence on future developments. The commission is to study what government measures are required to promote industrialisation and will deal with such questions as co-ordination and standardisation of dimensions, financing of new element manufacturing enterprises, how building regulations should be amended to meet new methods, and what means should be created for long term planning.

This enquiry is of a temporary character: the more permanent work is in the hands of various research organisations. For government building research a fund was created ten years ago which is financed by charges payable by builders, generally in proportion to the sum they pay their workers. This charge has so far brought in about 4.5 mkr per annum but has now been doubled.

Funds are also available for research at technological institutes, trade associations, for individual researchers or research groups, and at the National Institute for Building Research.

From "Featuring Sweden"

Mass Housing in Soviet Union

(Continued from Page 7)

specialised building jobs at collective and state farms on a contract basis have been set up by the state. There were over 350 of them last year, and another 440 are to be organised this year. Measures are being taken to put all rural construction work on a modern industrial basis and have the jobs done by large-scale state-operated contractors. There are already 140 trusts and 76 self-sufficient building and erection organisations today.

The rural construction planning and designing system has undergone radical changes as well. Large centralised designing and research institutes specialising along the basic lines of rural construction are ousting the small-size local institutions of this sort. All the local bodies engaged in the planning and building of rural communities have been subordinated to the State Building Construction Committees of Union Republics.

At present the rural planning and designing system comprises over 160 specialised institutions with a staff of approximately 30,000 people. Moreover, there are volunteer district architectural institutes in some regions and republics, which help the collective and state farms to plan the reconstruction of their communities free of charge.

Rural architects, under contracts with collective farms, have already worked out over 11,000 intrafarm and district plans, approximately a thousand standard designs for a wide range of farms, storages, production and dwelling buildings.

All conditions have been created in the Soviet Union for the successful fulfilment of the planned capital investment projects in rural areas. And these plans are truly enormous: 71,000 million roubles are to be invested by the state and the collective farms into the construction of farm production facilities and acquisition of new equipment under the new five-year plan. That is about as much as had been invested into the USSR's agriculture in the course of nineteen post-war years.

(Mr. Sapfirov is a commentator of the Novosti Press Agency)

29 New Villages Established

Forest being cleared to establish a village in Dandakaranya

in Dandakaranya

PROGRESS REPORT

TWENTY-NINE new villages have come up in Dandakaranya with the reclaiming of an additional 11,600 acres of land. Seventeen hundred families have moved to the village sites. Among them are 1300 families of new migrants.

The total number of villages set up in Dandakaranya so far is 174 and the total number of families resettled is 9,200.

Agricultural activities in the various settlement zones have been intensified. Cropping patterns have been evolved for the different zones. The experiments and trials of new crops and new strains continue in the mixed farms at Umerkote and Paralkote.

About 30 demonstration centres and 150 demonstration plots have been organised to educate the farmers in scientific methods of cultivation and in the cultivation of new crops.

New settler in a Dandakaranya village making a thread bag as child rests on her knees

In order to improve the land used for growing paddy, a programme of bunding and terracing has been taken up and more than 3,000 acres have already been bunded.

The amount of loan to be given to agriculturists for purchase of seeds and fertilisers has been increased from Rs. 850 to Rs. 1,015.

Other measures are also being adopted to diversify the crops with reference to the suitability of the soil and to extend cultivation of cash crops, such as mesta, niger, turmeric and chillies and to introduce new crops, such as, tapioca, cashewnut, pineapple and guava.

Twelve villages tanks have been provided with additional surplus channels for irrigation. Nearly 1,000 wells have been dug in the homestead plots in the various zones with the aid of a loan of Rs. 150 per family given from the project funds.

A pump that gives the settlers the water they need

Work on three roads, taken up earlier, is continuing. The survey and alignment of three new roads are in progress. Irrigation canals are being built in the command area of Umerkote Dam and Pakhanjore Dam. Three new schools have been completed and 44 are under construction.

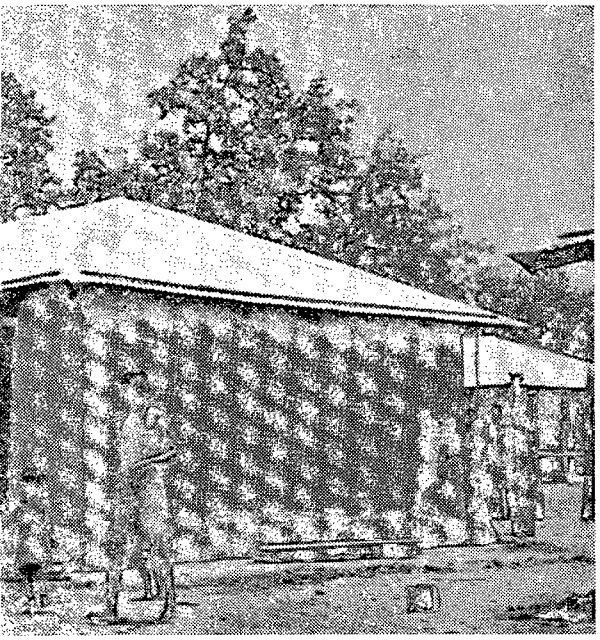
One hundred families have been settled around the Pakhanjore Dam, and they will rear ducks and fish and also vegetables. A scheme has been drawn up for a dairy and poultry centre on the banks of the Kotri river in Paralkote zone.

An Industrial Training Institute has been started at Ambaguda and an Industrial Estate is being set up. A site has been selected for an industrial township at Jagdalpur. Products worth more than Rs. 1½ lakh per month are being manufactured in the existing training and production centres of Dandakaranya Project. Nine hundred persons are employed in these centres including more than 750 displaced persons. A scheme for setting up handloom factories at Ambaguda and Jagdalpur, with 200 handlooms at each place, has been approved and arrangements are being made for training new migrants to be employed in the handloom factories. A spinning mill is also to be set up at Jagdalpur.

Brick kilns have been set up at Ambaguda, Jagdalpur and Paralkote. Steps are being taken to set up various small-scale industrial units, such as a wood-working unit, lime burning kilns, mineral pulverising and bone-meal mill, units to make earthenware, roofing tiles, stoneware

Some modern houses that have been built in the midst of the country's largest forest

New home of mud and bamboo for a Bengali migrant

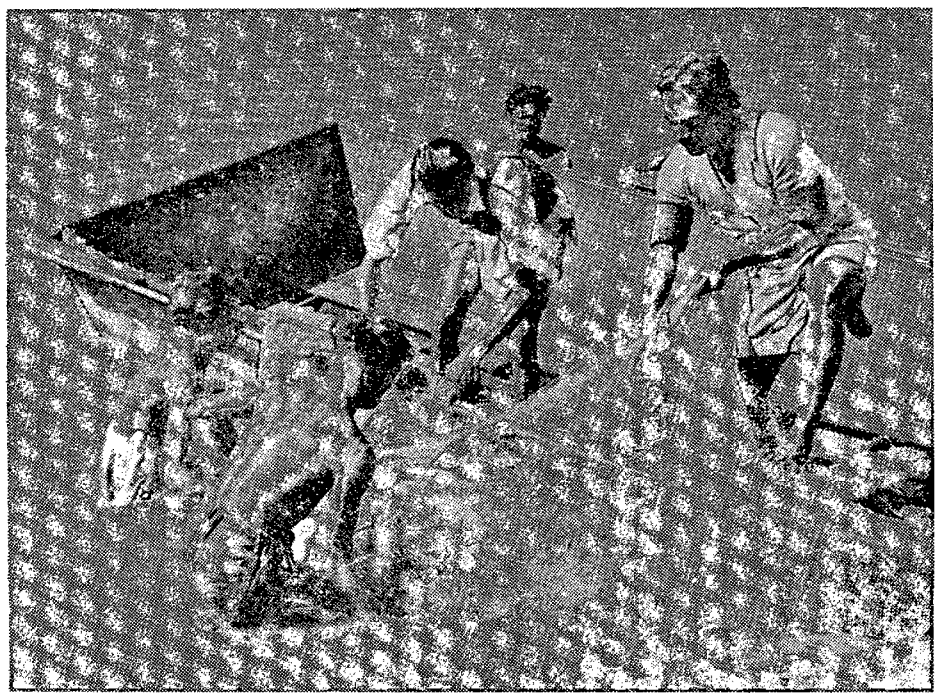


Left : **Displaced persons from East Pakistan have new homes, neatly plastered and with a roof of corrugated sheet**

Below : **A mobile clinic takes doctors and medicines to the farflung villages of Dandakaranya**

products and a general engineering workshop.

Other units planned are a cast iron foundry, workshops to make tubular furniture, pipe fittings and builders' hardware, a plant for aluminium anodising and fabrication, a bicycle assembly unit, a tyre retreading and vulcanising unit, a printing press and so on.



A settlement of fishermen, migrated from East Bengal, drawing in the day's catch from a lake in the forest.

PUBLICATIONS RECEIVED

Ancient Shrines of Goa—A pictorial survey. Information Department, Government of Goa. 72 plates+25 pages. Rs 6.

Family Planning through Clinics by C. Chandrasekaran and Katherine Kuder. Allied Publishers. 272 pages. Rs 26.

Poultry Keeping In India by P.M.N. Naidu. Indian Council of Agricultural Research. 252 pages. Rs 10.75.

Basic Statistics, Rajasthan, 1964. Directorate of Economics & Statistics, Rajasthan, Jaipur. 196 pages. Rs 1.50.

Advertising and Small Newspapers by Subrata Banerjee. 31 pages. Asian News In The Indian Press by Chanakya Sen. 80 pages. Both published by Press Institute of India, Delhi-6.

Programme of Food Consumption Surveys. 71 pages. Bibliography on the Analysis and Projection of Demand and Production 1963. 279 pages. Emerging Diseases of Animals. 241 pages. Fertiliser : An Annual Review of World Production, Consumption and Trade, 1963. 193 pages. All published by U.N. Food and Agricultural Organisation, New Delhi.

Producers' Response to Changes in Prices and Marketing Policies by S. C. Gupta and A. Majid. 70 pages. Rs 12. Lectures on Advanced Economic Theory by K. T. Ramakrishna. Both published by Asia Publishing House. 315 pages. Rs. 20.

Clean People and an Unclean Country by N.R. Malkani. Harijan Sewak. 144 pages.

Laughter by the Way by Sri Thandaveswara. P. T. I. Book Depot, Bangalore. 73 pages. Rs. 2.50.

Agricultural Commodity Trade and Development by Gerda Blau and D.A. Music. 117 pages. Trade Year Book Annuaire Du Commerce—Anuario De Comerio. Vol. 18, 1964. 420 pages. Both published by the Food and Agriculture Organisation of the United Nations, New Delhi.

American Industry in the Service of Man 44 pages. Published by the United States Information Service, New Delhi.

Export Prospects of Pepper. 105 pages. Rs. 10.50. Published by the National Council of Applied Economic Research, New Delhi.

Civil Servants' Pay

A FEW years ago a political crisis was touched off in Ghana by a minister's wife who acquired—and refused to part with—a gold bed.

When an Indian correspondent recently referred to this in a conversation with a French official, the Frenchman said : "You Indians have no right to feel superior—I have seen so many gold beds in Delhi."

He explained that what he meant was the luxury in which officials and politicians in India lived, compared to officials and politicians of the same level of responsibility in Europe.

Spurred by the remark, the Indian correspondent did some fact-finding. His research had its focus on foreign service officials—since it is our foreign service men who most complain of small pay.

After his inquiries, our correspondent has given us the case of a typical middle-level foreign service official of an important European country—one who would be Counsellor if posted abroad. He draws the equivalent of Rs. 2,100, which, with payment into the pension fund, comes to Rs. 1,900. He has been in service for 16 or 17 years, is 43 years old, and has three children. He does *not* get a Government house, and spends Rs. 600 on a two-bedroom flat. Taxes and insurance take away another Rs. 300. That leaves Rs. 1000. Groceries and milk come to about Rs. 600 a month. He and his family dine out in a restaurant only half a dozen times a year—on the birthdays of his children, wife and himself, and on the wedding anniversary. The official keeps a 1958 Austin bought during his last diplomatic posting. When the last child arrived, he took five weeks' leave to turn housewife. The man himself, according to our correspondent, is of considerable intellect—and is typical of university men who come out tops in the competitive examination and join the civil service in Europe.

From his close knowledge of Delhi our correspondent says that civil servants of similar position in India have a standard of living at least twice this European's. And he goes on to point out that this kind of pay is not confined to Government service. The personnel manager of the huge Bell Telephones in Belgium draws only Rs. 3,200. An Englishman with an Oxford degree who heads a branch office of a big firm on the continent, age 36, married, draws a salary of Rs. 3,000. It is important that these figures are the equivalent of the rupee at the official exchange rate. In terms of what money can buy, their pay in local currency would work out to much less than Rs. 3,200 and Rs. 3,000. In most business houses and offices, a typist gets Rs. 700 and the range between the lowest and highest is rarely more than four or five times.

WHEN we think of this objectively, the trouble with us appears to be not that our salaried people get too little but that they *feel* they ought to get much more.

For example there is this clamour, often heard, that the Indian Administrative Service doesn't attract the best talent because the pay isn't good enough. This argument is heard in other countries also, not the least in U.S.A. There they seem to have evolved a different definition of 'the best'. It is not necessarily 'those who get the highest grades in examinations'. They do systematic talent scouting and extensive training in service. But here we suffer from the fallacy that brightness at 21 automatically leads to brilliance or distinction at 50.

Will upgrading I.A.S. salary levels of itself attract the best young men? The best Indian students will still continue to go into engineering, medicine and science where there are *assured* prospects, as contrasted with the *element of chance* in competitive examinations. Talking in terms of groups and not individuals, it is the second best that thinks of the civil service. By raising pay this fact is not going to change.

IGNORAMAN
Wants to Know

If it is not better to fail to get admission to colleges than to fail after getting admission?

Others' Quotes

READERS of *Yojana* tell us that one of the first things they turn to when they receive a new issue of the journal is the "Quotation Box" feature. To collect "quotes" is a well recognised journalistic hobby, the most famous in this line being "Sayings of The Week" in *The Observer*, London.

Having to keep track of these things, we picked up a fine one recently from *Productivity*, the journal of the National Productivity Council:

> "...Jeeps are difficult to get and repairs to the old ones are costly and take a long time. Supply of bullock-carts to every Panchayat Union might solve these difficulties...A double-bullock-cart might be supplied for the use of the Chairmen of the Panchayat Unions and a single-bullock-cart for the Comissioners"—*Mr. M. Bhakthavatsalam, Madras Chief Minister.*

Right, as Usual

THE plural of paisa is paise in India but paisa in Pakistan. Another indication that we in India are always more correct.

HOUSING

From Page 4

into astronomical figures, and multi-storeyed residential flats coming up in place of small old buildings. He expressed his regret that in our country, people had to live in places where even animals could not stay.

In the advanced countries of the world the trend is towards industrialised housebuilding. (This phrase is not to be confused with industrial housing). Industrialised housing means that whole houses or components of houses are factory-made and assembled on site by machines or by industrial methods.

We are, to some extent, acquainted with industrialised housing in the form of prefabricated buildings, notable examples of which are the Vikas Bhavan in Delhi, accommodating some offices of the Delhi administration. The Hindustan Housing Factory in Delhi (see *Yojana*, November 11, 1962) was set up soon after Independence, in order to speed up house-building activity on a prefabrication basis.

A committee of engineers, which also had Professor Thacker for chairman, has recently recommended the expansion of the Factory. The committee is soon to report on a second question referred to it: whether to set up a second housing factory at Bhilai.

The approach to housing with us has largely been that construction must make the fullest possible use of locally available building materials and provide as much employment as possible to the local people.

By changing over to machine methods, we might limit the employment possibilities and also need more of cement and steel. Mechanisation would also need investment in machinery. But we gain in speed.

> It is evidently with these factors in mind that the Thacker Committee felt that while India could not yet go in for wholesale prefabrication in housing, an energetic beginning should be made.

Cement and steel are costly; but bricks are not dirt-cheap. Brick-making involves the digging up of large areas of valuable land in and around the cities. It also requires large quantities of coal for the kilns.

According to the Master Plan of Delhi, to execute the housing programme it envisages, 3,500 crore bricks would be needed in the 20-year period between 1961-1981. To make this number of bricks, 1,500 acres of land and 1,750 lakh tons of coal would be needed.

To haul this coal 895 wagons would be needed per day on the average. Costs of bricks and labour would steadily go up—and conventional house-building might lose the price advantage. The position of cement and steel might itself improve in the meantime.

Therefore what we need is an imaginative combination of factory-made houses and hand-built brick houses: prefab where speed and relief from acute scarcity are required, and conventional where manpower and materials are plentiful. Meanwhile the design of prefabricated houses must be improved so that the houses are more liable and less monotonous. An architectural wing in Hindustan Housing Factory will study these problems and so will the Central Building Research Institute and the National Building Organisation.

Books

Resource Development Regions Outlined

Resource Development Regions and Divisions of India. Planning Commission. 173 pages.

R. K. Amin

THE book outlines a scheme for resource development in India by dividing the country into 15 regions and a total of 61 divisions. This has been done as a result of an analysis of data on topography, soils, climate, geological formations, land utilisation, irrigation and the cropping pattern and availability of mineral resources for each district of the country.

Such a scheme should be considered a "must" for India when we have accepted planning as an instrument of economic growth. An assessment of resources, both actual and potential, is necessary for a variety of reasons. First of all, the Planning Commission has emphasised the need for balanced regional growth. This can best be done by evolving a pattern of development which takes into proper account the differences in physical conditions and resources development potential in different parts of the country. Secondly, so far we have drawn up our five-year plans on the basis of estimated needs without taking into account the availability of resources. This approach has led us into troubles. To make our plans more realistic a proper assessment of resources, both actual and potential, is necessary. Thirdly an awareness of actual as well as potential resources provides the necessary motor force to the entrepreneurial talents of our country.

Finally, such an estimate will help us to decide on location of industries largely on the basis of economic considerations. The experience of planning in this country suggests that often political pressures compel us to locate projects at places where they cannot work successfully. From this point of view the attempt of the Planning Commission to prepare this book is indeed praiseworthy.

The book has been divided into two parts. The first part gives a brief description of the regions of the country and the second part, which consists of appendices, gives us statistical information about each region. In the first part the country has been divided into five primary or major natural regions, namely (*i*) the Himalayas and associated hills, (*ii*) the northern plains consisting of the areas of Indo-Gangetic plain included within India, (*iii*) the peninsular plateaux and hills, (*iv*) the East Coast plain, and (*v*) the West Coast plain. The main criterion for demarcating these primary natural regions has been physical factors such as topography, soils, geological formations and climate.

These primary regions have been divided into 14 resource development regions demarcated mainly on the basis of agricultural land use and cropping pattern. Thus, 14 resource development regions have been distinguished on the mainland of India, two in the Himalayan area, five in the northern plains primarily on the basis of rainfall, four in the peninsular plateaux and hills, one in the East Coast plain and two in the West Coast plain. The fifteenth region consists of the islands in the Bay of Bengal and the Arabian Sea.

In a subsequent chapter, each region has been described, and its details (such as area, population, rainfall, soils, mineral resources etc.) have been given. By thus describing a region the study hopes to serve two principal objects: (*a*) to provide a framework to those concerned with planning at the Centre and in the States and (*b*) to furnish a scheme of division of States into internally homogeneous units so as to evolve a unit of planning at the State level. For administrative convenience the district has been considered to be the primary unit for the formation of homegeneous region. There are in all 61 homogeneous regions in the country.

The relevant statistical information has also been given in two groups in the appendices. The first group of data provides us the general economic information such as area, population density, degree of literacy, wage rates, and per capita income, while the second group of data gives us information on the physical conditions and agricultural resources such as rainfall, soil, rock formations, cropping pattern, yield per acre of important crops and so on.

While there is no doubt that the book will prove an important source of information for regional and country planning, it is lacking in two important respects. First, one of the fundamental criteria for regional planning is that it should be evolved for human habitation. It should keep man in the centre of the process of planning. For this purpose, one must have data regarding human attitudes, habits, traditions, needs, values in life, etc. The details about manpower resources ought also to be furnished. It is only when psychological, sociological and economic data on manpower resources are properly listed and assessed that one can evolve a regional plan. The existence of a natural resource does not automatically entitle it to economic utilisation. To examine whether there is a case for utilisation of such a natural resource, one has to obtain further details such as proximity of markets, quality of labour, quality of the physical resource, alternative resources available etc. Such details would have made the document more useful. Then, probably, the entrepreneurs would on their own arrive at decisions regarding the types of

industries they should take up at different places.

Now to the second important respect in which this study is found deficient. Possibly the book creates an impression that the 15 regions should be self-sufficient regions since their pattern of physical resources is distinct. This should not be the case. This should only be helpful in deciding the 'priorities' in development to achieve the structural changes in the Indian economy. After all, India is one welded whole politically as well as economically and the use of physical resources of any one region should be made with a view to serving the interests of India and not any one part of India. In planning at the State level, this fact should be borne in mind.

With the presentation of data regarding physical resources one should not forget that scarcity of physical resources has never been an ultimate bottleneck in economic development and, therefore, it should be emphasised only up to a point.

In the end, it should be said that there was great need for such a document when we have already arrived at the threshold of rapid industrialisation in India. It is a timely publication. It provides a perspective to planners at the State as well as Union level; and it provides basic data to actual and potential entrepreneurs to select their fields of ventures and also the place to display their adventure.

New Railway Lines

In Assam, a new railway line between Lakhimpur and Gogamukh has been opened to traffic.

It is metre-gauge line providing the shortest route between Upper Assam and the rest of the country. A further extension up to Murkong has also been opened to goods traffic only.

The line is part of the development programme of the North-East Frontier Railway, costing Rs 98 crore during the Third Plan.

Work started on July 1 on a metre-gauge railway between Hassan and Mangalore in Mysore State. The 190-kilometre-long line will cost Rs 24 crore. It will help to handle the traffic at Mangalore port which is being developed as a major port. The work will be completed in six years.

RED EARTH

Fifteen Poems from a Classical Tamil Anthology. Translated by A.K. Ramanujan. Writers Workshop, Calcutta. Rs. 4.

THESE slender poems, rich in song, are renderings from the *Kuruntokai*, a Tamil anthology probably eighteen centuries old, and they take us across time to a land of clear light and grace. They are poems of love, of young pining and wisdom. There are longings and regrets but no harsh hates.

.....And
like a honeycomb ripening on the
hills suddenly falling
he went.....

And he himself, thinking of his love, muses:

What kin was your mother
to mine? What was my father
to yours anyway? And how
did you and I meet ever?
But our hearts are as red
earth and pouring rain:
mingled
beyond parting.....

There are references to loud-mouthed towns, and to men who, when wild, will ride even palmyra stems like horses; but these are not the impressions that stay, but of "jack-fruit trees that have fruit on their roots" and of the season of cool rains "that laughs with its teeth of jasmine." It is not a society weighed down with guilt, or shame. When the girl goes away, the foster-mother says:

.....that simple girl
her face the colour of the new mango
leaf
who left us
for a man
with the long bright spear

Much has been said of the untranslatability of the lyric. But now and then comes a translator who has the benediction. Mr. Ramanujan captures the singingness of early Tamil, and gives us the lilt, and the "sharp glory of a bright-lit neem". Every word and nuance is right in English as in the Tamil.

The fifteen poems are from a larger book called *The Interior Landscape* which the Indiana University Press of U.S.A. will publish next year. A book certainly to look forward to.

H.Y.S.

TWO ANNUALS

Major Industries of India Annual (1964-65). Edited by M.P. Gandhi. M.P Gandhi & Co., Bombay. 374 pages. Rs. 15.

LIKE its previous numbers the present annual compresses in a single issue the Indian industrial scene and the course of our economic advance. The volume does not only cover the leading industries of India, traditional and non-traditional, but it also presents a refreshingly new outlook on the current problems of trade, economic policy, foreign collaboration and economic planning. The contributors sharing the highlights are: Dr. John P. Lewis with his "New Approach to Rural Works", Dr. P.S. Lokanathan with his "'Export Oriented Industries" and Mr. Manubhai Shah with his vigorous argument in favour of export policy. Mr. K.B. Lall has thrown new light on foreign trade policy and a galaxy of industrial executives give their thoughts on the basic problems of some of the well-established as well as newly developing industries.

The annual tells more about the Indian economy than any other similar publication.

Industrial & Engineering Annual 1964 by J.C. Jain. Eve's Weekly Ltd., Bombay. 200 pages. Rs. 5.

THE publication presents a mixed panorama of India's industrial and engineering complex. Among the industries selected for review are the traditional ones such as plantations and textiles and a few of the more recent engineering industries such as instruments manufacture, machine-tools, automobiles and power generation. Interest has also been focussed on the prospects and problems facing small scale industries.

The annual has some useful contributions on problems of industrialisation. Marketing, finance, management and export promotion have been carefully selected as the major themes of analysis and study. The articles on public relations, purchasing, and trends abroad cater for a more diversified readership. However, in an effort to present a rich variety, some of the more important engineering industries have been left out.

Besides the quality of its articles, the publication is also commended for display.

"Amicus"

Urban Regeneration and Human Needs

G. N. ACHARYA

THE ambivalence of our attitudes on public issues has now deepened into a virtual schizophrenia. We want to be regarded as a poor, underdeveloped nation needing and deserving all possible aid. At the same time we practise a prodigal hospitality which can only spell riches. Luxury hotels and jet travel are only two of the symbols of a mode of life more appropriate to affluent societies.

The same type of schizophrenia is evident when at one time we speak of political freedom as a historic point of departure, a new beginning in the life of our people; and at other times imply that political freedom meant no revolution, and stress the continuity of all our institutions.

SIXTEEN BECOME 367

We love jubilees. Nobody, therefore, saw anything unusual when the Town Planning and Valuation Department, Maharashtra State, celebrated its Golden Jubilee last February. The State itself, in its present form, is only five years old.

The discreet pages of a book published to mark the occasion (apart from other rituals) discloses little affinity between the scope and purposes of the Department as it was half a century ago, and as it is now. We are told that the Department had "almost a skeleton staff" in 1914. Elsewhere the expression "minimal staff" is used. No numbers. But the inevitable "group photo" taken in 1915 shows only 16 persons including sepoys. As late as 1945, the staff was only 74. Last year there were 41 gazetted officers, 131 non-gazetted staff and surveyors, and 195 in the clerical and drawing branches.

The more real and substantial difference arises from the nature of the legislation applicable to the working of the department. Under the 1915 Town Planning Act, valuation for acquisition mattered most, planning least. The 1954 Act of the same name makes it obligatory on every local authority to prepare a development plan within four years—an injunction, like many others in our Constitution and statutes, which has remained unimplemented in many cases.

The mechanical details of the growth of the Department cannot be regarded as of vital interest. It would have been quite another matter if the Department could have recorded the growth of the concepts of urban regeneration, and their acceptance as official policy. It is a sign of the virtual atrophy on that front that even today urban development seems to be regarded as a problem in engineering and no more.

"Men come together in cities," said Aristotle long, long ago, "in order to live: they remain together in order to live the good life." The good life of the entire community—the rich and the poor, the car owners and the pedestrians, the working adults as well as the non-working old and children, has to be taken into account in urban planning. Their need to work and play, to earn and to spend, to sleep as much as to stay awake; their requirements in sickness and health; their quest for rest, solitude, recreation and culture, have all to be considered in any planning that is comprehensive and worthwhile.

There is no sign of any deep understanding of this principle in the changes now on in Bombay. There is, for instance, a bustle of activity in widening roads and building over-bridges to speed traffic. The assumptions underlying this activity cast doubt on our socialist professions.

The car owner already has an advantage over those who have to walk or use public transport. He can reach his destination quicker and in greater comfort. Yet, it is somehow thought very important that he is not delayed or detained anywhere. Under the latest traffic regulations vehicular traffic runs on straight lines at road junctions and the pedestrian is asked to make a detour. In addition to walking longer distances, he has to run the gauntlet of marker blocs, erected everywhere across his path to indicate car parks, or to prevent "U" turns by vehicles.

For the same purpose, an overbridge has already come into use at Kemp's Corner and another is in the making at Princess Street. The first serves traffic in one direction only—north-south. It has involved encroachment on the Malabar Hill. The Princess Street bridge, even more than the one at Kemp's Corner, has brought permanent misery to the residents alongside. Those on the ground floors find their view blocked by an ugly rumbling bridge and those on the upper floors have their peace disturbed by traffic which has risen to their levels.

POLICEMAN VERSUS CITYSCAPE

The bridge will also scar the proud panorama of the famed Marine Drive. Lewis Mumford in *The Culture of Cities* wrote: "The city is a fact in nature, like a cave, a run of mackerel or an ant-heap. But it is also a conscious work of art, and it holds within its communal framework many simpler and more personal forms of art. Mind *takes form* in the city; and in turn, urban forms condition mind...The city is both a physical utility for collective living and a symbol of those collective purposes and unanimities that arise under such favouring circumstances. With language itself, it remains man's greatest work of art."

With us, traffic is not the concern even of the engineer, but primarily of the policeman. Police officers

are not tested for aesthetics. They have no quarrel with the ant-heap view of city life. The idea that there is such a thing as a cityscape can strike a police officer as something strange and non-existent. If city life were informed by a sense of beauty or harmony, it wouldn't be marred by loud and vulgar advertisements across the bay, over the walls of temples, mosques and cremation grounds. So many neon lights wouldn't glitter in such maddening disarray. And, the city centres wouldn't be used as hideous car parks.

NIGHTMARE OF NOISE

Writing in London Diary in *The New Statesman* on June 4, (a rare thing for him these days) Mr. Kingsley Martin said: "The centre of cities must be freed from traffic. I have seen this done in Sweden, and a beginning has been made in some towns in England. Life would be much more tolerable if the centre of every city was a haven where you could stand, sit and talk in security and peace."

That is an improbable dream in Bombay, and in most of our cities too. The automobile, mostly ignored in the scheme of things visualised by town planners (as evidenced by the lack of garage space and parking lots), is fast upsetting their calculations. Dr. Rafiq Zakaria, Maharashtra's Minister for Urban Development, in an introductory note to the book referred to earlier, says that planners should be able to visualise the permissible limits of a city's growth, "on the basis of potentiality of utility services". It should be clear to any intelligent observer that in respect of road space for automobiles, Bombay has certainly reached its optimum capacity, at least in the more significant areas.

In the days when city builders were worrying about the needs of security from marauders rather than problems of wheeled traffic, the Indian theory was that city streets must be broad enough for a horse to turn round. By the same token modern streets must be wide enough for an automobile to turn round. But how wide is that, when you remember those low, purring, high-powered, steel and chromium monsters, with their noses and behinds looking alike, and with tails and fins growing with the fashion? There are too the lorries and trucks, growing larger day by day, but still not banned from using up road space for parking.

Next to the struggle to enable cars to move faster, the city is engaged in a hectic attempt to build residential flats. Narrow-chested, multi-storeyed, scarecrow-like apartments with rents few can afford are mushrooming fast. Their shapes and their rental values result from land prices. It is land price that has induced the Central and Western Railways to crowd apartments on narrow spaces almost brushing the railway lines. With literally hundreds of goods and passenger trains thundering past daily, life in these apartments must be a nightmare of noise.

LAND PRICES RISE

A citizen's right to peaceful sleep may not have acquired constitutional acceptance, but the inability of a Planning Department to enforce a rule that homes cannot be built on railway lines can only be pitiable. I will be told—quite truly—that the Department has nothing to do with this matter, and land values follow inexorable economic laws. On July 4, 1964, Bombay newspapers carried a news item which said that the State Government had sold two plots at the Backbay Reclamation measuring 3,416 square metres to an estate agency at what was "believed to be the highest price ever offered in India for any type of land."

On the basis of a price of Rs. 5,000 per square metre, the lessee was to pay rent at the rate of six per cent and a half per year. This was the highest of 20 tenders and the agency was to deposit Rs. 35 lakh at once. The land prices in this area, the report said, had risen 60 times during the last 14 years. The rise elsewhere may not be so spectacular. But here is something that concerned the Town Planning and Valuation Department right from the outset, because the provisions of the 1915 Act dealt with freezing of land values in order to acquire land for public purposes. Public purposes or private purposes, urban development is being simply defeated by costs—of land, materials, labour and profit margins.

The building of overbridges, the location of flats along rail lines, the leasing of reclaimed land at high prices, will all be cited as instances of economic efficiency. Maybe, they are. R.H. Tawney in his classic, *Religion and the Rise of Capitalism*, had this to say: "Economic efficiency is a necessary element in any sane and vigorous society, and only the incorrigible sentimentalist will depreciate its significance. But to convert efficiency from an instrument into a primary object is to destroy efficiency itself." Our economic development, as Tawney said a few words later, "must be based on some conception of the requirements of human nature as a whole".

While nobody need grudge the Government its little pleasure in celebrating the jubilee of a potentially useful department, one cannot help regretting that it should have been unable to resist what Mumford called "the acquisitiveness of a sick metropolis". Urban development in a society that professes socialist objectives must be comprehensive and pay greater regard to human needs.

SHAMBU **By Malinda Topa**

WHY & HOW ?

How Do Accidents Take Place in Coal-mines?

A Yojana Science Note

A coal-mine is a source of immense riches—and like all forms of riches it carries its own risks. The hoards of "black gold" kept by nature in her vaults underground are taken out by men at considerable suffering. A couple of months ago three calamitous coal-mine explosions occurred in three different countries of the world—India, Japan and Yugoslavia—resulting in the death of about 700 workers. Among these the Dhori explosion near Dhanbad which killed 300 people was one of the biggest coal-mine disasters in the world.

SAFETY DEVICES

Five lakh workers are employed in the coal mining industry in India, and India is among the seven leading countries of the world in coal production. These workers contribute in a large measure to the increased production of coal, which accounts for 70 per cent of the total value of India's mineral production.

Mining of coal by modern methods started in India in 1814. As in other parts of the world, in India too there has been steadily increasing emphasis on safety measures. The labour welfare measures adopted since Independence place redoubled stress on this aspect. Mine safety weeks have begun to be organised. There is insistence on adoption of safety devices and procedures on the part of mine managements, and workers are being educated in safety-consciousness. Rescue stations with modern equipment, manned by trained persons, have been opened in various places. In spite of all these, fatal accidents occur—not only in India but elsewhere in the world.

FALLING ROOFS

Underground accidents may be caused by falls of ground, or during haulage and transport, or owing to mine gases catching fire and exploding. Half the total number of casualties each year is due to the falling of mine roofs and sides. Although not more than one or two are killed each time, regular falling causes a large number of deaths in the aggregate.

This can be prevented by giving adequate support to mine roofs and sides. Along with normal support systems, pillars of coal are left unmined to supplement the protection. A technique known as "rock bolting" is widely used now. In this method, holes are drilled in the strata of coal and steel rods are inserted which bolt together several weak layers to form an effective thick beam.

LARGE HAULAGE

Accidents are also caused frequently on account of haulage and transport. A coal mine requires a large number of haulage workers. Because of the large-scale movement of men and material and also because of lack of space and poor lighting, accidents often occur.

NOXIOUS GASES

During mining operations, pockets of noxious gases are often struck. Sometimes the interaction of carbon, moisture and heat produces harmful gases. When coal strata are disturbed, the highly explosive methane gas or firedamp which is occluded in them is given off. A naked flame sets fire to the methane-air mixture. Very often, minute electrical sparks set off fires and explosions. Only specially designed electric equipment is used in mines. Also, all mines are classified into gaseous and non-gaseous. Extra precautions are taken in gaseous mines.

WHITE-DAMP

To reduce danger from gas, long bore-holes are drilled in the coal strata and the gas is drained out to the surface. Also, large quantities of air, up to 20,000 cubic metres per minute, are circulated inside the mines to reduce the percentage of methane.

Even one per cent of carbon monoxide, sometimes called white-damp, can cause death. It is produced in the course of incomplete oxidation of coal.

AFTER-DAMP & COAL-DUST

A third kind of damp is after-damp. It is a mixture of gases formed after explosions.

Among the various factors which cause deaths in coal-mines, the most devastating are the coal-dust explosions. Coal-dust presents a far greater danger than methane or firedamp.

EXPLOSIONS

What is a coal-dust explosion? A modern coal-mine consists of a number of coal-producing faces or seams. Underground seams are reached from the surface through "shafts" or "pits" and through underground tunnels several miles long. As coal is transported through tunnels along which passes a constant current of air, their irregular surfaces become covered with a thin layer of coal-dust. If the dust is raised into the air it can form an explosive mixture. The methane gas that is liberated when coal is extracted may accumulate and sometimes be ignited by faulty electrical equipment or by the explosives that are used in blasting the seams. Once in a while such an explosion may be so strong as to raise the coal-dust on the surfaces of the roadways and the dust cloud thus formed may be ignited by methane flames. This blast may set off a chain of explosions throughout the network of roadways.

(*Continued on Page 24*)

Amiya Thirty Years After

IT is nearly thirty years ago that I first met Amiya Chatterjee. He was a guard on the East Indian Railway and I used to work on a Calcutta newspaper.

I was at Rampur Halt Station waiting for a train to Calcutta. A goods train drew in along the platform, and noisily came to a halt, with the monkey brake (as railwaymen call the guard van) just in front of me. Inside the van I saw a young man holding a ledger. What seemed unusual, however, were a heap of books and a bunch of Rajanigandha flowers on a wooden box.

Books and flowers in the guard's compartment of a goods train carrying sand, cement, corrugated sheets and cattle? Improbable! Here is an unusual man, I decided.

The tea I had ordered arrived in the meantime, and I walked across to the guard's van and offered him a cup. He was surprised at this unexpected gesture and looked at me for a moment before accepting the tea with a smile.

We began talking. "You are right," said Chatterjee, "I am a misfit here. I had no alternative. After my father's death I had to carry the burden. Had to leave college and take up this job."

I gathered he had four dependants—mother, brother and two sisters, one unmarried and the other widow. We talked for nearly an hour until the train lazily pulled out for Burdwan. My own train was two hours late.

Chatterjee and I began to write to each other. His letters were brief and unconventional. I can still recall what he had said in his first communication to me: "With the first rains of the monsoon the Rajanigandha in my courtyard has begun blooming. I wish I could convey to you the intoxicating smell." A year later he sent me another note: "Have you ever cared to look at a village after it has been drenched in rains? It reminds me of a woman returning from her bath in a tank." Now and then he sent me his favourite passages from Tagore and Shelley.

OUR correspondence became more and more spasmodic. After a time I didn't even know whether he was still at Nalhati. A decade or so later, I learnt from another railway friend that Chatterjee was on the suburban section and was posted at Bandel. From the station I found out his address and when I visited his place I had a surprise in store. He was married and had two little sons!

When did he marry and how was it that he did not care to inform me? Chatterjee smiled sadly and didn't answer. As I left, he walked with me a little way and said: "What was there to inform you, my friend? Mother was not keeping good health. She wanted me to marry and marry the girl of her choice. As an obedient son, I had to carry out her wish."

Earlier during the visit he had shown me a journal which had published one of his latest poems. He now asked me what I thought of it. I said it had signs of promise. "The pity is," Chattterjee said dejectedly, "my wife doesn't like flowers or poetry. But I have not lost hope of converting her."

Some years later I came away to Delhi. Once again Chatterjee had begun writing to me. The letters were now a frantic cry for getting free from the clutches of reality. After a few years, however, the correspondence from his side stopped altogether. He did not acknowledge my letters.

WHILE in Calcutta this time I managed to find his address. I wrote to him to expect me on a particular morning, and I bought a fresh bunch of Rajanigandha for him from the Hogg Market.

Chatterjee received me with open arms. We talked of children and jobs and of life in Calcutta and Delhi. He showed me with pride the new sofa set he had bought. One by one he also showed me his other acquisitions—an almirah, a dressing table, a pedestal fan. "I have been promoted, you know," he went on, "I now run the mail train between Howrah and Mughalsarai and earn a lot on extra mileage. If you come a month from now you will find me in Howrah in a far bigger house."

I looked at him. In the place of the pale and poetic Amiya of thirty years ago, here was a plump, satisfied creature. I looked round the room. No. There were no books or flowers. I peeped out at the small courtyard and found tomato and *bhindi* growing there.

I left the place assuring him that I would call again. A chorus of conch-shell sounds filled the evening air. I discovered I had the bunch of Rajanigandha still in my hand.

KALI BISWAS

Mine Accidents

(*Continued from Page 23*)

The increase in the use of conveyors for transporting coal along underground roads has increased the hazards of coal-dust explosions. In 1958, explosions at Chinakuri and Central Bowrah collieries killed 199 persons.

Some of the larger coalmine explosions in this century are : 1906, Courrieres, France, 1,099 killed; 1942, Honkeiko, Manchuria, 1,572 killed; 1946, Grimberg, Germany, 439 killed; 1962, Luisenthal, Germany, 298 killed; and 1963, Miike, Japan, 458 killed.

One of the common methods to prevent coal-dust explosions is to introduce large quantities of limestone dust into the mine and to spread it over all surfaces on which coal-dust can accumulate. When an explosion occurs the stone dust quenches the flame and dilutes the coal-dust cloud.

Another method is to place shells loosely across roadways on which several tons of stone dust is heaped. This dust is thrown into the path of the advancing flame by the first blast.

PUNJAB HAS BEST EVER HARVEST

Bright Spot

Punjab produced in 1964-65 more grains than ever before.

The production totalled 89.87 lakh tonnes, as against 57.44 lakh tonnes in 1963-64.

The Third Plan target for the State is 68.50 lakh tonnes—which means that the 1964-65 harvest is 31 per cent higher.

The cultivable area in the State increased to 17.80 lakh acres in 1964-65 from 17.20 lakh acres in the previous year.

FIFTH STEEL PLANT AT VISAKHAPATNAM

Consortium's Suggestion

THE British-American Steelworks for India Consortium (BASIC), with which India signed an agreement in January for a study of the fifth steel plant in the public sector, has suggested Visakhapatnam in Andhra Pradesh as the site for the fifth steel plant.

Its second choice falls on Hospet, in Mysore State.

The Consortium is of the view that India should establish the fifth steel plant on a deep water site, and that made Visakhapatnam the most suitable.

The Consortium was asked to investigate six sites, namely Visakhapatnam, Hospet, Bailadila, Goa, Salem and Neyveli.

The proposed steel plant will have a capacity of 1.5 million tonnes of steel, further to be expanded to about 4 million tonnes.

Rice and Sesame Record

The production of rice in the agricultural year just completed (1964-65) has been the highest ever, according to the all-India final estimate.

The quantity was 38.73 million tonnes, an increase of 1.84 million tonnes, or 5 per cent, over that of the previous year.

The area under the crop was 36.07 million hectares, an increase of 0.45 million hectares, or 1.3 per cent, over the previous year.

The production of sesamum was 466,200 tonnes (458,800 tonnes in 1963-64) in 2,503,100 hectares.

MORE CARS AND SCOOTERS

The production of cars in 1964 was 23,226, 48 per cent over the previous year. The production of scooters rose to 37,193 an increase of 40 per cent.

In addition, 33,472 lorries were produced, an increase of 17.5 per cent over the previous year. The output of jeeps was 10,436, an increase of 30 per cent.

The percentage of indigenous content has now gone up to 85 in cars and 90 in commercial vehicles.

24TH INDUSTRIAL ESTATE OF MADRAS

MADRAS State has opened its 24th industrial estate at Ambattur. It accommodates 70 units.

Madras State now has about 7,500 small-scale industries, compared to a couple of hundreds only ten years ago.

- An agreement has been signed with the Soviet Union for training Indian personnel in designing thermal power stations.
- Japan has given a credit of 21.6 million yen (Rs 28.56 crore) for the final year of the Third Plan. It will be used for the Gorakhpur fertiliser plant, the Durgapur alloy and steel plant and the Gujarat fertiliser project. It will also be used for purchases relating to projects in which Japan is collaborating.
- The two loans, totalling Rs 250 crore, which were floated by the Union Government, have been fully subscribed.

SNIPPETS

I. C. I. Fertiliser Plant at Kanpur

A factory to manufacture bearings is to be set up in India with Japanese collaboration. It will be managed by a new company, the India Nippon Precision Bearing Manufacturing Company, and is expected to begin production by May next year....A private factory to produce nylon fabrics is to be set up at Meerut at a cost of Rs 1 crore in collaboration with an American firm....**The Imperial Chemical Industries will set up a fertiliser plant at Kanpur with an annual capacity of 2.5 lakh tonnes of nitrogen...The plant will cost Rs 25 crore...** Foundations for the Gujarat fertiliser factory have been laid...The Rajasthan Government is to set up two cotton spinning mills at Ganganagar and Chittorgarh, each with a capacity of 25,000 spindles...The work on the development of Porbandar as a major port will begin after the monsoon...The Narotowa barrage, 29 kilometres from Jalpaiguri in North Bengal has been opened for irrigation. Built at a cost of Rs 45 lakh, it will irrigate 23,000 acres of land.

A Village of Harijans Plans for Better Days

By INDRA YESHWANTH

KURANGANILMUTTAM, a village in Madras provides a graphic example of the way Harijans are transforming themselves in the last few years.

The preponderant majority in the village is Harijan—83 per cent of the population of 435. Most of them are agricultural labourers and tenants; a few own lands and cultivate them.

This village is eight kilometres from Conjeevaram. Besides Harijans, it has a small number of Vanniyas, Viswa-Karmas and Brahmins. The Vanniyas are mostly landowners and cultivators; the Viswa-Karmas are carpenters and black-smiths.

Caste hierarchy is maintained, of course, but happily there have been no inter-caste feuds. Tradition rather than prejudice keeps the Harijan quarters away from those of other castes. All except the two Brahmin households take water for drinking from the tank near the local temple. Matters of common interest are decided through discussion. A few years ago when the Harijan tenants demanded a higher share of produce from the leased lands, the Vanniyas conceded the demand without any heat being generated.

NEW FARMING METHODS

Several Harijan labourers have been able to purchase lands. They have adopted improved methods of cultivation such as the use of iron ploughs, the application of fertilisers and more manures. One Harijan cultivator has even installed an irrigation pump. The village forms part of the Dusi development block, and under extension schemes it gets improved seeds, fertilisers and pesticides.

Paddy is the main crop of the village, but most Harijans eat *ragi*. On 180 acres of wet land both paddy and *ragi* are sown. The villagers sell their paddy at Conjeevaram and buy ragi, which is a cheaper grain. In spite of improved economic condition, there is no noticeable trend towards a change-over to rice.

The only source of irrigation in the village is the Mamandoor Hissa tank which gets its water from the Palar Anicut channel. Depending on the water supply, there are two or three harvests of paddy. On 80 acres of dry land other millets and groundnut are cultivated.

The Harijans live mostly in thatched houses. Of the 93 households in Kuranganilmuttam 75 belong to the Harijans. Three of their houses have been tiled recently. There is no proper drainage, but the streets are well maintained and are clean. The development block has sunk a well in the midst of the Harijan quarters for drinking water. The old pond in the village is no longer used as a source of drinking water, but for washing cattle and clothes. The Harijans in fact want it to be closed as it breeds mosquitoes.

EDUCATION IN DEMAND

The younger Harijans are keen on higher education. There is even an engineer among them. Despite the fact that there is only a primary school in the village, the Harijan Welfare Elementary School, a number of Harijans have completed middle school. But progress is much slower among Harijan women.

All the students and the two teachers in the village school, which was started in 1946, are Harijans. Non-Harijans go to the schools in the near-by villages of Pallavaram or Mamandoor. The average attendance in the Kuranganilmuttam school is fairly high—about 75 per cent. The building needs repairs but the children are given mid-day meals.

Kuranganilmuttam has no panchayat of its own. It is attached to the Vadagalpakkam panchayat, 2½ kilometres away. Harijans and Vanniyas have a representative each on the panchayat. The Harijans have their own hereditary caste panchayat. Its three leaders meet occasionally. But as ceremonial heads they have little influence.

There is dissatisfaction that the Vadagalpakkam panchayat is not giving enough attention to Kuranganilmuttam. There is no road connecting the village to the Wandiwash road or to other villages. There is no clinic. The general feeling is in favour of joining the Dusi panchayat, especially because a large part of lands of the Kuranganilmuttam tenants comes from landowners in Dusi.

A YOUTH LEAGUE

The old social and religious traditions and customs do not seem to have much attraction for the young. The Harijans do not go to the Valeeswarar temple in the village although their entry into it is no longer barred. Even Ayyanar and Mariamman, the traditional gods of Harijans, are now seldom worshipped by the younger people. Village festivals, once the community's craze, are becoming less popular.

Apart from their caste organisation, the Harijans have formed a youth welfare league. It aims at improving the sanitation, education and employment in the village in co-operation with the development block. There is scope here to introduce subsidiary occupations like dairying, mat weaving and poultry farming which can supplement the labourers' earnings.

Kuranganilmuttam, in spite of its lack of proper communication facilities, has its attractions for the outside world. Tourists occasionally go to the village to see its Pandava Caves. The Valeeswarar temple itself has fine architecture of the Pallava period.

The article was first published in "Jagriti"

Yojana Bhavan Diary

June 19 & 22—Mr George Carter, Regional Director, North Africa —Near East—South-Asia Division of the Peace Corps, Washington, visited Yojana Bhavan and had discussions with Mr Asoka Mehta, Deputy Chairman, Mr M. Butt, Joint Secretary, and Mr U.S. Rana, Director, Liaison.

June 24—Mr C.A. Majid, Economics Officer, ECAFE, met Mr B.N. Datar, Chief, Labour and Employment, Planning Commission.

June 26—A new executive body of the Planning Commission Club was elected. The new office-bearers are :

President—Mr A. Mitra

Vice-President—Mr G.P. Sharma

Secretary—Mr R.S. Das

Joint Secretaries—Mr K.B. Lal; Dr Miss Champa Aphale

Members—Mr K.K. Rastogi, Mr Kuldip Singh, Mr R.P. Genda, Mr M.V. Narwani, Mr D.K. Issar, Mr Krishan Gopal, Mr Amin Chand and Mr T.S. Kohli.

June 30—A meeting of the Members and staff of the Planning Commission was held to mourn the death of Mr B.K. Kaul, Adviser (Programme Administration), on June 29. Mr Kaul had joined the Planning Commission on May 1.

July 3—Mr K.H. Junghans, Assistant Professor of Agriculture, Heidelberg University, visited Yojana Bhavan for talks in connection with the participation of the German Voluntary Service in India's development activities in rural areas.

July 11—Mr U.S. Rana, Director, Foreign Volunteers Programme, left on deputation for Germany to study the foreign volunteers' organisations.

QUOTATION BOX

Each State has two Plans, one to discuss with the Planning Commission and the other which the State itself considers feasible.

—Mr Asoka Mehta, quoted by United News of India

Some business executives no doubt can deal better with modern conditions of stress than others, and certain animals also are less sensitive than others.

—From "World Health"

The Joint Secretary first made his appearance during the war. The Additional Secretary was by and large a post-war phenomenon. The Special Secretary came still later, more as a consolation prize before a civil servant retired or while a senior Joint Secretary marked time to occupy the Secretary's chair.

—Editorial in "The Times of India"

The essential feature of behaviour pattern of modern Indians is, of course, that there is no pattern.

—Prof. Ashok Rudra

What we really need at the present juncture is no further Plan but a Plan holiday, ranging from five to seven years.

—Mr D.C. Kothari, President of the Madras Stock Exchange

Since all hurry has been eschewed —and hurry, especially hurry in speech, was a foible of the late Prime Minister—there is no danger now that hurried decisions will be taken and that they in turn may lead to undesirable results..... The Madras linguistic orgy was no credit to anybody. But there is a great deal to be said for the masterly inactivity with which it is being met by Delhi.

—Mr H.M. Patel

And so why not Bijli Smashan (instead of Vidyut Shava Dahan Griha) for the electric crematorium! Even the tonga-driver will know where to take you, Sir, if you wish to visit the place.

—A letter in "The Statesman"

The democratic structure of India makes the Shastri Government particularly vulnerable to public opinion of all shades—the ill-informed, the well-informed, the well-intentioned and the malicious.

—"The Yorkshire Post"

In London alone, 13,000 telephones were either smashed, ripped from kiosk walls, or put out of action in a single month. British Railways disclosed that the bill for deliberately broken carriage fittings was running at over £750,000 a year.

—Mr Brian Inglis in "Private Conscience, Public Morality"

The party leaders decided last year that the young would never be allowed to look down on the countryside. Thus by 1977 every student will be spending half his time at study and half at work, until he ceases to know whether he is an intellectual or a peasant.

—From a report on China in "The Times", London

Puthirasikamani, a former police constable, who is alleged to have fired at a Hindi name-board at the post office in Madurantakam on February 1 last, was found guilty and sentenced to undergo imprisonment for a total period of 18 months by the Additional Assistant Sessions Judge, Chingleput, on June 25.

—A report in "The Hindu"

The Governor (Mr Giri) said that the Chief Minister needed a plane for his work and if the Government could not give him one, people should give one paisa each and raise sufficient amount to help buy a plane.

There was a ready response to the suggestion of the Governor. A non-gazetted official in Bangalore was among those who promptly responded to the Governor's appeal by sending one paisa by money order to the Chief Minister for the "paisa fund".

—A report in "The Hindu"

A generalist-administrator, brought up to collect revenue and enforce criminal law in the districts, is supposed to be better qualified to run a health department (because of his emotional detachment as between one disease and another) even though he may not be able to tell the difference between a vertebra and the pelvis or the connection between the spread of TB and the lack of medical research....

The time has come to shed either the generalist-minister or the generalist-secretary. Two tiers of ignorance are one more than the country can afford.

—From "Bureaucrats and Technicians" in "The Indian Express"

A touch of irreverence will do AIR no harm at all. A Government that never laughs at itself is soon laughed at by many.

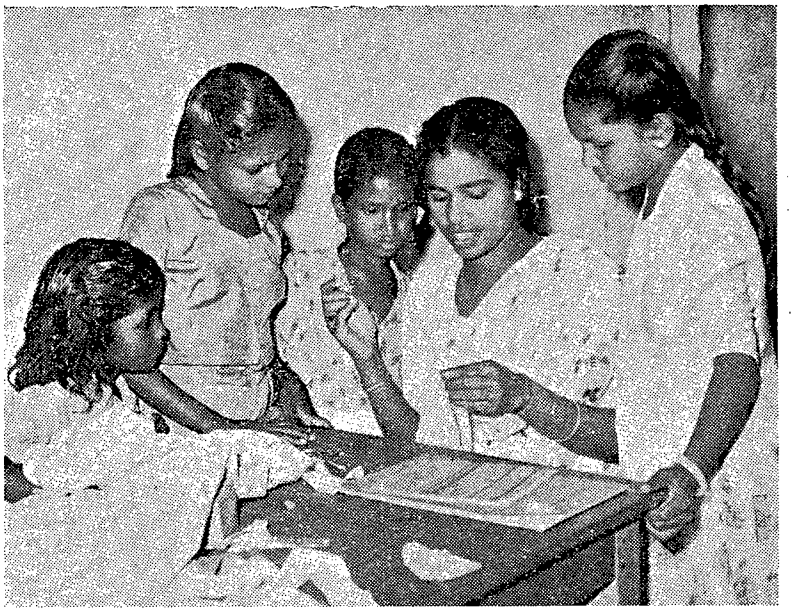
—From a note in "Now"

STAGBROOK STORY

(From Page 6)

groups, precluding a common outlook or collective action for their improvement.

When Bharat Sevak Samaj launched the project, the problems of women and children were taken up first. A nursery school was started with six teachers who were trained later by a trained teacher. A fee of Rs. 1.50 per child was collected to meet the expenses of the teachers. Now there are seven nursery schools with 200 children. The estate managements provided the buildings and equipment. The children of the workers who once wandered about in dirt are now given shelter and guidance.



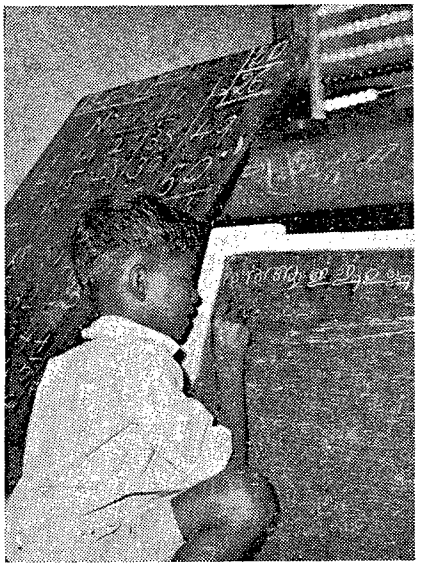
Miss P. Mahalamani, a farmer's daughter who is a Sahayogi ("co-worker") in Stagbrook, teaches embroidery to a group of Stagbrook girls. At left she teaches a housewife to stitch at a sewing machine

There was also the problem of ill attended babies whose mothers have to go out for work. Creches were provided by the managements but usually an old woman, illiterate and unclean, was in charge of the babies. The Kshetra workers offered to take over the creches and now there are 5 creche centres where 80 children are attended to by trained girl workers. Mothers of the children are given advice on child care.

Mahila Samajams were organised and home science camps for housewives held now and then. The Stagbrook Mahila Samajam purchased a sewing machine and started a sewing class where women are also taught lacework and embroidery. A women's co-operative society is being organised to produce and market the garments. There are now 9 Mahila Samajams with a membership of 400.

A family planning seminar was held last year. Contraceptives were distributed at the seminar.

A 'Stagbrook LKK Arts Club' has been started for cultural activities. Musical instruments are provided for its thirty members. The club staged a drama in 1963 and another is being rehearsed.



Tea estate labourer's son learns his first letters and figures

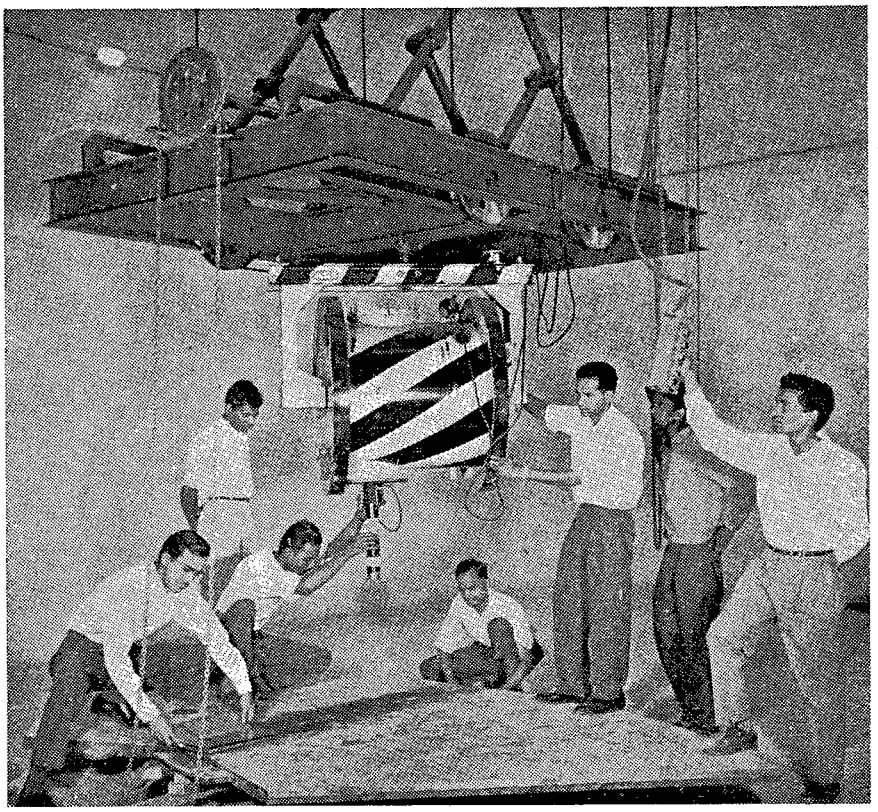
A reading room and library was started in 1961. It has 296 members and nearly 2000 books and periodicals.

A sports club has been functioning. The volleyball court was levelled by the workers by Shramdan.

These activities have brought in a unity of purpose among the labourers. Now the workers are more informed and 77 persons are contributing to the Time Deposit Scheme. Teachers of the local panchayat school find the children from the nursery schools more intelligent and keen in their studies. The people have become aware of their role in nation building and feel that they must work harder in their own interest as well as in the national interest.

Mr. C.K. Mani, chairman of the managing committee of the Kshetra, says, "Last year, a hundred Fertiliser Festivals were organised in the area. We also propose to organise one hundred home science camps to teach women how to look after their homes. Our next target is a Plan seminar in August in which representatives of the people, industrialists and Government officials will participate."

Pictures : TARA CHAND JAIN



Fault Finding Machine

AN industrial radiographic unit using Cobalt-60 radioactive isotopes has been installed in the Bhopal Heavy Electricals Factory.

The gamma rays emitted by the isotopes are used for testing of huge welded steel equipment. A steel joint 100 mm thick can be radiographed in a matter of just ten minutes to detect any flaws which are invisible to the naked eye. The 2000-curie radiographic unit installed at the HEL is one of the most powerful of its kind.

Radiography is one of the many new techniques in the field of what is called 'non-destructive' testing which is the science of detecting flaws or measuring the performance capabilities of materials or manufactured articles *without causing any damage to it.*

Modern engineering industries make heavy demands upon construction materials. In the various applications of atomic energy, in aircraft flying at supersonic speeds, in power station plants, oil refineries, bridges, ships, and defence equipment the importance of quality and reliability of the metallurgical products used cannot be overemphasised. With modern equipment and expert diagnosis, non-destructive testing methods are used to locate the nature and position of defects in such products with a surprising degree of accuracy.

Items ranging from small samples of solid material and miniature components of equipment to the large pressure vessels of nuclear reactors are tested by these methods. With the coming of automation in many industries, non-destructive testing will gain yet further in importance.

Non-destructive testing is not a modern innovation. 'Ringing' pots (or coconuts) against one another in order to detect cracks and proving the temper of a knife blade before using it are age-old methods of non-destructive testing.

The modern techniques of non-destructive testing are divided into nine groups: radiological, elastic, electrical and magnetic, optical, thermal, mechanical, chemical, penetrant, and atomic and nuclear.

Among the radiological methods are radiography, fluoroscopy, X-ray spectroscopy, electron microscopy and radioactive tracer techniques. Testing methods using radioisotopes are now widely applied. Radioisotopes are unstable atoms which emit beta particles and gamma rays in the course of becoming stable. This process, known as radioactive disintegration, occurs naturally in elements such as uranium and thorium and in isotopes of strontium, plutonium, caesium, cobalt, etc., produced artifically in nuclear reactors.

The rate of disintegration of these isotopes is measured in curies. When the radiation emitted by these isotopes falls on matter, it is absorbed and scattered to an extent which depends on the thickness, density and atomic number of the material. This principle is applied in gamma radiography. The four commercially available sources of gamma rays are cobalt-60, Iridium-192, Caesium-137 and Thulium-170.

In radiography, the gamma rays from an isotope kept in a sealed container are made to pass through the specimens for testing and are recorded on a film or screen placed as near as possible to the opposite face of the specimen. If there is a hole in a specimen more radiation will pass through it than through the surrounding portions. A shadow is produced thus on a photographic plate which is called the radiograph. It can provide information on the nature, extent and location of an internal defect with reasonable accuracy.

The major advantages of gamma radiography in comparison with X-radiography, which is another method of non-destructive testing, is that it does not need electricity or water or continuous operator control. X-rays, on the other hand, are produced by electrical means and so continuous operator control is necessary for an X-ray set.

The Heavy Electricals at Bhopal will soon have, in addition to the 2000-curie cobalt-60 radiographic unit, two radioisotopes of two-curie cobalt-60 and one-curie Caesium-137 and two industrial X-ray radiographic units.

Reg. No. D-876

MASTER CRAFTSMEN-III

ABDUL QADIR RANGREZ

weaver of kani shawls

By USHA CHETTUR

THE weaving of the richly ornamented Kani shawl is an intricate art, which comes only from years of industry and patience. This highly developed craft of making loom-woven woollen fabrics has been practised by a small and exclusive band of weavers in the valley of Kashmir, each of whom is a veteran craftsman. Adbul Qadir Rangrez, the recipient of the national award for Kani weaving, is the oldest among them. At the age of 89, he still works on his loom, and in the past sixty years he has produced some of the masterpieces in Kani shawls of our time.

Abdul was born in 1876 in a family of hereditary Kani weavers at Kanihoma (Gulmarg district), and showed a keen awareness of his heritage in his early years. The spark of interest was kindled by his father, Abdul Gaffar, who was a renowned weaver. Heredity and environment nourished the interest of the young weaver. As an apprentice he showed such an aptitude for learning the techniques of Kani weaving, that his father often marvelled at the deftness of his young fingers as they picked out and completed the contours that had only been outlined to him.

Apprenticeship in those days entailed a long and arduous period of more than ten years, during which the apprentice was expected to learn the essential technicalities of the craft by watching the master at work. Any practical work was confined to the tedious task of completing the routine patterns that the master would lay out. But Abdul Qadir got over this routine very soon and was seen working side by side with his father, and often even independently.

After four years of initial apprenticeship, Qadir convinced his father that he had learnt the basic principles and techniques of shawl weaving. Not satisfied with the routine patterns and designs, the young man aspired to have a thorough knowledge of the decorative designing, especially the traditional ones, whose very intricacy had persuaded many craftsmen to take up work of lesser skill.

The next phase of his apprenticeship was spent under the late Ahmed Sheik, one of the great exponents of the traditional Kani weaving. Qadir acquired thoroughness in weaving the intricate designs directly on to a shawl piece. By an amazing sense of colour and composition he left the impress of his personality on every piece of work that he executed.

Although he was trained in the traditional designing, Qadir infuses every piece of work with a freshness and modernity without losing the classicism of tradition.

Abdul Qadir is not only an expert weaver. As a member of the staff of the School of Designs of the All-India Handicrafts Board, he has evolved simple methods of producing and manufacturing all the components of the complicated looms which are specially used for weaving Kani shawls.

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