ELEVENTH YEAR 13 JULY 9, 1967

YOJANA

25 PAISE

Waters of hope for Bihar

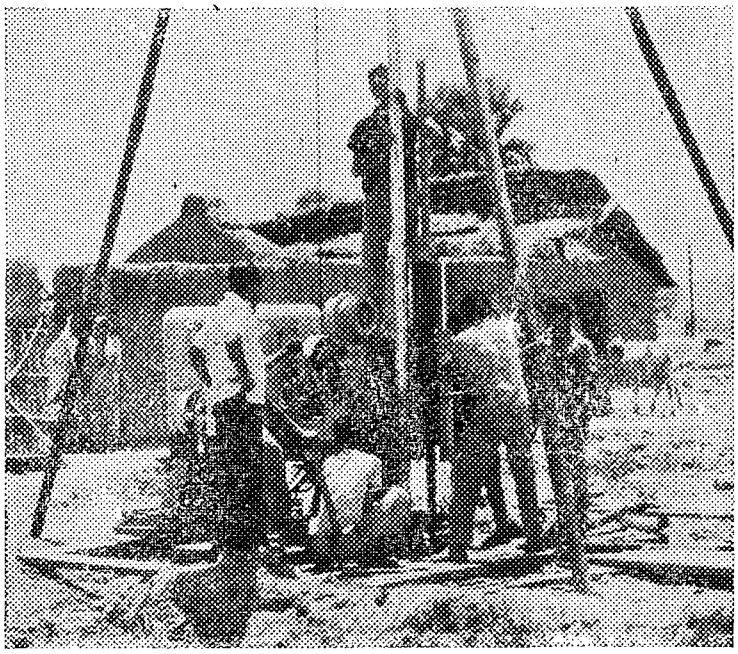
MEN, women and children in more than 48,000 of the 67,665 inhabited villages of Bihar are living in grim conditions of famine. In over 32,200 villages, the 1966 winter paddy yield was 25 per cent and under of normal yield while in about 15,800 villages, it was between 26 per cent and 50 per cent. Drought has deprived some three million agricultural labourers and seven million cultivators, most of them petty farmers, of the fruits of their labour. This has added to the burden of rural indebtedness.

Bihar's foodgrain production in a normal year is 7.3 million tonnes, leaving a deficit of 1.3 million tonnes. The deficit for 1967 is estimated to be 5.6 million tonnes. In spite of the Central Government's assistance, per capita foodgrain availability in affected areas is 227 gm. a day as against the all India average of 408 gm.

Last year's drought, the worst in more than hundred years and the second in succession, has brought in its train untold suffering and misery to the people of Bihar. With surface wells, tanks and rivers drying up, water for even drinking has become scarce. In about 18,000 villages with a total population of 10.6 million, water shortage is acute.

The long hot summer will further deplenish parched soil, denude drying vegetation and continue to dry up surface water resources. Hope is pinned on the next monsoon.

In the meanwhile a massive programme has been undertaken to meet the special situation. The programme aims at establishing at least one dependable source of drinking water supply in each village or a group of villages within 1.5 kilometre s radius. Where this is not possible water carrier services are being organised. The plan is to provide nine litres of water per head per day. While the target is modest the task is by no means simple. Minor irrigation works, apart from the emergency water supply scheme, are also being executed.



Seen in the picture is a Longyear drill, model "34", lowering pipes after a successful strike. The Government of Bihar acquired 12 Longyear drills for water-well drilling.

Cattle share the plight of man in Bihar's famine.

'Kutcha' wells and manually and mechanically bored tubewells are being developed almost round the clock to provide drinking water resources.

The Government of Bihar has pressed into service several drilling machines acquired on priority basis for drilling tubewells. The State Government's efforts are being supplemented by the operating crew and drilling equipment made available by the Geological Survey of India, the National Coal Development Corporation, the Indian Institute of Technology, Kharagpur and the Indian Army. Church organisations abroad and other international agencies, too, are rendering assistance to tide over the crisis.

In this hour of Bihar's need no effort is too great and no help too small. So contribute your mite in service, money or material. Whatever your contribution, collectively it will help mitigate the sufferings of our fellow-countrymen in this State. The Prime Minister's Drought Relief Fund, Cabinet Secretariat, Rashtrapati Bhavan, New Delhi, will channel contributions in cash and kind for relief operations in hapless and hungry Bihar.

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THE QUIET PLAN

IN these very noisy times, the quiet Colombo Plan does not make many headlines. On July 1, it completed its 17th year. The Colombo Plan cannot claim anything spectacular by way of achievement; it has set up no prestigious projects in any of the countries that have benefited from its aid programme. In one particular sphere, however, the Colombo Plan has done what many other forums of international collaboration have generally lagged behind. It has functioned as a really multi-channel agency of economic and technological collaboration. Aid has come not merely from the advanced countries, but also from the relatively less advanced, and India has given more assistance through the Colombo Plan than any other international agency.

Started in 1950 with only countries within the Commonwealth, the Colombo Plan now covers as many as 23. Many of these are outside the Commonwealth, not merely advanced nations like the U.S. and Japan, but also others like Indonesia, Laos, Afghanistan, South Korea and Cambodia. Ideologies have not stood in the way to membership, although no Communist country has yet joined. At present the Colombo Plan covers an area of 3½ million square miles, and more than a fourth of the human family. Originally meant to wind up in 1957, its life has been successively extended, and is now to continue until 1971.

Aid to south and south-east Asia under the Colombo Plan has touched the 20 billion dollar mark in the 17 years of its operation. Although this is not a negligible figure, aid per country has had to be relatively small. If it has still proved to be useful this is because the aid has been carefully channeled to fill up specific, though limited, gaps in national economies. The area where the Colombo Plan has concentrated its attention is that of technical training. India herself has trained 3,167 persons from member countries under the Colombo Plan and has sent out 95 technical experts. During the years 1964-66, India contributed equipment for a sector of the Mekong River Project, apart from offering training places and experts. Development assistance under the Colombo Plan has come mostly from the advanced countries like Britain, the US, Canada, Australia, New Zealand and Japan; India too has played a modest role by giving a loan of one crore rupees to Nepal and extending budgetary support to Bhutan whose membership of the Plan she had herself sponsored. Some of the development projects fathered or highlighted by the Colombo Plan have since been adopted by larger international agencies like the ECAFE. The Mekong River Project and the Asian Development Bank, for example. One of its major quiet achievements is the successful persuasion of Japan to play an increasingly significant role in Asia's economic development.

Normally social questions trouble us much less than political issues. There ought to be in our country an informed debate and discussion on the long-term socio-economic and ethical aspects of family planning, on the question of raising the wedding age of girls. Perhaps many of us think that the ancient Indian society is capable of absorbing all the shocks of change and still retain its changeless character; that, in Indian society the old order changeth yielding place to the old. That is not so.

IN THIS ISSUE, *Yojana* once again tries to go deep into the family planning movement. Dr S. Chandrasekhar, Minister for Health and Family Planning, answers, in the course of an exclusive interview, some of the questions raised and doubts expressed by Dr G.C.Hallen, a distinguished social scientist. Dr Chandrasekhar also spells out the main features of India's population policy.

Also, in this issue is a comprehensive report on the progress made during the last 15 years in the field of education.

As you turn the Pages

A National Anti-Natalist Population Policy

"We Are In A Great Hurry!"

Every night is a nightmare until the explosion is checked

AREAS OF LIGHT & DARKNESS

On page 7 is an article by an eminent social scientist, Dr. G.C. Hallen, raising a number of questions and doubts about our current family planning policy and programme. Some of these doubts and questions have been answered by Dr S. Chandrasekhar in his interview with *Yojana*. This interview has, therefore, to be read along with Dr Hallen's article. Together, they make a positive contribution to conceptual and programmatic aspects of Indian family planning.

AT ONCE. Today, tomorrow and the day after. And at a high pace, over a long time, every day until our targets are achieved.

This was the time schedule and the sense of urgency of the national family planning programme that was spelt out to *Yojana* by Dr. S. Chandrasekhar, Union Minister for Health & Family Planning, in the course of an exclusive interview in New Delhi last week. "You cannot wait for a night. One exposure lasting five minutes leads to a baby, and every year India adds one Australia to its population."

The main purpose of the interview was to make Dr. Chandrasekhar "think aloud" over the larger and deeper socio-economic and ethical aspects of the family planning programme. An internationally-reputed expert on the population problem, Dr. Chandrasekhar readily attacked

India is the only country where family planning is a national movement backed by Government and a broad countrywide consensus.

Sample surveys show that sixtysix per cent of our married people want to plan the birth of children.

the many difficulties which confront the family planning drive—not merely difficulties of transport, communication, illiteracy and mass poverty, but also the numerous points of resistance in the ancient and heterogeneous Indian society, social mores, habits, customs, conventions, caste relationships and prejudices, religion and social behaviour.

Of all these problems and difficulties the Minister in charge of Family Planning was fully aware. But he was also aware of the many positive factors which inspire hope and confidence about the success of the family planning drive. He was not in the least inclined to minimise the problems and obstacles; at the same time, he was convinced that the very urgency of the problem and the large-scale awareness all over the country of the need for family planning would generate the kind of dynamism that is necessary to make it a success.

Dr. Chandrasekhar likened the family planning drive to our effort to build a successful social democracy. "Just as we are trying to build a successful social democracy without the normal pre-conditions—a literate, socially-aware population and a high level of industrial development—so are we trying to bring about a social revolution without the necessary pre-conditions," he said. He looked upon family planning as the most important and far-reaching instrument of the much-needed and long-awaited Indian social revolution. For, family planning implied the regeneration and awakening of India's womanhood; it implied a self-determined responsibility about the size of the family and its proper up-bringing; and it also implied a new kind of relationship between husband and wife, and between parents and children.

What were the positive factors inspiring hope and confidence about the success of the family planning drive? In the first place, there was a broad consensus all over the country, except small pockets of dissent, about the urgent necessity for bringing the population explosion under control. All political parties agreed that this is a 'must' if we were to keep the fruits of our sweat and tears for the benefit of our people. Intellectuals all over the country accepted family planning as an essential condition of civilised life. Many religious organisations had offered to support the family planning drive.

Secondly, India is the only country where family planning has been taken up in all seriousness by the Government at the Federal, State and Municipal levels. Most family planning programmes in the advanced countries of the West started as unofficial agitations, whereas in India it is a national movement backed by the entire official machinery.

Thirdly, family planning is one programme which has evoked sympathy and generosity in all countries which are involved in India's economic progress. This sympathy is as evident in the United States as in the Soviet Union and even in a small country like Sweden.

In support of his belief that family planning had the acceptance of the majority of the Indian people, whether they lived in the cities or in the villages, Dr. Chandrasekhar referred to some 20 surveys undertaken in the last 25 years, a number of them by himself, covering people in towns and villages and of low and high income

groups. These surveys revealed that 66% of the samples were in favour of family planning for economic as well as health reasons.

Awareness, however, was still to be created in many Indian villages far removed from centres of modern life. Even amongst people where there was an awareness, it had to be converted into a strong sense of motivation and family planning devices had to be reached to all couples all over the country. At the same time, through a massive education drive spread over a fairly long period, women had to be taught the basic lessons of sex. What was more important was to bring as much of the huge middle class women force in the country into the labour force and labour in this context meant something other than the pangs of child birth.

Money is no longer the main problem. Dr. Chandrasekhar said, "The Government of India, the Prime Minister, the Finance Minister, in their wisdom, in their knowledge that this problem is perhaps as important and pressing as the food problem, have allotted a considerable amount of money for family planning." But other resources were in very short supply. Vehicles, trained woman doctors, an army of educated and devoted workers who would go to the villages and work round the clock. "We want to rush information to each and every door, if possible. But we have transportation difficulties. We have problems of communication in the largest sense of the term. Then there is the problem of accessibility. There are hundreds of villages in India which do not have all-weather roads and basic health services. We have to cover all these things and we are in a hurry, because the biggest factor in family planning is time, or lack of time. Time is of the greatest essence."

Dr. Chandrasekhar said, "We have to convey to the workers all along the line, from the Family Planning Ministry in New Delhi down to the primary health centre in a distant, remote village, a sense of dedication. This is the first part of the job we have to do. To make family planning a success you need doctors and other staff and a clinic within walking distance of villages. If a villager comes to the clinic and the doctor or the nurse tells him, "The key has been misplaced, come tomorrow, what is the hurry?" that person is a criminal—he or she may be anywhere, from the Health Minister down to the Village Health Worker."

There were many points of resistance in Indian society to family planning and it was the task of the family planning workers and the enlightened public to wear them down. In the first place, there was the general apathy—reluctance to change a certain habit of life which had been going on for a long time. There was the belief in certain quarters that a baby was a gift of God and that the purpose of marriage was to procreate. In certain village families decision-making rested more with the grandfather or the grandmother or the mother-in-law than with the couple concerned. Tribal societies had their own norms of behaviour resistance.

None of these, however, was unconquerable, believed Dr. Chandrasekhar. "Many of our social mores could, by and large, be overcome when we have created in our women an awareness to understand this problem. Social scientists are today in a position to alter people's behaviour pattern."

Dr. Chandrasekhar agreed fully that in the long-term family planning programme there must be anthropological, sociological, economic, psychological and demographic studies to outline and highlight the areas and sources of resistance. It was his desire to enlist the support of as large a number of our social scientists, economists, creative writers, journalists and makers and moulders of public opinion as possible not merely for deeper long-term studies related to family planning but also to build up a countrywide motivation, a climate for smaller and healthier families.

Family planning is an instrument of social transformation ; it aims at creating better parents, healthier children, happier homes; it seeks to inject social responsibility into married life.

Was religion a source of resistance to family planning? In a way, yes: but in a rather limited way, said Dr Chandrasekhar. "I have found that family planning is resorted to by people of a certain income, certain sophistication, irrespective of their religion. The rich, educated, sophisticated Hindus, Muslims and Christians know the importance of having a small family, whereas the uneducated, illiterate and custom-bound Hindus, Muslims and Christians do not resort to family planning because they do not understand the population problem even in terms of their own families." So it wasn't a question of religion but of social backwardness.

He thought it was entirely baseless to apprehend that family planning would seriously alter the religion-wise population ratio in India, although he knew that this fear lingered in certain circles. "I think the Hindus need not get alarmed that the minorities are not practising family planning. Actually my talks with people convince me that Muslims are increasingly taking to family planning. Let us not forget that Pakistan has an ambitious family planning drive and Egypt has set up a Population Commission. In fact, the religious teachers of Egypt have issued a *firman* that the Quran has nothing to say against family planning." Dr Chandrasekhar referred to the very enlightened family planning law the Government of Maharashtra was contemplating to adopt; it would apply to all religious communities including Muslims, and its author was Dr Rafiq Zakaria, the able Maharashtra Minister in charge of Family Planning. It was significant that the Urdu Press had welcomed this proposed legislation. There were a large number of Catholics all over the world who practised family planning in one form or another.

Dr Chandrasekhar attached the utmost importance to the evolution of a new Indian womanhood—women fully aware of their social and individual responsibility and gradually emancipated from many of the customs and traditions which tell upon their health, incessant child-bearing being one of them. *He would like sex education to be introduced in our high and secondary schools, and girls to be taught the elementary lessons in sex at the age of 12. In fact, the Family Planning Ministry had already sought the assistance of the Education Minister in the preparation of a series of textbooks designed for children from the age of 10.* These textbooks should be included in the social studies curriculum of our schools. Dr Chandrasekhar would like a series of pamphlets to be written in the simplest possible language telling the citizen about the nature and the dimension of the population problem, how it affects the individual family and what the father or the mother can do to solve it. He would like these pamphlets to be beautifully illustrated.

His anxiety to increase the marriageable age of girls to 20 sprang from his belief in bettering the social status of Indian women and investing them with a higher degree of social responsibility. He knew very well that such things could not be done by legislation alone. It was difficult, if not impossible, in Indian society to prove the age of a girl. But a law would help in building up suitable public opinion and act as a deterrent to underage marriages. What was necessary was that a girl was not brought into motherhood before she knew the responsibilities of a mother, before she, on her own, wanted to have a baby. In order to create the necessary climate for better and more responsible womanhood, there should be institutions for women in our villages to teach hygiene, sanitation, domestic science and other subjects which are relevant to our life, which would make a girl a good wife, a good mother and a good citizen, which would create for our young women opportunities for work. The majority of our middle class women did not do any work except housekeeping and, "most of them sleep in the afternoon." If this womanhood could be drawn into productive labour, even in part-time jobs, it would act as a deterrent to having more children.

Would a countrywide family planning campaign and sex education not lead to sexual promiscuity?

Dr Chandrasekhar said he was aware that some people thought that the propagation of family planning or birth control would lead to easier moral virtues, but this fear, he was convinced, was baseless. In any case, "the abuse by a minority of a socially desirable cause is not an argument against the cause itself".

Family planning means women freed from the deadweight of outworn customs; a new social and personal morality.

Would family planning lead to an imbalance in the sex ratio of the people? "The imbalance of sex", said Dr Chandrasekhar, "is a matter of accident because, in spite of all the progress we have made, we still do not know how to fix the sex of a baby." It was many of the social mores in India which upset the natural balance of sex—female mortality is greater in India than in most other countries because many of our girl babies die in the first year of their life and many women die in the course of child birth.

India, Dr Chandrasekhar declared, has now a well-considered population policy. It is an anti-natalist population policy, in constrast with the pro-natalist policy adopted, for example, in France and Western Germany after the Second World War.

India's anti-natalist population policy not only enjoyed the broad support of the entire country but was also based on substantial groundwork. All the necessary data were available with the census organisations spread all over the country. A great deal of research work had already been done both under official and non-official auspices. Eventually, there might be a Population Commission but the work had to begin right now in great earnest. Fortunately, it was possible for India to take decisions on the basis of a considerable wealth of scientific data.

The present family planning programme was based on an array of sombre facts. Our total population today is about 515 million. More than 50,000 babies are born every day. Our population increases every year by about 12.5 million people. In the next 30 years we run the risk of doubling our present population—to a thousand million ! Our population is increasing at the rate of 2.5% per year. About 20 million babies are born every year. Every year there are about 8 million deaths. Our birth rate now is about 40 to 42 per thousand every year. The target is to reduce this to 25 per thousand in the next ten years.

There are a little over 100 million couples in India today. About 90 million couples are in the age group 15-45, the reproductive period. Of these, 40 million have four or more children and 14 million have three children. Thus, 56 million couples have three or more children. The remaining 34 million couples have one or two children.

Briefly put, the family planning target is to persuade as many of these 56 million couples as possible to undergo sterilisation. The remaining 34 million couples have to be persuaded to pace out and postpone the arrival of the second or the third child for the next two or three years.

Dr Chandrasekhar said that he would consider it to be a great success if at the end of the next ten years our population growth could be stabilised at 7 million per year. That would be a saving of 5 million per year from the present rate of growth.

SOME DOUBTS RAISED and QUESTIONS ASKED

G. C. HALLEN

A NATIONAL POPULATION POLICY TO BE EVOLVED BY A NATIONAL POPULATION COMMISSION

THE total expenditure on family planning programme in India during 1961-62 was Rs 138.35 lakh; next year it rose to Rs 268.46 lakh; and during 1964-65 to Rs 605.2 lakh. Till the end of 1964-65, a total of Rs 1,409.15 lakh was reported to have been spent on such programmes by the Centre and States.[1] During 1965-66, an amount of Rs 1,170.85 lakh was reported to have been spent on such programmes (including foreign exchange involvement of several lakhs). In the Fourth Plan (draft), an additional allocation of Rs 145 crore was made for such programmes. The total amount now allocated under this heading is Rs. 240 crore, which was the figure recommended by the Family Planning Evaluation Committee in July 1966. This is nine times the amount allocated under the Third Plan.[2] These figures clearly indicate the colossal amount which is being spent on a project whose full sociological implications in terms of national gain and social welfare have not been fully taken into account.

Family planning essentially means teaching people lessons in planned parenthood. It entails a moral obligation on married individuals to put a voluntary check on the birth of unwanted children in their families. But, a close look at the current family planning drive in India clearly gives the impression that it is more in the nature of "birth-control".

Such an impression carries support from the fact that consequent to the drive, by the end of the Third Plan period, 2.3 million had adopted "birth-control" in one of its various forms. It is estimated that two millions would undergo sterilisation and there would be two million loop insertions during the current year. Efforts are reported to be made to cover another two million people for the use of contraceptives. It is, thus, proposed to carry the message of "family planning....to about 90 million couples of reproductive age, the bulk of them in rural areas. The target to spread the loop is envisaged at the rate of 6 million persons a year.[3] An IUCD factory has already been set up at Kanpur which turns out 30,000 loops a day.[4] The objective is to ensure 90 million IUCD insertions and 3.45 million sterilisation operations by the end of 1971.[5] According to "preferred

projections" made by family planning experts, 16 women in a thousand should be wearing the loop by 1968-69, 33 in 1973-74 and 50 in 1978-79.[6]

The latest policy decision to arrive in the family planning van is the announcement of cash incentives for those who persuade married couples to come to clinics. The incentives are reported to have been introduced to double the number of loop users and vasectomy cases as soon as possible.[7] Still farther, the Government of India is contemplating suitable changes in the existing provision of the Indian Penal Code for liberalising "abortions",[8] perhaps following the example of Japan. But, this method, which has been so effective in Japan, has its dangers in India. Abortion, if permitted on a larger scale, may impair the mother's health. It might not only destroy the sanctity of life, but might undermine the parental attachment for children.

SOCIOLOGISTS, ECONOMISTS, EDUCATIONISTS MUST TAKE UP INTEGRATED STUDIES OF LONG-TERM ASPECTS OF FAMILY PLANNING.

WHY FAMILY PLANNING

The shortage of land, low rate of savings, rapid increase in the labour force, equality and dignity of man, and the overall demands of economic growth, especially increase in the per capita income, are stated to be the reasons for accelerating the present campaign for family planning in India. The Fourth Plan (Draft) observes that "even far reaching changes in social and economic fields will not lead to a better life unless population growth is controlled". It is pointed out that the rapid increase in population is absorbing a great proportion of the economic development which is taking place. Our food problem is also accentuated because of this reason.[9] The economic burden of the breadwinner who has a large family is also serious. It becomes difficult for the parents to feed, to clothe and to educate well a large number of children.[10] In the same vein, it is asserted that all our progress would be like writing on sand with the waves of population growth washing away all that we have written.[11] During the first three Plans, it is observed, more than half of the 3.8 per cent growth of the total national income was swallowed up by the increase in population. At this rate, it would take India somewhere around 200 years to achieve the standard of living enjoyed today by Western Europe. If the Government's target of cutting down the population growth rate to 1 per cent is achieved, a 5 per cent growth rate of total national income would enable India to achieve this level in 70 to 80 years. A child born today would then be able to hope for something more than the bare necessities of life by the time he dies.[12]

The greatest argument in favour of the need of family planning is advanced in view of the current rates of high population growth.[13] Young and more fecund people predominate the population of the country (47.9%)[14], which means that population numbers are likely to increase at an even higher rate than in the past. On the basis of the present trend of demographic experience, India's population during 1961-91 is estimated to be 555 million in 1971, 719 in 1981 and 952 in 1991, thus recording an increase of 233 million over 1961.[15]

Thus it is emphasised by the advocates of family planning that India is at present in the dynamic state of progress, the social conditions obtaining in India have to be readjusted with the changed situations, which can consequently make birth control suit the new pattern of living; and this can bring an adaptive fertility for securing in India the economy of reproduction, and thereby can relieve the present heavy population pressure.[16]

It is also pointed out that apart from the problem of economic development and social welfare of a country as a whole, the health and well-being of individual families, the mothers, and the children are also of great concern. Many child-births and the care of a large family are an immense strain on a woman, and may endanger her health and even her life. About two-thirds of all deaths among women in the reproductive ages in India are from causes connected with pregnancy and child-birth.[17] Perhaps, on this ground the core of the entire Indian policy of "birth control" is said to rest on the twin pillars of health and welfare. The First Plan put it as: "The main appeal for family planning is based on considerations of the health and welfare of the family. Family limitation or spacing of the children is necessary and desirable in order to secure a better life for the mother and better care and upbringing of children." Likewise the Third Plan pleaded for "the integration of family planning with the normal medical and health centres". The approach in the Fourth Plan is mostly clinical so far, in spite of the veiled attempt to inject some sociological thinking: "The programme involves various aspects of community life and social behaviour of the people." But we must take adequate stock of our performance in this field so far.

FAMILY PLANNING SCORE

An attitudinal study conducted by Panda and Kanungo of the Indian Institute of Management, Calcutta, observed that most of the projects so far undertaken have not been successful in disseminating family planning information and providing clinical facilities both in urban and rural communities.[18] It has been found that "there is a universal desire on the part of the people to restrict the size of the family but the motivation to translate the desire into practice is rather weak".[19]

In a paper presented at the U.N. World Population Conference in Belgrade, it was observed that even after more than 10 years of exposure to family planning programmes, the results of some of the recent surveys briefly reported in the Press, are highly disconcerting, and they call for a re-examination of the psychological and cultural environment. A recent survey in a village in Madras, the paper pointed out, revealed the astounding fact that only about a quarter of the couples expressed themselves in favour of family planning, while the remaining were indifferent or against. The results of a study in West Bengal showed that about 54% of the women interviewed, disapproved of family planning because of their conservative social outlook. The study further revealed thtat as many as 65% of the couples who practise family planning do so

for economic motives. An earlier study in Calcutta has also indicated that most of the few couples who practised contraception did so because of adverse economic pressures.[20]

An interim assessment of family planning efforts have disclosed certain interesting facts. On the one hand, it has been found that family planning is not only necessary but physically and financially feasible on a national scale. On the other hand, whatever resistance to the idea of spacing children is there, it is the least in the expected quarters. In far-flung villages where it was feared that the conservation of the rural population would hamper progress of the scheme, both the idea of family planning and the various devices to promote it were warmly welcomed. Perhaps there is a lesson in this, one pertaining to misjudgement at the sociological level.[21]

The misjudgement at the sociological level or failure to take sociological aspects of the problem into full

consideration may be taken to be the root of the failure of family planning drive. Frank Lorimor rightly observed at the *World Population Conference* (1954) that "one of the major defects in our present knowledge about the determinants and consequences of population trends is inadequate understanding of their social aspects."[22] He considered this situation as very serious as its neglect was likely to invalidate programmes for economic development and cause unforeseen evils. According to him, the fall in our birth rate requires not only external changes such as environmental factors, housing conditions, and medical facilities, but also fundamental changes in the society as a whole. Evidently, our family planning drive so far did not seek to bring about such a transformation.

It may be further observed that as a sociological phenomenon, reproductive behaviour is greatly affected by habits, customs and the cultural outlook of the people. In India, it is still very true today that every man is ultimately bound by ties of social duties to his fellow beings, irrespective of his educational standard, level of living and outlook of life. Also, religion affects the thought and actions of large sections of people. N.S. Balasubramanian, in a study of sociological aspects of birth rates in India, has significantly drawn our attention to the fact that "the basic reason for the high rate of population growth in India is not only the consequences of drastic and sudden decline in death rate during the last decade but also and mainly the sociological background"[23]. Universality of marriage, the joint family and the existence of caste are some of the important characteristics of Indian civilisation and social organisation. Indian culture regards marriage as not merely a question of bodies but also of minds; marriage moulds everything in life.[24] Again, children are universally desired in India. Life and sex are seen as a whole and as natural.

The programme also failed to produce desired results for reasons of the religious and cultural setting of an heterogenous population having not been fully weighed. In this connection, it may be recalled that the problem of high fertility and its relation to social and religious environment of rural India appears to be as lively as was found in 1931-41 census period. Figures taken from census dating from 1891 to 1941 show that the Muslims have consistently had a higher child-women ratio than the Hindus. They have been substantially above all-India average whereas the Hindus have been slightly below it. The religious differentials also demonstrate the role of non-marriage in controlling the Indian birth rate. The superiority of Muslim and Tribal fertility over the Hindu is due in part to their greater toleration of widow remarriage. [25] Again, it may be observed that "the Hindus apparently have a low fertility compared to Animists, Sikhs, Christians and Muslims. This low fertility is due partly to the high proportion of widows in the Hindu population—a proportion that is higher than for any other religious group except the Jains. At the same time, however, due to young age at marriage of the Hindus, fewer of their women (15-39) are single than in any other group except the Jains". It is also noteworthy that while the Hindus shows 817 children of 0-4 ages per 1000 married women as the average value over census year 1911-21-31, the Muslims had correspondingly 900 per 1000 married women. Maximum figure in this respect was registered by the Tribals (1923) and they were followed in succession by the Christians (966), Sikhs (960) and Buddhists (932). Minimum figure found among the Parsis (735) was preceded alone by the figure for the Jains (804) who, in turn, ranked just below the Hindus.

In regard to these observations of the level of fertility in various religious groupings, it is also noteworthy that all these favour a large number of offsprings for one reason or the other. The belief of the Christians is that all laws of God are written in the hearts of all men. "Increase and multiply and fill the Earth, (*Genesis 9:2*) are the key words of the Lord and any action against His will is regarded as heretical in Christianity. Christianity, especially of the Roman Catholic group, consider birth prevention as 'a gamble and a death trap' and 'a reliable and efficient gravedigger'[27]. Like the Indian Christians, Indian Muslims too share almost the same views. The Muslims give strong and unequivocal emphasis to high fertility, and Mohammedan social structures universally support high fertility. Again, orthodox Muslims view the primary purpose of human life as the procreation of new life. Mohammed the Prophet is said to have remarked, " Marry and generate". Among the Muslims their women must be specially richly fruitful.[28]

It is also noteworthy that in India, scheduled castes and scheduled tribes (males and females) together account for about one-fourth of the all-India male/female population. These scheduled tribes and castes, of which 86.6 per cent come from rural areas, do not at all favour any voluntary restriction on the birth of children.[29]

It is also true that Indian tradition of large families tends even today to perpetuate the customs of early marriage, abundant child-bearing, and a high rate of population growth.[30] Therefore it seems imperative for our planners that they should have treated reproductive

practices of the people of different socio-cultural groups of India in reference to the total social structure within which these practices are operative.[31]

EXPERIENCE OF OTHER COUNTRIES

Russia began with a policy of birth control and legalised abortions as purely a private affair. But soon it was reversed and we find today large families encouraged and medals given to mothers of large families. The total sum payable to the mother of a large family is as follows: for the fourth child 257 roubles, for the fifth 373 roubles, for the sixth 436 roubles, for the seventh and eighth 605 roubles each, for the ninth 775 roubles, for the eleventh and subsequent children 970 roubles each.[32] In France, family allowance for each additional child after the first have been in force for decades now. But the size of the families is not growing in spite of such monetary incentives. England cannot produce more than a quarter of the food she needs. She does not, on that account, like us, expand birth control facilities at public cost to limit the size of her population, the rate not being enough to replace the present numbers over the decades. England, therefore, followed France in instituting family allowances to encourage large families. Nearly 6 million allowances are being paid in Great Britain to about 3¾ million families with two or more children and over a quarter of a million in Northern Iceland to 118,000 families.[33] In Germany, new family laws were passed in December 1965 which aimed at promoting happy family life. The law which became effective with effect from April 1966, ensured equality between husband and wife and granted illegitimate children full legal equality.[34]

It is true that our population has increased enormously and is increasing at a faster rate of growth. But if we look into the rice yield per acre in Japan and China, we shall see that it is thrice to four times our rate per acre. Now if we increase our rate by half in some five or ten years, we can keep agricultural production ahead of the growth of population.

Significantly enough, while we are making fervent appeals to normal people to subject themselves to a course of treatment which at least could only render them eunuchs, the medical profession as a whole in the U.S.A. has been slow to accept birth control as a routine practice "probably from a sense of moral responsibility for the future of the American stock". Again in the United States, the most important field for the public birth control efforts may be seen only among the women on public aid (ADC). Some of these are widows and others are divorcees, deserted women or unmarried mothers.[35] Also the relatively low birth rate reported in the United States is little short of miraculous, and a tribute to the responsibility and persistence of individual couples, rather than to governments, voluntary organisations or physicians. It is being occasionally pointed out that there is an ambience about birth control in most of the rich nations.

The experience of Europe shows that the stimulus to control population was other than poverty. There was a clash between new opportunities and large families. Economic growth opened up new ways of gaining wealth, new means of rising socially, new symbols of status, to take advantage of which the individual and his children required education, special skills, capital and mobility. To avoid the threat of large families to their socio-economic position, individuals tended to postpone or avoid marriage and to limit reproduction. The main force was not hunger, but the desire of the people to preserve or improve their social standing.[36]

SOME SIGNIFICANT IMPLICATIONS

The planners will do well to realise that "family planning" through any of the professed devices involves a complex and crude synthesis of life-patterns, values and the bio-psychological structure of a given society. Therefore in order to comprehend its delicate and subtle mechanism, it is necessary that we develop a social science in India, known as the *Sociology of Population*. We are presenting here some of the important sociological implications of the problem for the serious attention of all concerned, especially the planners.

In the first instance, it may be significantly observed that the use of contraceptives or options for sterilisations or vasectomy, in order to yield spectacular results in the drive for "birth control" directly implicates the cultural values of a society. Such efforts primarily necessitate a change in the mental outlook of the people towards life, mind and matter, Self and God, fellow-beings and community, one's own offsprings and the family, and so on. It would be a grave mistake to think that adoption of birth control measures are only related to reducing birth rate in a country, to reducing pressure of population on land and to alleviating economic hardship of the people. To be more blunt, adoption of artificial methods of birth control, devoid of any moral or ethical considerations, is to place a high premium on the materialistic conception of culture rather than on preserving the spiritual basis of a society.

Secondly, 'birth control' measures seek to create imbalances in the sex-composition of our population. Mr S. Chandrasekhar, the noted Indian demographer, has rightly warned recently of an imbalance in the sex composition of the children of couples taking to contraception—57 per cent males and 43 per cent females according to a research carried out in Korea—and observed that such imbalances, if they become widespread, were likely to have repercussions on such fundamental characteristics related to family formation as opportunities for marriage and age differences between spouses.[38]

WHAT ARE THE ANTICIPATABLE EFFECTS OF "BIRTH CONTROL" ON SOCIAL, INDIVIDUAL MORALS, FAMILY LIFE, EMOTIONAL LIFE OF PEOPLE, AND ON THE INDIAN STOCK?

Thirdly, there is a great danger, rather a real danger, that the widespread adoption of contraceptives or option for sterilisations may destroy the spiritual basis of our "family". Essentially, family is a primary school for the integrated growth of individual personality—a nursery for the development of a 'social person'. Once the walls of the 'traditional' family are rocked to their foundations, the resulting individual personality will find it difficult to bear the shocks of the atomic age and to make due social adjustment. Also it will lead to the growth of unrestricted individualism and encourage the habit of shirking parenthood. These, in turn, have their own social dangers.

Fourthly, the family planning campaign, successfully carried out, will change the social and demographic complexion of our population. We shall then have more of licentious youths, delinquent boys and sex-hungry people than disciplined soldiers and sophisticated intellectuals. Every public place would be turned into a sex-den; even schools and colleges be turned into skating halls, ball rooms and twist-floors. Our youths "will become rudderless boats controlled only by the minds of their environment.'[39]

Fifthly, it is also noteworthy that once the habit of limiting family through the use of birth-control measures is formed, it will lay the surest foundations of a civilisation in which most people remain largely starved of parental emotions and be only too willing to drift into war, conflict and competition. Such a civilisation, better characterised as a "sick civilisation", would ever remain on the brink of incessant excitation and rarely enjoy equanimity, internal peace, and stability of social order. Consequently, we shall find ourselves, like millions of Americans today, racing along a primrose path of wrecked marriages, free love, and blatant sexiness, similar to that which proceeded the decline and fall of ancient Rome.[40]

Sixthly, if it is admitted that motive determines the outcome of any concerted action or programme, then, it may be said that for a majority of people, recourse to the adoption of 'birth control' devices is most often motivated by a desire for more unhampered pleasure, resulting in the avoidance of responsibility attendant upon a family of children. This avoidance of responsibility in the family sphere may lead to avoidance of responsibility in all walks of public life. Under such circumstances, public morality will become a myth.

SOME GUIDELINES

Even assuming that India is able to reduce her current high rate of about 42 per thousand, by say 1980 (which seems unlikely, unless the present approach is infused with a sense of dynamism), it is estimated that the population would still continue to grow at the rate of 7 million per annum.[41] Moreover, it is also held by such eminent economists as Colin Clark and Everett Hagen[42] that a large and a growing population is nearly always advantageous to a developing country like India. The transition theory of population also seems to be fully applicable in India's case which does not presage any alarm.[43] What is needed is a well-conceived scientific population policy for India, which takes full account of all the social, economic, demographic, cultural and physical factors.

A drive towards family planning may well form an integral part of such a scientific policy of population for India. But the connotation of "family planning" should be clearly understood and permeate the whole campaign. In fact, people should be convinced in the far-flung villages, particularly those of small means and limited resources, that they should plan the size of their families (not only birth of children) in accordance with their economic resources and productive capacities of wealth. Thus, promotion of family welfare, through proper counselling and reorganisation of family life into small but integrated units, should occupy a prominent place in the entire campaign of family planning.

As far as the policy of birth control is concerned, instead of laying too much emphasis on the use of contraceptives and other artificial devices, emphasis should be laid on teaching people the value of *self-control* and inducement to the practice of *brahmacharya.*

The crux of the population problem lies in the poverty of the country. Concentrated and more effective ways of finding a square meal for every one is of paramount necessity. Fecundity grows on poverty and adoption of higher standard of life reduces the size of the family. Therefore, a good deal of the population problem can be solved by exploiting all possible natural resources of the country. The fact cannot be denied that India possesses a vast amount of natural resources which have not been tapped so far.

Sooner or later, India will have to adopt the ideal of the small family system which did exist in the past, in order to prevent the appalling waste of life now apparent on all sides. But it is only true that without a voluntary check on the size of the family all the remedies will tend to be only temporary, the reason being that the population will again rise to the maximum number of persons the land can support, upset the established man-land ratio, and reduce the population's health and living standard.[44] Insufficient output of foodgrains has to be countered by other natural economic means without upsetting natural biological processes by State action.

It is high time now that the Union Government appoints a Population Commission like the Royal Commission on Population in England, manned by demographers, economists, sociologists, medical authorities and social reformers. The six-point programme to promote and disseminate information on family planning, announced recently by the Swedish Government, may also be usefully emulated. Relevant to the Indian situation, some of the implications of this announcement are that the organ responsible for executing family planning programmes should : (i) undertake sociological studies of the social, cultural and religious factors that influence attitudes towards family planning; (ii) act as a centre of coordination for the exchange of research results and knowledge concerning family planning; (iii) introduce education on human reproduction and family planning on the curriculum of every educational project; (iv) work out and publish model text books on these matters for use in schools at different levels in countries at different stages of social and economic development; and (v) guarantee that the same education also be introduced in educational programmes for women and adults.

Radhakamal Mukerjee has suggested that towards evolving a scientific population policy for India, migration and populati n problems should be considered as bound up with each other for their solution and the solution should be sought internationally in the interest of world peace. The two-fold complementary programme of birth control and 'open door' adopted by the contrasted regions of the earth from the stand-

DR. HALLEN AGREES THAT INDIANS MUST HAVE PLANNED, SMALL FAMILIES, BUT DOES NOT BELIEVE THAT THE OBJECTIVE CAN BE ATTAINED BY A MASSIVE MEASURE OF BIRTH CONTROL ALONE.

point of the welfare of the international economic community would alone accelerate the trend towards world optimum population and productivity.[45]

Research scholars would do well to undertake serious investigation into the various sociological implications, some of which have been pointed out in this paper. In particular, attempts should be made to measure inter and intra attitudes between married, widowed and unmarried members of a family, as also the impact of the family planning drive on the social, cultural and religious beliefs of the people in different layers of Indian social structure.

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It is interesting to compare these targets with that of Pakistan where the latest five year plan calls for a 20% reduction of the birth-rate by means of 10 million insertions of intrauterine devices at a cost of $ 2.00 (14 $) per insertion; Tunisia where 120,000 insertions are planned by the end of 1967; Korea and Turkey where 200,000 and half a million respectively insertions are planned. It is pointed out that these are "jet-age" programmes unhaunted by moral and technological ghosts of earlier times. Cf. J. Mayone Stycos, (Director, International Population Programme, Cornell University, Ithaca, New York); "Birth Control: The Restrictions of the Western Approach" The Lancet, *Dec. 11, 1965, p. 1231.*

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THIS INDIA

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

On the occasion of inaugurating the new building of a P.W.D. Office, the Executive Engineer asked the office to put up a list of the Press in the town. The section clerk, with the help of his friends and peons in the office, collected the names of all printing presses in the town. The engineer ordered in the file: "Seen. Send invitations to all of them to cover the function."

Palghat *E. Vasu*

I was standing at the Money Order counter of a local post office on a Saturday when a friend of mine, a head constable, came there with a man decently dressed. The way that man was handled by my friend was a little irksome to me.

The man in the decent attire was asked to present the M.O. form in his hand at the counter. A hundred rupee note plus the M.O. commission were remitted across the counter. The man was allowed to leave the place after obtaining the receipt.

I asked the friend why he was so harsh to the man. He said, the man was a notorious pickpocket. My friend had seen the man suspiciously loitering near the post office. On interrogation, the man was found to be possessing a hundred rupee note along with an M.O. form duly filled in. My friend's suspicion was strengthened. The suspect tried to explain away that he wanted to send the money to his mother. My friend would not leave him so easily. He insisted that the M.O. be sent immediately and in his very presence. The man found himself helpless and came to the post office.

Before I could question my friend's propriety in forcing a suspect to do something in his presence, we saw an old man coming out of the post office quite bewildered. Seeing my friend in the police uniform, the old man complained that a few minutes ago he had lost a hundred rupee note with a duly filled-in M.O. form while he was engaged in withdrawing some money at the Savings Bank counter.

N. Balasubramanyan
Tiruchirapalli

Call it fate or what you like.

My graduate sister had been seeking a job for one year, with little success. Most of her applications did not receive any reply. The few responses she got were for interviews that always ended in a courteous 'we'll let you know soon'.

While matters stood thus, our aged father passed away suddenly. The same day a letter came from a commercial concern calling my sister for an interview the same evening.

She, of course, could not accept the call while she was in mourning. She informed the firm accordingly.

A fortnight later, another call came from the same company. My sister went and was straightway selected for the job. Her salary, believe it or not, was the exact amount that our father received as his Government pension till his last day.

Janaki Srinivasaraghavan
Berhampur (Orissa)

It happened some seven years ago.

My father was bed-ridden for over a year. I was working in New Delhi while he and other members of the family lived nearly two thousand miles away in Kerala. His prolonged illness had drained out all our financial resources and we were struggling hard to make both ends meet.

Suddenly one day I received a telegram about his death and I rushed home. I knew my mother would find it extremely difficult to arrange for the funeral according to the Hindu rites since the death had come at the time of extreme financial stringency. But on my reaching home I found that they had managed the funeral with the little savings my father had collected during his illness. Nobody except one of my sisters knew about the savings and my father had taken a promise from her never to divulge the secret as long as he was alive.

And, incredible as it may seem, the funeral expenses totalled up to Rs. 70, exactly the sum which was secretly saved by my father.

Cochin *Vessen*

China's H-BOMB

NOBODY in the world any longer minimises China's advance along the road to full nuclear status. The explosion of the hydrogen bomb in the area over western China on June 17 came six months to a year *before* it was expected in the United States and other countries. China has taken less time than any other country to develop thermonuclear weapons from atomic weapons. She has now overtaken France.

The science correspondent of the *Sunday Times* believes that the most urgent question now is: how soon will China be able to develop a missile capable of carrying a heavy thermonuclear warhead? China already has a missile suitable for an atomic warhead. It was used in the atomic test of October 1956.

A year and a half ago the American Defence Secretary, Mr McNamara, predicted that China would have intercontinental missiles for hydrogen bomb warheads by 1975. The *Sunday Times* science correspondent says that "to judge by the speed at which the Chinese have developed their H-bomb, even this estimate will have to be revised".

For the science correspondent of *The Observer*, the main question is whether "it is a weapon or a device"? The United States has been concentrating on a transportable and compact weapon. "The evidence is that the Americans embarked on their giant space rockets because they doubted if small hydrogen warheads could be built. Both America and Russia have now produced much smaller warheads, but the Chinese will need several years to develop to reach the same stage."

The Observer correspondent has raised the other factor about China's nuclear programme which has mystified many people—the source of her nuclear explosives. "Western experts have been sceptical that the Chinese can yet possess a plant for separating Uranium 235, essential for efficient warheads. The alternative explosive produced in nuclear reactors, Plutonium, may not be suitable for detonating hydrogen weapons, and, in any case, the capacity of Chinese reactors is quite inadequate to accumulate a military stockpile at present."

From the official announcement on June 17 it seemed that the Chinese programme is still for a relatively small number of nuclear and hydrogen bombs and a modest stockpile of warheads. So little is known about the Chinese aeronautical industry that it is nobody's guess whether there has been substantial progress in building up an effective delivery system. But the speed of China's nuclear activity — the first bomb on October 16, 1964, the second in May 1965 and three in the course of 1966—has led to speculation in certain quarters that China may send up a spacecraft some time next year.

Girls Elbow Out Boys

"GIRLS outnumber boys for college admission", was the headline in a New Delhi newspaper reporting the first day's registration by students seeking admission to colleges affiliated to Delhi University. In fact, the authorities in Delhi have been finding it difficult to admit all the aspiring girl students to university courses. This phenomenon is not confined to Delhi alone;the big boom in women's education creates a new set of problems for India's developing society. In Delhi, nobody seems to be thinking in terms of running double shifts in some of the existing colleges, as is the case in certain colleges in Calcutta — a morning shift for girls and a day shift for boys; this may solve the problem of accommodation, but it creates other socio-educational problems which are not easy to tackle. Therefore the easiest thing to do is to open a few new girls' colleges every year, and this is what is being done in Delhi as well as in other parts of the country.

IGNORAMAN

Wants to Know

Why we can't adopt

a policy of

Mutual Non-Malignment

While higher education for girls is most desirable, by far the majority of our girls get into college because they have nothing else to do, and because a degree is an essential qualification for marriage. In certain cases where we have created opportunities for professional training for girls, there is often a disconcerting gap between the number of passes every year and the job opportunities available. The Delhi Polytechnic for girls, for example, takes about 40 students for interior decoration every year, while just about half of them are in a position to get suitable jobs. This is, however, not so in disciplines like medicine, teaching, nursing, library science and office administration. The rub lies in the fact that only a very small percentage of girls seeking university education entertain ideas of working.

This applies even to many of the girls who come in the merit lists of students. A surprisingly large number of girls appear to excel in university examinations thus elbowing out the boys in youth's first competition for excellence. Whether it is in the B.A. (Hons) or premedical exams, boys seem to be steadily losing ground to girls. This should stimulate sociological studies, if the decline of the male in exams is not to be taken as a perfectly normal consequence of our educational and examination system. It should also be useful to find out how many of the girls placed in the first division take to gainful work. Will the Social Sciences Department of Delhi University undertake a survey?

A NATIONAL EDUCATION

SYSTEM TAKES SHAPE

Fruits of Planning

FACILITIES available for education on the eve of Independence were woefully inadequate for a country of India's size and population. Of the total population, only 8.2 per cent were receiving education of any kind, of whom about two-thirds were boys. Only 35%, 9% and 3.8% of children of the age-group 6-11, 11-14 and 14-17, respectively, attended schools. There were only 212,000 students in arts and science colleges, and 44,000 in professional and technical colleges. Only 17% of the total population was literate. The rural areas were neglected. So was women's education. Very few children belonging to the scheduled castes and scheduled tribes went to school. The curriculum did not fit the new needs of a free democratic society aiming at rapid social and economic development; Facilities for teaching of science nad technical subjects were extremely limited. Similarly, facilities for post-graduate education and research needed to be expanded and higher education had to be related to high level manpower needs.

During the fifteen years of development that followed, phenomenal expansion of facilities took place at all levels as indicated in the table below.

It will be seen that 44 million additional children were brought to school in 15 years. Enrolment at the university level increased three-fold, and in technical education, more than eight-fold at the diploma level and more than six-fold at the degree level. The number of adult literates increased in 10 years from 1951 to 1961 by 45 million. A significant rise has been registered in the enrolment of girls. While in 1950-51 they formed 28.1, 17.0, 16.4 and 11.1 per cent of the total enrolment at the primary, middle, secondary and university stage, respectively, in 1966, these percentages rose to 35.3, 26.0, 21.3 and 21.0. Facilities for schooling in rural areas have been vastly extended. There is now a primary school in every village with a population of 500. As a consequence, the percentage of children from rural areas attending educational institutions, especially at the high school and college stages, has been going up rapidly. The number of children of Scheduled Castes, Scheduled Tribes and other backward classes going to school has also increased significantly.

MIDDAY MEALS

A notable achievement is the provision of mid-day meals on a large scale. By the end of the Third Plan 9 *millon children were served a mid-day meal every day of the week*. This has been made possible by large-scale mobilisation of community effort, and has played a key role in taking education to many poor homes.

Apart from expanding educational facilities and correcting quantitative imbalances, there has been a systematic attempt to reorganise the system and enrich its content so as to meet the needs of trained manpower. The Radhakrishnan Commission on University Education and the Mudaliar Commission on Secondary Education provided the guidelines for future development in these sectors. The Central Advisory Board of Education, the All-India Council for Technical Education and other consultative bodies helped in the formulation of policies for the reconstruction of the educational system. In October 1964, another Commission was set up under the Chairmanship of Dr. D.S. Kothari to review the progress of education in all sectors and prepare the blue-print for a comprehensive development of education embracing all aspects.

Following the recommendations of the Mudaliar Commission about 6,000 high schools were upgraded to the higher secondary pattern. These schools provide better physical facilities and have more qualified teachers. Several measures have been taken to improve the teaching of science. Multi-purpose schools have been set up to provide instruction in fields like agriculture, commerce, home science and technical subjects, besides humanities and science. The number of such schools is already about 3,600. Mention may also be made of Junior Technical Schools, 104 in number, which provide, in addition to general education, facilities for imparting technical education to students in the age group 14-17.

RESEARCH AND TRAINING

In order to bring about a speedy and smooth transformation of the

Expansion of Facilities during 1951—66

Stage and Age-group	1950—51 (Actuals)	1965—66 (likely achievement)
Primary (6—11)/Classes I—V		
Enrolment (millions)	19.15	51.45
Percentage of age-group	42.6	78.5
Middle (11—14)/Classes VI—VIII		
Enrolment (millions)	3.12	10.54
Percentage of age-group	12.7	30.9
Secondary (14—17)/Classes IX—XI		
Enrolment (millions)	1.22	5.51
Percentage of age-group	5.3	18.0
University Education (17—23)		
Enrolment (millions)	0.36	1.17
Percentage of age-group	0.7	1.9
Technical Education (Admission Capacity)		
Diploma (thousands)	5.90	49.90
Degree (thousands)	4.12	24.70

BIG BOOM IN EDUCATION

educational system, it was considered necessary to set up a national organisation which could undertake research into problems thrown up in the process of development and also organise training of key personnel to take charge of the educational projects. Thus, the National Council for Educational Research and Training was established. The Council has set up the National Institute of Education with 11 departments dealing with basic education, curriculum and evaluation, teacher education, science education, social education, audio-visual education, extension services and so on. The Central Science Workshop of the Council fabricates prototypes of science apparatus and equipment. In addition, the Council has undertaken a large programme of production of text-books and general reading material for school students. The Council also runs four regional colleges, which provide special facilities for the training of secondary teachers of science, mathematics, English, agriculture, commerce and technical subjects. The Council organises a science talent search programme, and in collaboration with the University Grants Commission, arranges Summer Institutes for in-service training of science and mathematics teachers. Similar institutions have been established in the States to provide professional guidance. These are: Institutes of Education, Institutes of Science Education, Bureaux of Educational and Vocational Guidance and State Evaluation Units.

UNIVERSITY EDUCATION

The most important single event in the field of university education has been the setting up of the University Grants Commission to improve and co-ordinate the standards of higher education. Since its inception in 1956, the Commission has spent Rs 64 crore to improve facilities for higher education in the country. The Commission has assisted the Universities and constituent colleges to improve their library and laboratory facilities. It has also given financial assistance to the universities to improve the pay-scales of teachers with a view to attracting bright young persons to the profession. Forty-three universities and 705 colleges have agreed already to implement the revised scales of pay, benefiting about 17,000 teachers.

VAST NUMBERS GO TO SCHOOL

An important programme undertaken by the University Grants Commission for upgrading the professional competence of teachers is the organisation of Summer Institutes. The Commission has given financial assistance for introducing the 3-year degree course as recommended by the Radhakrishnan Commission. The new pattern has been adopted by all universities except the State universities of U.P. and the Bombay University.

Another noteworthy development is the setting up of 26 Centres of Advanced Study in selected university departments. These Centres are intended to encourage the pursuit of excellence and provide facilities for post-graduate and research of a high standard. Liberal scholarships and fellowships have been provided for research students. Assistance has also been given to provide hostels, book-banks and other amenities for students. Facilities have also been provided for evening colleges and correspondence courses to enable employed persons to improve their qualifications. A number of review committees were set up by the University Grants Commission to examine the existing syllabi and facilities for teaching and research in various subjects of study and to make suggestions for their improvement and modernisation.

Fourteen Rural Institutes were set up in different parts of the country to offer facilities to the rural youth to acquire training and skills which would make them effective leaders of the rural community. These Institutes offer courses of one to three years' duration in subjects like rural economics, rural sociology, civil and rural engineering, agricultural science and so on.

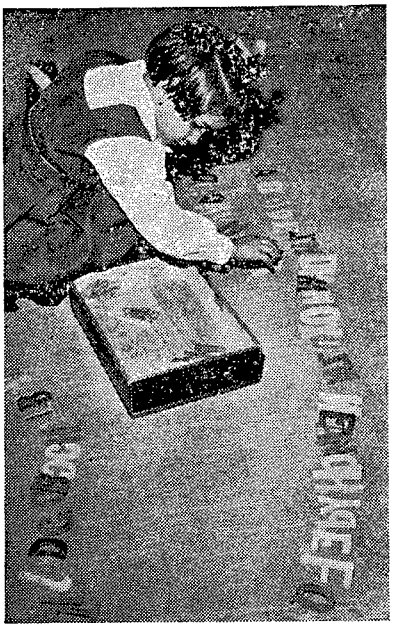
TEACHER EDUCATION

With the rapid expansion of school education, the number of school teachers increased from 7,50,000 in 1950-51 to about 2 million in 1965-66. The number of trained teachers during the same period increased from 4,30,000 to 1.4 million, raising the percentage of trained teachers from 57 to 70. The number of teacher training institutions for elementary teachers has increased from 649 in 1946-47 to about 1,350 in 1965 with an annual intake capacity of about 103,890. At the secondary stage, the number of training colleges has risen from 41 in 1947 to

more than 268 with an annual intake capacity of about 26,000. About 25 training colleges have facilities for M.Ed. and Ph.D. courses. Such facilities hardly existed before Independence.

STRESS ON TRAINED TEACHERS

Extension Services Departments have been set up in about 100 secondary training colleges to organise in-service training courses for the benefit of secondary teachers. To impart training in the teaching of English and to prepare textbooks and other teaching aids, the Central Institute of English was set up in Hyderabad. Some State Governments have set up similar institutes at the State level. As noted earlier, there has been an improvement in the educational qualifications of teachers. The percentage of graduate/post-graduate teachers increased from 7.8 in 1950-51 to 14.6 in 1965-66 and during the same period the proportion of intermediate and matriculate teachers increased from 18.9 per cent to 46.1 per cent. A big programme of Summer Institutes for school and college teachers organised jointly by the U.G.C. and the N.C.E.R.T. has been initiated. These Institutes seek to upgrade the knowledge of science and mathematics teachers and acquaint them with the latest technique of teaching these subjects.



Several steps have been taken to improve the service conditions and emoluments of school teachers. In most States pay scales of teachers have been revised. Efforts have also been made to introduce common scales of pay for teachers doing similar work under different types of management. The triple-benefit scheme, providing for pension, provident fund and insurance, has been introduced in a number of States and in all Union Territories. To recognise the service of able and devoted teachers, a system of National and State Awards to teachers has been introduced. The Union Government has also instituted a special scheme for scholarships for teachers' children at the post-matriculation stage.

TECHNICAL EDUCATION

There has been great expansion of facilities for study of engineering and technology during the last fifteen years. The number of technical institutions at degree and diploma levels has increased from 135 in 1950-51 to 434 in 1965-66. The corresponding increase in the admission capacity has been from 10,000 students to 75,000 and the out-turn from 4,700 graduates and diploma holders to 28,300. At the level of post-graduate education and research, about 2,260 places have been approved in 45 institutions, thus providing higher education facilities for 20 per cent of the annual out-turn at the first degree level in engineering and technology. In addition, facilities have been created, either in separate institutions or in existing ones, for the study of specialised branches of engineering, keeping in view the likely demand for technical manpower in the different fields.

The five Institutes of Technology, at Kharagpur, Madras, Kanpur, Bombay and Delhi were established during this period. Fourteen Regional Colleges have also been set up to act as pace-setting institutions

SCHOLARSHIPS FOR THOUSANDS

in the States.

The facilities for technical education are reviewed from time to time to ensure that the out-turn of technical personnel in different branches of study keeps balance with the demand for economic development plans.

Facilities have been created in a few selected institutes for advanced studies at the highest level so as to promote growth of indigenous technology in relation to national needs. Also, new facilities have been organised for mining, petroleum technology, industrial engineering, architecture, printing technology and aeronautical engineering. Among the new institutes set up for specialised studies are the School of Planning and Architecture, New Delhi; Regional Schools of Printing at Calcutta, Allahabad, Bombay and Madras; Institutes of Management at Calcutta and Ahmedabad; the National Institute for Training in Industrial Engineering, Bombay; the National Institute of Foundry and Forge Technology at Ranchi; and the School of Paper Technology at Saharanpur.

EMPHASIS ON TECHNICAL EDUCATION

For training of teachers for engineering colleges, about 200 fellowships are offered every year to bright young graduates. A teachers' training centre is being organised at the Regional Engineering College, Warangal, where it is proposed to introduce a programme of courses and seminars in developing course outlines, methods of instruction, uses of equipment, laboratory manuals, teaching aids, laboratory layouts and educational tests and measures. Four regional centres are being set up for training teachers for polytechnics in addition to two set up at Karad and Hyderabad.

The expansion already effected has brought us to a stage where the facilities so far created and specially at the degree level, are likely to take care of our needs for the next 5 to 10 years. For diploma courses, a sufficiently wide base has been created so that any unforeseen demand can be met by appropriate adjustments in the existing institutions. With this advantage to start with, the Fourth Plan emphasises consolidation of facilities created so that these could be made a potent instrument for providing improved technical education.

Scholarships constitute an important means of equalising opportunities and encouraging talent. Expenditure on scholarships and stipends for students has been increasing steadily from year to year. It rose from Rs 2.75 crore in 1950-51 to Rs 20 crore in 1960-61 and is estimated to have gone up to Rs 35 crore in 1965-66. Scholarship holders at the end of the Third Plan are estimated to form about 18% of the enrolment at the post-matric stage, including technical education institutions.

The various scholarship schemes include the National Scholarship Scheme and the National Loan Scholarship Scheme. There is a large provision for scholarships to Scheduled Caste and Scheduled Tribe students at the post-matriculation level

FACILITIES FOR HIGHER STUDIES & SPECIALISATION

so that almost every eligible candidate belonging gets it. These students can continue their studies up to the university level. There are special scholarships for teachers' children and there are merit scholarships to enable poor children to enter Public Schools and other residential schools. Scholarships are granted to young workers in cultural fields. In addition, India participates in many programmes for exchange of scholars with other countries.

The most important events have been the setting up of a Commission for Scientific and Technical Terminology, a Central Institute for the Training of Hindi Teachers at Agra and the establishment of the Central Sanskrit Institute at Tirupati. There are schemes for developing basic vocabulary, translations, preparation of dictionaries, reform of script, scholarships, and training of teachers.

Many programmes for promotion of physical education have also been executed. The main achievements in this field have been the establishment of the Laxmibai College at Gwalior, the National Institute of

Sports at Patiala, the Mountaineering Institutes at Darjeeling and Manali, the launching of the National Physical Efficiency Drive, the organisation of labour and Social Service Camps and Campus Works Projects.

The percentage of literacy in India in 1950-51 was 17 and this increased to 24 in 1960-61 and was likely to be about 30 in 1965-66. The number of literates in 1950-51 was 59 million and this rose to 105 million in 1960-61 and was likely to be 147 million in 1965-66. The stock of educated people with matricultion qualification and above increased from 3.8 million in 1950-51 to 8.3 million in 1960-61 and was likely to be about 12 to 13 million in 1965-66.

ANNUAL PLAN 1966-67

During 1966-67, in spite of the Indo-Pakistan conflict of September 1965, and drought conditions which prevailed in several parts of the country it is estimated that an additional enrolment of nearly 40 lakhs has taken place in schools as indicated :

Additional Enrolment in 1966-67

	(in lakhs)		
Classes I-V age-group (6-11)	*Total* 23.80	*Boys* 12.41	*Girls* 11.39
Classes VI-VIII age-group (11-14)	10.17	5.94	4.23
Classes VIII-XI age-group (14-17)	5.44	3.61	1.83

Expenditure on educational development excluding medical and agricultural education and craftsman training has increased from Rs 149 crore in the First Plan (1951-56) to Rs 275 crore in the Second Plan (1956-61) and to about Rs 600 crore in the Third Plan (1961-66). As a result of the development expenditure for education in the first three Plans, the total expenditure on education in the country (including normal and non-government expenditure) has increased from Rs 114 crore in 1951-52 to about Rs. 600 crore in 1965-66. In terms of percentage of the national income educational expenditure had increased from 1.2 in 1950 to 3.0 in 1965-66.

YOJANA BHAVAN DIARY

The Planning Commission met on June 28 to consider the States' annual Plan for 1967-68, and on June 29 to review the production and export targets of tea under the Fourth Plan.

Among the distinguished visitors to Mr. Asoka Mehta were Mr. R.W. Blucke, Director, International Operations, Honewell, U.S.A. and Mr. Lelyveld, New York Times, (June 19 and 27).

The annual general body meeting of the Planning Commission Club was held on June 24. The results of the election of the executive committee of the Club, conducted on June 21, 1967, have been announced.

The office bearers for the year 1967-68 are: Mr. K.A.P. Stevenson (President), Mr. Ram Saran Das (Vice-President), Dr. (Miss) Champa Aphale (Secretary), Mr. Anirudh Prasad (Jt. Secretary, Sports), Dr (Miss) Champa Aphale (Jt. Secretary, culture) and Mr. Karnail Singh, Mr. S.K. Singh, Mr. Zila Singh, Mr. Anirudh Prasad, Mr. V.P. Luthra, Mr Amar Singh and Mr Darshan Kumar Issar (all members).

YOUNG India

CLASS ROOM

Or

GLASS ROOM ?

S. LALL

IN India there is a growing lack of communication between the student community and the academic authorities as also public men who have to interpret to the new generation the meaning of the new, free, equal and democratic society. The new society is essentially for the new generation to shape and mould. An interchange of ideas and experience between academic authorities, public men and the student community should go a long way to divert the latter's energy into creative channels.

It is felt that universities and colleges have not been able so far to adapt themselves adequately to the changing needs of the time. We have to see what kind of structural changes our higher education must undergo to meet the social and political forces emerging in the country.

The Radhakrishnan Commission recommended that the "Universities must enable the country to attain, in as short a time as possible, freedom from want, disease and ignorance", and added, "if our living standards are to be raised, a radical change of spirit is essential". What was the radical change it envisaged? "We must have a conception of the social order for which we are educating our youth. Our educational system must find its guiding principles in the aims of the social order for which it prepares, in the nature of the civilisation it hopes to build." Since we are engaged in a quest for democracy through the realisation of justice, liberty, equality and fraternity, it is necessary that the pattern of education imparted in the country at all levels should reflect these new urges.

FIELD WORK SHOULD BE MUST FOR ALL COLLEGE STUDENTS; SO ALSO MEMBERSHIP OF PLANNING FORUMS

The Kothari Commission has recommended that "social and national service should be made obligatory for all students at all stages. These programmes should be organised concurrently with academic studies in schools and colleges.... At the undergraduate stage, social service for 60 days in total (to be done in one or more stretches) should be obligatory for all students. Every educational institution should try to develop a programme of social and community service of its own in which all its students would be suitably involved for periods indicated above.

The existing official machinery is not at present equipped to give detailed attention to all stages of development whether due to paucity of talent or time or due to insufficiency of properly trained staff. This weakness can be mitigated to a great extent if the educational institutions, especially colleges and universities, lend a helping hand. There are about 66 universities, 9 institutions which are deemed to be universities and 2579 colleges and as may as 84,676 teachers in the country at present. Their number is increasing every year. The intelli-

gentsia in these institutions can make a useful contribution to the planning and execution of development programmes, particularly those relating to the areas where they are located.

All students of the universities and colleges should spend a prescribed number of hours per week in some field work, a scheme which should operate concurrently with the student's class room curriculum. The amount of time spent in field work can be determined by the authorities. But some amount of time is vitally necessary for the student to do social work, guiding people in rural areas, make the people Plan conscious, to investigate and help solve their problems, organise Plan information centres, conduct literacy classes, adopt group of villages for sustained development work and construct roads, bridges and bunds.

Social education can be imparted through field work experience in villages or local areas surrounding an educational institution. The process of accumulating knowledge without any field work experience to match it and connect it with real problems of people living in our cities and villages would produce a limited type of professional person severely handicapped in doing useful service to the community upon completion of his or her training. A modicum of field work is to be considered in the present context as an essential ingredient of modern Indian education.

To be really effective, however, field work needs to be closely integrated with the theoretical aspect. Students of agriculture, engineering, medical and veterinary courses can certainly benefit from regular contact with the villages. The student needs to see for himself the results in the fields of practical application of his theoretical knowledge, its scope and limitations. In spite of differences in the development of professional education in India and the world, there is a growing recognition of the universality of basic educational concepts. These concepts are evolving out of the experience of social work education leaders throughout the world.

There are four essential elements in well-rounded education for professional work in India.

First of all, education should provide opportunities for students to develop as much insight as possible into human growth and behaviour. This implies a knowledge of physical, intellectual and psychological development of individuals. In order to work with people in practical life, we need to understand them. This also includes knowledge of their social organisation, culture, economic life and the various forces which shape society. Opportunities for learning such things are not limited to the class room but are found in rich abundance in the practical field.

Secondly, education should impart knowledge to understand organisational problems, such as administration, welfare services, administration of non-governmental social welfare services and of planning machinery at various levels. Again, field work offers students opportunities to broaden their knowledge in this area.

Thirdly, education should provide opportunities to develop skills to work with people. This can be achieved by research studies, investigation and planning of local schemes, preparation of town and city development plans, participation in constructive work by institutional adoption of villages or slum areas for welfare extension work, and training of local voluntary workers for community development and welfare activities. Much of the knowledge needed in this area is taught in the class room but field work offers again the enriching experience that comes from directly working with people.

Fourthly, education helps the student to acquire a social philosophy incorporating the principles of respect for persons, freedom to participate in decision-making, recognition of spiritual values in life. By direct contact in field work, with people presenting all type of problems, the student has the opportunity for testing out and developing such a social philosophy.

Field work is, therefore, an integral part of all types of education, whether it is economics, sociology, agriculture, engineering or medicine. By joint use of class and field experience, the student who completes his training at the university or college is better equipped to face the problems that await him in his working life.

Planning Forums are designed to meet the needs of field work orientation for students. During the First and Second Plan periods, the Forums discussed problems of economic planning and offered valuable suggestions. They were also engaging in Plan study and Plan publicity. During the Third Plan period the Forums identified themselves more closely with implementation of Plan programmes; they undertook voluntary work during the vacations and even week-ends. Much of the valuable work done by members of the Forums has not been publicised. Many Forums have constructed roads and bunds, renovated tanks, collected money and clothes for refugees, organised adult literacy classes for the poor and distributed old books, slates and pencils to poor children.

Till now membership is voluntary. If membership is made obligatory and the district and State authorities provide the necessary facilities, the students can play a magnificent role in the development of the country.

KRISHI PANDIT

Mr. Pundalik Mahadu Rajput of Savade village in Dhulia district of Maharashtra has been awarded the certificate of Krishi Pandit for 1966 season. He won the first prize in the first all-India crop competition in wheat. He obtained a yield of 2,680 kilogrammes per acre.

In Himachal Pradesh, a progressive farmer of Bhuntar village in Kulu district has set up a new record of wheat production in hill areas. He harvested 37.20 quintals per acre of a high-yielding variety. The earlier record was 35 quintals an acre.

The Agricultural University at Habbal in Mysore State has developed new high yielding varieties of paddy, dwarf *bajra* and *ragi*.

The paddy variety was first evolved in the Philippines and has been tested in Indian conditions. It gives 30 per cent more yield and matures in 125-135 days. The dwarf *bajra* takes 90 days. All the new varieties are disease-resistant.

CROP PATTERN IN NEWLY IRRIGATED AREAS

Advance research on size of the holding, terminal system, rate of return on investment and supply of inputs and credit can help reduce the lag between building irrigation potential and its utilisation.

RAM PATIL

THE crop pattern in newly irrigated areas is determined by the water requirements and the value of crop output. Water needs have to be assessed in designing the canal and distributory capacities and the extent of the area to be irrigated. The value of output will help in cost/benefit analysis.

Besides these two, there are other factors which are also equally vital. Among them are: size of the holding, tenurial system, profitability (or rate of return), risk element (which can be put in terms of probability), supply of inputs and credit requirements, switchover problems involved in the change of crop pattern (that is, problems connected with rotation, cultural practices and pest control), marketing facilities and the existence or possibility of establishing processing industries.

Crop planning will also have to take into account the fodder and foodstuff needs of the dairy cattle and the poultry farms, if these are envisaged in the command area. In fact, they ought to be built in into the programme instead of leaving them to the free play of economic forces. It is hardly necessary to make out a case for augmenting the supply of protective foods (milk, meat and eggs) both for rural as well as urban population. It is in the interest of the farming community as well to develop them because they bring ready cash and make possible the use of crop residues which, otherwise, would go waste. The cattle and the poultry are also a source of organic manure. Adequate attention has to be paid to all these factors in laying down the crop pattern.

The pattern, either in irrigated or unirrigated areas, is largely dependent in our country on climate, rainfall, soil conditions and the relative price structure.

Irrigation makes the problem of crop pattern more intricate as it widens the choice of crops by releasing the water constraint imposed by nature.

On some of these traditionally recognised factors, not much detailed work has been done. Thus soil analysis has not been carried out in detail in the irrigable command of any project. Demonstration-cum-experimental farms should be in the command zone at least two years before water is released from the dam. It is also necessary that the farms be worked as far as possible under conditions which are likely to be created once the canal system comes into existence, that is, conditions of water delivery and rotation. If necessary, wells will have to be dug in the neighbourhood of demonstration farms or *nalas* diverted in order to simulate the irrigation system. Irrigation practices developed under these conditions will surely inspire confidence in cultivators and speed up their use of water.

At the moment, the Government has no instrument to impose (or induce the farmers to adopt) the desired crop pattern except that of rice. Experience shows that the effects of such a policy have been extremely weak, save in areas where sugarcane was recommended and where the local peasantry was financially strong to undertake the effort.

Size of Holding

Size of the holding is an important factor affecting crop planning in irrigated areas. An individual farmer's crop pattern is mainly influenced by the size of his holding, his capacity for financing the agricultural operations, his needs for foodgrains, fodder and cash, marketing and transport facilities and cost-price structure of competing crops. It is quite logical for a cultivating family owning three or four acres to grow foodgrains on its holding or part of it even though cash crops, such as sugarcane, groundnut and cotton, would bring a higher return. They take to cash crops only where marketing facilities give the farmer a guarantee of stable price.

But great economies are possible if a large block of farm land is treated as a unit. This can be achieved by forming joint farming societies, or by having an institutional arrangement whereby the key decisions—crop pattern and water delivery—are taken at a single level and are binding on the members. These cannot be left to the veto of individuals. If the cropping pattern is left to the sweet will of individual farmers the result will be scattered patches of irrigated area with a variety of crop patterns. Marketing of small quantities of diverse crops would then become a problem. Also, an optimum crop pattern adopted by individual farmers may not result in an optimum crop pattern for the village or for the region as a whole.

The tenurial system also affects the motivational aspects of the farmer's behaviour. Recently, very

sophisticated attempts were made to show that the adoption of new methods is in the interest of tenants even in cases where the produce is divided between the landlord and the tenant, in 60:40 proportion. While granting its inherent logic, it is relevant to note that human motivation is not *only* in terms of economic gains and losses. If this is so, how can one explain the behaviour of some owners of wastelands ploughing the area once in three years (at a loss) for fear that the land, if left fallow, may be given to the aspiring landless cultivators under the existing legislation in a few States? The moral is clear: the objective criterion of a cultivator (or of various forces governing his behaviour) is composed of diverse elements. Sometimes the effects of habit, tradition and social institution outweigh those of economic gains.

Further a farmer would not adopt a crop pattern which promises him a high rate of return, but the probability of which is around 0.5 to 0.6 in preference to a low return crop pattern where the probability is as high as 0.8 to 0.9. In other words, a low but sure return is preferable to an uncertain high return. This principle is all the more attractive to the Indian farmer who is guided by an inexperienced extension service and who has to work in a scarcity-ridden economy where supplies of pesticides and fertilisers are not available in adequate quantities let alone in time. Under these circumstances, a probability function has to be postulated for formulating the objective criterion.

Finally, the cost and finance consideration play a significant role. It may be easy to show that sugarcane cultivation brings a high return, or that the better cultural practices lead to an increase in yield; yet the farmer will not emulate these examples as he has no money or the capacity to undertake the extra costs. Studies conducted in the underutilisation of irrigation potential in different States have brought this point in clear relief. Suitable policies will have to be devised to overcome this bottleneck.

A more rational and quickly adjustable agricultural crop planning can be undertaken in the newly irrigated areas only on the basis of intensive research on these factors. It would reduce the time between creation of irrigation potential and its eventual utilisation.

FOOD AS BAIT FOR FAMILY PLANNING

I have come across a news item in a weekly that the Madhya Pradesh Government is giving 15 kg. of additional foodgrain to those who undergo vasectomy. This inducement might help the family planning programme considerably, in a country which is short of food. In this context one should not be surprised to find instances of old men who are no longer fertile getting themselves operated.

Shivpuri — *G.S. Dushe*

Who Builds OUR NEW TOWNS And How ?

H. N. PANDIT

IT is a long journey from Harappa to Chandigarh — former, a well-planned Indian town of the third millenium before Christ, and the latter, a modern one built in the second half of the twentieth century. It marks the development of town planning in the country. Indians were among the few pioneers in town planning. They built big cities through the ages. Along with the towns excellent literature on town planning also grew quite early in our history. The most famous among these works, written mostly during the Gupta period, are the *Manasara Shilpa Shastra* and the *Kamikagama Shilpa Shastra.*

The modern phase of town planning began in the middle of the nineteenth century in most countries of the world, when the spurt of industrial activities led to a phenomenal growth of cities attended by problems of over-crowding, transport bottlenecks, poor environmental hygiene and many social evils. The need for plans that would remedy these ills was expressed in the writings of modern pioneers like Patric Geddes, Ebenezer Howard and Le Corbusier, to name only a few. Soon it was generally accepted that a town planner should aim mainly at functional utility, replacing the old criterion of aesthetic values. The new towns should create conditions for a more harmonious existence of its inhabitants by providing facilities for living, work and recreation.

India felt the impact of industrialisation much later, and her cities remained almost unaffected by the problems of urbanisation. The only development which had taken place under British rule was the building of a few towns of certain new categories such as cantonments, railway junction towns and hill stations,—New Delhi, built by Sir Edwen Lutyens as the capital city of India, had a notable new enterprise in its planning.

Although the years 1914 and 1915 marked the beginning of an awakening, the concept of modern town planning was to go through a long period of incubation in India until the Five Year Plans gave expression to it through various projects: The Plans also clarified national objectives in this regard by identifying and highlighting urban problems and formulating policies to solve them. Meanwhile a wave of new ideas had come from the western countries, particularly Great Britain, after the Second World War. While the need for correcting the drawbacks in the old patterns of towns and cities was not underestimated, the new trend put great emphasis on a balanced development of entire regions comprising small towns and rural areas along with the big metropolitan cities. Cities and towns, it was pointed out, could not be developed in isolation. The small market town amidst rural surroundings was to link the village population and their agriculture with marketing channels for their produce, thus helping rural economy. Further the small market towns would remain as agglomerations around a bigger town, and the bigger towns, which are themselves the centres of zones with a number of smaller towns and villages, would form part of an entire region led by a metropolitan city.

The new concept derived its validity from the fact that it discovered the organic link between the biggest city and a village on the outer fringe of the region. It also contained a solution of the problem of imbalance caused by uneven urbanisation in various parts of a country or a region. Besides, it provided the means to reverse the trend of rural population rushing to cities.

Our Third Five Year Plan marked the beginning of action based on a well-formulated policy in the field of town and country planning. Since 1947, a number of projects of building new towns have been taken up. Most important among these were the industrial towns of Bhilai, Rourkela, Durgapur and Chittaranjan; the townships of Faridabad, Nilokheri, Rajpura and Kalyan for resettling displaced persons; and a port town at Kandla, besides the State capitals Bhubaneshwar and Chandigarh. As compared to these the urban development projects under the Third Plan are much more comprehensive. The Plan gave priority to the preparation of master plans for the major cities and port towns, together with regional development plans for areas around metropolitan cities and big ports as well as for certain river valleys and natural resource regions.

As a preparatory arrangement, town and country planning organisations were set up in all the States and important Union Territories. A Central organisation for guiding the State bodies was constituted by the Government of India in New Delhi under the name 'Town and Country Planning Organisation'. Intended originally to work under the Ministry of Health, the Organisation now belongs, quite legitimately, to the Ministry of Works, Housing and Urban Development. Apart from providing the State organisations with central guidance and assistance, it has also an assignment of a limited nature to help the Delhi Development Authority in planning and implementing the Master Plan for the capital city.

So far the Organisation has assisted the State town and country planning organisations in preparing about 45 plans covering projects not only of new towns and development of existing ones but also many regional plans like those for the Calcutta metropolitan district region, Bombay region and regions comprising other cities and their surrounding areas. Among other regions planned are the Visakhapatnam region, Rajasthan canal region, Bhakra power region and the South-Eastern resource region, the last including

areas in West Bengal, Bihar, Orissa and Madhya Pradesh which are rich in natural resources. The regions have already been delineated and the plans in most cases are in an advanced stage of preparation.

Town and country planning involves the services of experts in diverse subjects such as engineering, architecture, economics, sociology, geography, ecology, law and administration. The Central organisation has helped the State bodies in obtaining these services by providing matching grants.

Both in the planning of new towns and improving old ones, it is necessary to promote new development work at some places and restrain haphazard growth at others. To achieve this double task, the State has to acquire necessary land and put a firm control on development by enacting suitable town planning laws. The Central organisation has supplied to all the States a draft of a model Town Planning Bill. The organisation also gives financial assistance to States for special purposes such as acquiring land in a city for opening up some vacant space in a crowded locality.

Another important function of the Central organisation is to help the States in building new towns and developing small ones into bigger towns to receive the spill-over population from the big cities which are likely to receive big influxes from rural areas. Projects have been taken in hand to build a number of satellite towns around big cities like Bombay, Calcutta and Delhi. Apart from solving the problem of congestion, these satellite townships make for a more balanced distribution of industries and urban population over different areas in the State.

The greatest hurdle in the speedy implementation of the plans about towns and regions is the acute shortage of town planning personnel. An expart estimate puts the number of trained town planners today at just over two hundred, whereas it is believed that, by the end of the Fourth Plan, we shall need at least one thousand persons. There are mainly three institutions which turn out trained town planners—the School of Architecture and Planning in New Delhi, the Institute of Technology at Kharagpur and the School of Architecture and Planning in Madras. About 25 trainees pass out annually from the Delhi school and the other two institutions between them account for another 25.

Reviewing the situation recently, a high-powered committee of Ministers recommended that (i) training facilities in the existing institutions be expanded, (ii) new schools be established, (iii) a special three-year course be introduced for part-timers, and (iv) professional institutions be encouraged to train people more rapidly by holding examinations. The last recommendation is an obvious reference to the Institute of Town Planners in New Delhi and its associate bodies in Madras and Bombay who have already been holding professional examinations for private students. The institute in New Delhi also trains professionals, administrators and others in the intricacies of town planning by holding a number of seminars.

Development Diary

June 15 to June 28, 1967

June 19

An agreement is signed in New Delhi under which the United Kingdom will give India a loan of £7 million (Rs. 14.7 crore) as non-project aid for financing imports of British goods and services for Indian industries including the requirements of British-oriented firms in India. The loan is free of interest and repayable in 25 years. It is the first instalment of the £19 million (Rs. 39.9 crore) promised by Britain in the Aid India Consortium as aid to India for 1967-68.

June 20

India enters into a contract with Czechoslovakia in New Delhi for importing 2,000 agricultural tractors from the latter country. The tractors will cost Rs. 2.23 crore and will be supplied in the current financial year. The contract is signed between the State Trading Corporation of India and the Motokov Foreign Trade Corporation, a Czech firm. This is the second contract signed by the State Trading Corporation this year with a foreign country, the first being with the Soviet Union in January last for the supply of 4,000 tractors.

June 21

Two agreements are signed in New Delhi between the F.A.O. and the National Committee in India for Freedom from Hunger Campaign. One of the agreements provides for setting up a training farm for young farmers at Visakhapatnam with the assistance of the Australian Committee of the Freedom from Hunger Campaign. Equipment and fertilisers worth 120,000 dollars (Rs 9 lakh) will be supplied to the farm. The other agreement provides for equipment worth 62,700 dollars (Rs. 4.64 lakh) for the Indian Institute of Catering Technology and Applied Nutrition in Madras.

June 24

India signs an agreement with the United States in New Delhi for importing 15 lakh tonnes of foodgrains and 50,000 tonnes of vegetable oil from the U.S.A. The cost of the imports, 112 million dollars (Rs. 84 crore), will be repaid by India in rupees to the extent of 80 per cent, and the rest (20 per cent) will be treated as long-term loan. The U.S.A. will finance, on a long-term basis, the cost of shipping up to 50 per cent. With this agreement, the foodgrains aid from the U.S.A. this year totals up to 55 lakh tonnes.

June 25

A direct teleprinter circuit is commissioned between Shillong and Delhi. The link operates through micro-wave system up to Calcutta and then through co-axial system to Delhi.

In Uttar Pradesh, a commission is set up to suggest radical measures to overhaul the present educational system in the State.

June 26

The International Finance Corporation has announced that the financing arrangements have been completed for the 82.5 million dollar (about Rs. 62 crore) fertiliser factory in India. The factory will be set up near Kanpur by the Imperial Chemical Industries and will be financed by the United Kingdom and Japan. The International Finance Corporation will invest 11.5 million dollars (about Rs 8.62 crore) in the factory.

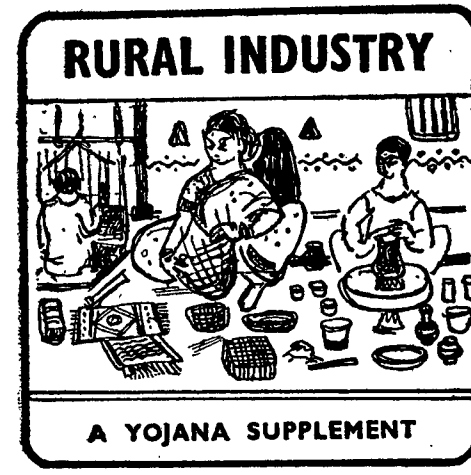
June 27

Letters are exchanged in Kathmandu between India and Nepal for renewing and extending the duration of the Indo-Nepalese agreements of Indian aid to the six development projects in Nepal. Under the additional agreement, India will give Rs. 58 lakh as aid to Nepal.

June 28

The Union Government announces its decision to float three public loans totalling Rs. 350 crore. Subscriptions to the loans will be received from July 15 to 18. One of the loans is of a five-year term bearing an interest at the rate of 4.5 per cent. The other loan is of a 15 year duration with 5 per cent interest, and the third loan, carrying an interest rate of 5.5 per cent, will mature after 25 years.

Healthy Climate For Industrial Growth



J. L. SAAZ

FROM 1-kg. bamboo basket to 50-tonne steel crane is a far cry representing a chasm of centuries. Yet this chasm is being spanned at Ranchi under the benign shadow of that industrial colossus known as the Heavy Engineering Complex.

Ranchi which constitutes the heart of the Chotta Nagpur Sub-Division of Bihar State with a predominantly Adivasi population, is truly the place where the primitive and the modern ages live cheek by jowl. If you move a few miles outside Ranchi you pass through Adivasi hamlets sheltered by bamboo, sal and mahua forests. By the road side you come across scantily dressed men and women eking out a precarious existence—an old blacksmith serving the village needs with the most primitive implements or a short-statured sun-burnt youngman slinging across his shoulders loads fresh mahua fruit hung from the ends of a bamboo beam, or a woman weaving a bamboo basket outside her mud hut. These are the people who provide the main labour force for the heavy engineering complex (as also for other industrial concerns at Ranchi) where machinery and equipments for our steel mills, coal washeries, cement and fertilizer factories and other industrial giants are being manufactured.

Happily, the climate of Ranchi is healthy both for men and machines. Besides the heavy engineering complex which envisages a total investment of Rs. 200 crore with an employment potential of 145,00 there have come up a number of large-scale, medium-scale and small-scale units—some of them ancillary—employing hundreds of persons and adding to the earning capacity of the poor people of this area. Most of these units are engineering type manufacturing items ranging from boot-polish and industrial waxes to steel wire ropes of huge sizes used as haulage ropes and in tramways, cranes, ships, bridges, etc. In view of the proximity of the forest area, saw-mill industry is a flourishing activity and we could not but be impressed by the number of saw-mills while moving up and down the Ranchi roads. There are a number of technical institutes (one of them offers degree courses in technology and diploma in engineering) which train boys and girls for various vocations, most of whom are readily absorbed by the local industries.

- **Heavy Engineering Complex, like a benign mother, spreads its loving arms far and wide.**
- **Entrepreneurs mostly educated and technically qualified.**
- **A number of large-scale, medium-scale and small-scale units—some of them ancillary—well established.**
- **Progress of Ancillary Industrial Area hamstrung.**
- **Big employment boost for poor Adivasi inhabitants.**
- **The Project plays limited but useful role.**

SCOPE FOR ANCILLARIES

The idea behind selecting this area as one of the Rural Industries Projects was to promote the growth of small-scale ancillary industries which could meet the requirements of the heavy engineering complex and other large-scale industrial units. For example, there is a high tension insulation factory in the public sector which started functioning from 1963. It gets 4-5 items—forged pins, lead thimbles, w-clips, malleable caps—from other units, some of them located distantly from Ranchi. A local unit could easily come up to meet a part of these requirements as also certain others of the State Electricity Board, resulting in the generation of more employment for the local people. Similarly, there are large units manufacturing ball bearings, wire ropes and other items which would welcome ancillary units to meet some of their demand for stores, packing material or preliminary operations. A malleable foundry and a large factory for the manufacture of heavy electrical motors, transformers and switchgears, being established by the Bihar State Industrial Corporation would further widen the horizon for ancillary units.

It is heartening to note that some of the ancillary units have already come up in view of the demand

THE PROJECT

The Ranchi Rural Industries Project, comprising six community development blocks—Ratu, Kanke, Khijri, Bere, Bundu and Angara—and covering an area of 860 square miles and a population of 3.43 lakh in a 30-mile radius around Ranchi town, has been in operation for a year only. The tribals form the majority constituting about 55 per cent of the total popluation.

Situated in the plateau region of Chhota Nagpur Division at a mean height of 2000 feet above sea-level, it has a temperate climate with forest covered undulating terrain intersected by rivers and streams.

The land, poor in fertility, produces paddy, maize, mahua, arhar, surguja and potatoes as principal crops. Since 1963, Ranchi district is covered under package programme. Major forest produce includes sal, bamboo, firewood. Ranchi district is the biggest producer of shellac in India accounting for 26 per cent of the total production. Mineral resources of the Project include limestone and coal.

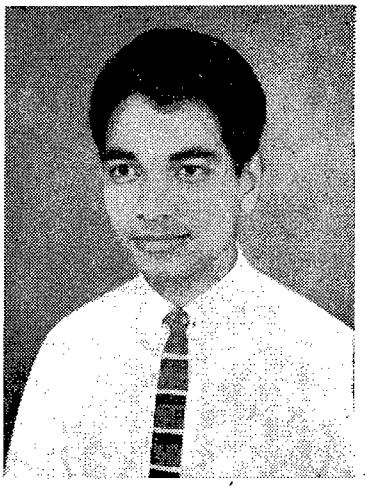
The infra-structure is satisfactorily developed, the area being well served by rail and road transport systems in addition to an aerodrome. Supply of power is adequate.

At the time of the industrial survey (1965-66), there were 14 large and medium-scale industries, 161 small-scale units and 87 industrial co-operative societies in the district. The small-scale units which involved a total investment of Rs. 93 lakh gave work to nearly 2000 persons.

created by the heavy engineering complex and the large-scale units. There are very good prospects for carrying the process a stage further. In fact, some of the partners or Managing Directors of the units we visited showed their keenness to help in this direction.

ANCILLARY INDUSTRIAL AREA

The Government of Bihar has, in collaboration with the Heavy Engineering Corporation, developed an Ancillary Industrial Area in Ranchi for establishment of ancillary industries in the small-scale sector, undertaking production of parts, components, spares, stores and tools required by the H.E.C. Projects. Apart from the developed factory plots, water, power and other physical facilities which will be provided by the Bihar Government, the H.E.C. has undertaken to provide technical know-how and guidance, preparation of project reports, quality control, designs and drawings for tools and fixtures, etc. Moreover the specialised training to technical personnel and supply of raw materials needed for items required by them will also be arranged by the H.E.C. to the extent possible.



Prem Prakash Kujur
A Musical Start

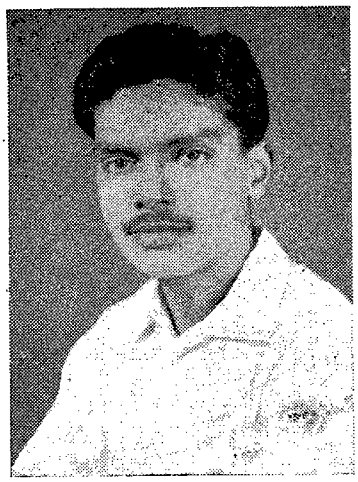
Ambitiously planned and attractively laid out, the Ancillary Industrial Area, which spreads over 100 acres about seven miles from Ranchi town and within two miles of the H.E.C. Projects on Ranchi-Chaibasa highway, has provision for 150 plots of three different sizes. In view of the fact that the set-up of ancillary industrial units for the H.E.C. will have to be more process-based rather than geared to production of specific items of a repetitive nature ("we will produce only plants and capital equipment against specific and firm orders", as a technocrat put it), there is good scope for process-based small-scale industries of the following categories:

TOOL SHOP : non-standard tools (special cutters, drills, reamers and other items). (2) Jigs and fixtures of various types. (3) Hand tools and precision tools. (4) Dies and taps. (5) Press and dies, clamps, devices, etc. (6) Mining tools and dies.

MACHINE SHOP : special small production parts.

GENERAL ENGINEERING : (1) non-standard equipment. (2) mechanical equipment and fabricated jobs.

In addition, there is scope for non-ferrous, cast iron and malleable foundries and units for pressure die-casting, sheet metal, electrical main-



Brij Kishore Aggarwal
Small but Solid Beginning

tenance (refrigerators, air-conditioners) industrial fasteners (special bolts, nuts, pins etc.), wood working, servicing, finishing, painting galvanising, anodising, precision casting, steel structure fabrication, common facilities (electroplating and heat treatment) and instrument repairs.

PROBLEMS OF EXISTING UNITS

The scheme, though well conceived, seems to have run into rough weather; it has some practical difficulties in its way as is evident from the waning of enthusiasm on the part of entrepreneurs. Some of the units which are already well established in the town and depend on ancillary work from the large-scale concerns, are hesitant to shift to the new site for 'the H.E.C. cannot guarantee us sufficient work to keep us fully busy', complained the Managing Director of an engineering unit. Another unit which has invested about Rs. 40,000 to start a pattern shop on specific assurance of work from the H.E.C., is perturbed over the allotment of a site for similar work in the Ancillary Industrial Area. "We are not against this allotment; our only concern is that our unit may not be driven out of business for want of work", represented a partner of the unit which is already making wooden patterns for the H.E.C. They are apprehensive that their claim may be ignored when the proposed new unit comes up. Then, the new entrepreneurs are afraid that they may not get all the promised facilities and benefits in time for 'there is a big gap between official promises and performance.' In fact, the small-scale manufacturers in the town who are already doing ancillary work are greatly agitated over the establishment of same kind of units in the Ancillary Industrial Area. They felt that allotments of sites for ancillary work in the industrial estate should be made only after assessing the capacity and the capability of the existing units to cope with the demand of the H.E.C., otherwise "a number of well-established units which have done a pioneer's job during the last few years, and have just managed to stand on their feet after great struggle, will face certain closure", the President of the local small-scale manufacturers' association pleaded. There is certainly need for thrashing out this problem in consultation with the various interests involved so that in the enthusiasm to develop new ancillary units the existing ones may not be smothered.

AND THE PROGRESS

In about a year's time (the actual working of the Project started only in January, 1966) the Project has some modest achievements to its credit.

In that year loans of the value of Rs. 2.05 lakh were advanced to 41 private parties which helped in the establishment of 23 new units besides enabling 18 old units to have a better footing. Some of these units manufacture items like steel furniture, grills and collapsible gates, wood screws, aluminising plants and a variety of machinery, radios and transistors, etc.

In addition, 12 Co-opertaive Societies received Rs. 37,000 as loans while seven of them also got Rs. 22,000 in subsidy. This assistance has revitalised some of the defunct co-operative societies, notably, cane and bamboo co-operatives, blacksmithy, carpentry and leather-goods societies. The new enthusiasm has been contagious; some of the beneficiaries have donated land for construction of common working sheds.

Among the new industrial co-operatives mention may be made of a lac-processing unit, a fruit preservation unit and a bone-meal factory.

The Project is running 10 training centres catering to trades like carpentry, blacksmithy, leather goods, tanning, knitting, embroidery and tailoring, durrie weaving and cane and bamboo goods. There is, however, need to improve the quality of training programmes by providing better instruction, improved implements and enhanced rate of stipends to the trainees.

EDUCATED YOUNGMEN TAKE TO INDUSTRY

It is a heart-warming feature of the industrial development in and around Ranchi that a number of educated youngmen, some of them with high technical qualifications, instead of seeking jobs, are coming forward to set up their own industries. These youngmen possess the requisite calibre and a lot of enthusiasm and grit to make their ventures a success. Their most difficult hurdle seems to be the delay in the sanctioning of financial assistance, and this factor acts as a big damper. No doubt, most of these entrepreneurs have come from outside to take advantage of the healthy industrial climate of the place, yet there is among them a sprinkling of local entrepreneurs some of whom are of Adivasi origin.

HOBBY BECOMES A PROFESSION

Mr. Prem Prakash Kujur, 25, of village Juria, in Ranchi district is now the proud owner of a radio assembly unit, which he was enabled to set up with a loan assistance of Rs. 10,000 from the Project funds. He belongs to the Oraon tribe which is one of the most primitive tribes of India. Mr. Kujur who comes from an agricultural family, passed his Intermediate Science examination from St. Columba's College, Hazaribagh. As a student of Science he was particularly attracted to wireless engineering and he started dabbling with assembly of radio sets as a hobby. Later, he completed a correspondence course in radio-engineering and decided to settle down in this industry. "First of all I started a radio repair shop in my own house. But I had a clear idea of starting a radio manufacturing unit," said Mr. Kujur as we entered the premises of his unit, which though small, creates a very good impression. "As soon as I got the loan I rushed to Bombay to purchase various tools and parts for a radio assembly unit and by this time I have assembled about two-dozen radio sets some of which have already been sold and almost all the customers are fully satisfied with these sets," said Mr. Kujur with justifiable pride in his eyes. And he started assembling radio sets from December, 1966 only.

"Anybody in our rural areas with some money in hand is keen to possess a transistor set, and the purchasing power of the people has considerably increased with the opening of new employment avenues in all these big factories," the twinkle in his eyes conveyed the vision of a bright tomorrow for him as well as the tribals of the region.

NO DEARTH OF ORDERS

Mr. Brij Kishore Aggarwal, 22, is also an Intermediate pass who comes from Banaras where his father was running a cloth shop. With a total investment of Rs. 15,000, including the Rs. 5,000 loan from the Project funds, he started a small workshop in January, 1967 to manufacture grills, steel structurals, collapsible doors, etc. He himself collects orders, supervises production and looks after the supplies. He possesses the requisite background as he had put in 4-5 years' work as manager-cum-supervisor in a relation's factory. There is no dearth of orders to keep himself and 6-7 other workers busy; he employs 2 skilled workers at Rs. 4 a day and four helpers at Rs. 3 a day. He has installed 3-H.P.motor, a welding set and a drill machine. "After establishing myself in the present manufacturing activities, I intend to undertake manufacture of conduit pipes, steel furniture and shuttering, etc." he said with a sense of achievement.

BRIGHT PROSPECTS

"Excuse me, my hands are soiled," said Mr. Gopi Saraf as we moved forward to shake hands with him on arrival at his factory in the lengthening shadows of the evening. Mr. Saraf, 28, a bachelor in engineering from Jadavpur University has been working for the correct erection of some of the machines which had showed faulty behaviour, and in the process he had soiled his hands and clothes. Mr. Saraf, the son of a Calcutta lawyer, who originally belongs to Rajasthan has purchased an aluminium factory at a distance of about 7 miles from Ranchi towards Itki. He found that the installation of the equipment was defective, and so after the purchase of the factory in October, 1966 he set about the task of setting it right by his own efforts and under his own guidance. Although his unit has manufactured some rolling shutters, it has yet to go into full and regular production. He has plans to expand his activities by undertaking the manufacture of cycle rims and mud-guards, besides anodising of aluminium products. The unit which provides employment to 20-25 persons is likely to take on more hands after it goes into full production. To our query 'what brings you here?' Mr. Saraf gave a two-word cryptic reply: "Bright Prospects".

LAMENESS NO EXCUSE

Sardar Kuldip Singh, 52, of M/S Kuldip Industries who hails from Dinanagar in Punjab, belongs to the category of skilled workers. He has put up a manufacturing unit under an improvised shed with a loan assistance of Rs. 5,000 given by the Project authorities. He manufactures various sizes of wood-screws on machines, mostly second-hand, brought from Punjab, and employs four skilled (at Rs. 150 a month) and six un-skilled (at Rs. 2 a day) workers. His daily out-turn is 350 gross of wood screws fetching him an amount of Rs. 350 as gross earnings. There is no market problem as all his production is readily sold.

Sardar Kuldip Singh, a well-built greying man, who lost his right leg 20 years ago in a motor-cycle accident, does not give the appearance of a lame man; he wears an artificial leg which he manufactured himself, and with its help he moves about without much difficulty. Before coming to Ranchi he started a wood-work unit in his home-town, then set up a screw-making unit which could not stand the stiff competition in the Amritsar market. He decided to shift his machinery to Ranchi as 'I thought the raw-material (wire) would be cheaper there in view of the proximity of the Calcutta market from where it is transported even to Punjab', and he had no regrets in shifting the venue of his industrial activity, as was evident from his 'modestly roaring' business. He has plans to start the manufacture of artificial limbs in which line he claims to have acquired good skill.

QUOTATION BOX

The helicopter, before Dr. Chandrasekhar thought of using it as a contraceptive device....

—Chotanagpuri in "The Mainstream"

At a unique ceremony, several hundred towels and surahis (earthen jars) were presented to Bihar Accountant General by nearly 2,000 employees of his office in Patna. This presentation ceremony was organised by the Bihar Civil Audit and Accounts Association to register its protest against alleged arbitrary and high-handed behaviour of the A.G.

—From a report in "The Searchlight"

When is an Information Minister not an Information Minister? Answer: When he is on the Maidan.

—From an Editorial in "The Statesman"

Mark Twain once observed that the most interesting information comes from children, for "they tell all they know and then stop". During the twelve years that I've taught elementary school youngsters, I've found that their remarks about science can also be hilarious. Here's what I mean:

"A fact was only a theory as a child."

"The axis is only a make-believe line, but the earth still manages to turn on it somehow."

"Naughtical miles tell how far it is to places we shouldn't go."

"Newton noticed that anything at rest tended to remain at rest. For this he grew famous."

—From "Science Today"

Does God exist? By 15 votes to 14, with one abstention, a jury of 30 lawyers on BBC television last Saturday night voted in favour of the proposition that He did.

—Mr James Cowley in "The Statesman"

The problem with Sushila Nayar was that she had too few ideas. Now, it looks as if her successor, Dr. Chandrasekhar, is bubbling with far too many ideas.

—Plebeian in "Southern Economist"

The world's most eminent bachelor is the world's greatest authority on family planning: Pope Paul.

—From "The Lenoir," County News U.S.A.

It (the Vietnam war) is a war in which one side is fighting to defend a democratic Government that does not exist, while the other seeks national liberation that would liberate nobody.

—Mr. Alastair Hetherington, Editor, "The Guardian," London.

To the backbencher, the bureaucrat is an unmitigated evil, Mr. Abdul Hamid Khan Jatoi from former Sind drew a most telling portrait: he (the bureaucrat) comes to a village with a pipe or a cheroot in his mouth, he does not speak the local language, he talks in English, his P.A. translating his words for the benefit of his audience. In his area, Mr. Jatoi said, the initials C.S.P. (Civil Service of Pakistan) stand for the "Central Sultans of Pakistan."

—S. Nihal Singh, reporting in "The Statesman" from Pakistan

This (the ancient Arab philosophy on marriage) offers direct advice in this all-important matter of wife-selection, and runs as follows: "If you see a young girl you would like to marry, manage somehow to see her peel potatoes.

"If she cuts the peelings very thick you will know she is extravagant; if she leaves in the eyes she is lazy; if she washes them in only one water she is dirty; if she uses much fat to cook them in she is greasy; if she lets them burn she is careless. Leave such a girl: she would not make a man happy.

"But if you find a girl who knows how to take a potato, peel it, wash it, and cook it, marry her whether she be pretty or ugly, poor or rich; she will indeed make you happy."

—Mr David Gunston in "The Hindu"

Recently, the Government National News Agency (of Nepal) reported that an 88-year-old woman Mrs. Bhadra Bahadur Thakuri, whose husband is 92, had just given birth to a son in eastern Nepal.

As if this weren't enough, three days later the N.N.A. reported from Western Nepal that Ramasara, a child of 5, was expecting a baby in four months' time.

—From "Far Eastern Economic Review"

A good monsoon will see us through and a ship a day will look after us in the meantime.

—Midas in "Shankar's Weekly"

"Night falls, Mr. Johnson removes his tie. He will work late. He kisses his wife at the door between their rooms". He "enfolds her in his arms and says goodnight as he says everything else, with authority." Alone again, the President undresses. Then he goes to the bathroom. Finally, the night light is turned off. The sheets and a bedspread are drawn up over the chest. The "President of the United State emits a short sigh." (Bishop, presumably, lay concealed beneath the Presidential bed, notebook in hand, measuring the sigh.)

—From a review in "Newsweek" of the book, A Day in the Life of President Johnson, by Jim Bishop.

"YOJANA IS PROBABLY THE BEST PAPER OF ITS CLASS..."

H. VENKATASUBBIAH IN VIDURA, JOURNAL OF THE PRESS INSTITUTE OF INDIA, MAY 1967.

LOOKING BACK

From Yojana, July 14, 1957

I Made My Mind A Beggar's Bowl

Bhai Vir Singh

I made my mind a beggar's bowl.
I wandered, and begged the bread of learning from door to door;
I filled it with crumbs that fell to me from every house of learning.
I crammed it very full; I made it heavy and I was proud;
I thought I was a pundit,
I wished to walk far above the earth in my pride.
My steps hardly touched the ground.
One day I went to my saint.
I placed my bowl before him and I gave it as an offering;
"Dirt, dirt," he said, and turned it upside down.
He threw the crumbs away.
He rubbed it with sand, he washed it with water, clean of all the dirt of learning.

—Translated by Puran Singh

Bhai Vir Singh died in Amritsar last month at the age of 85. He was the most important figure in the history of secular Punjabi literature and was responsible for the renaissance of the language. He wrote several novels, but his greater contribution was to poetry in which he introduced new styles and concepts of thought.

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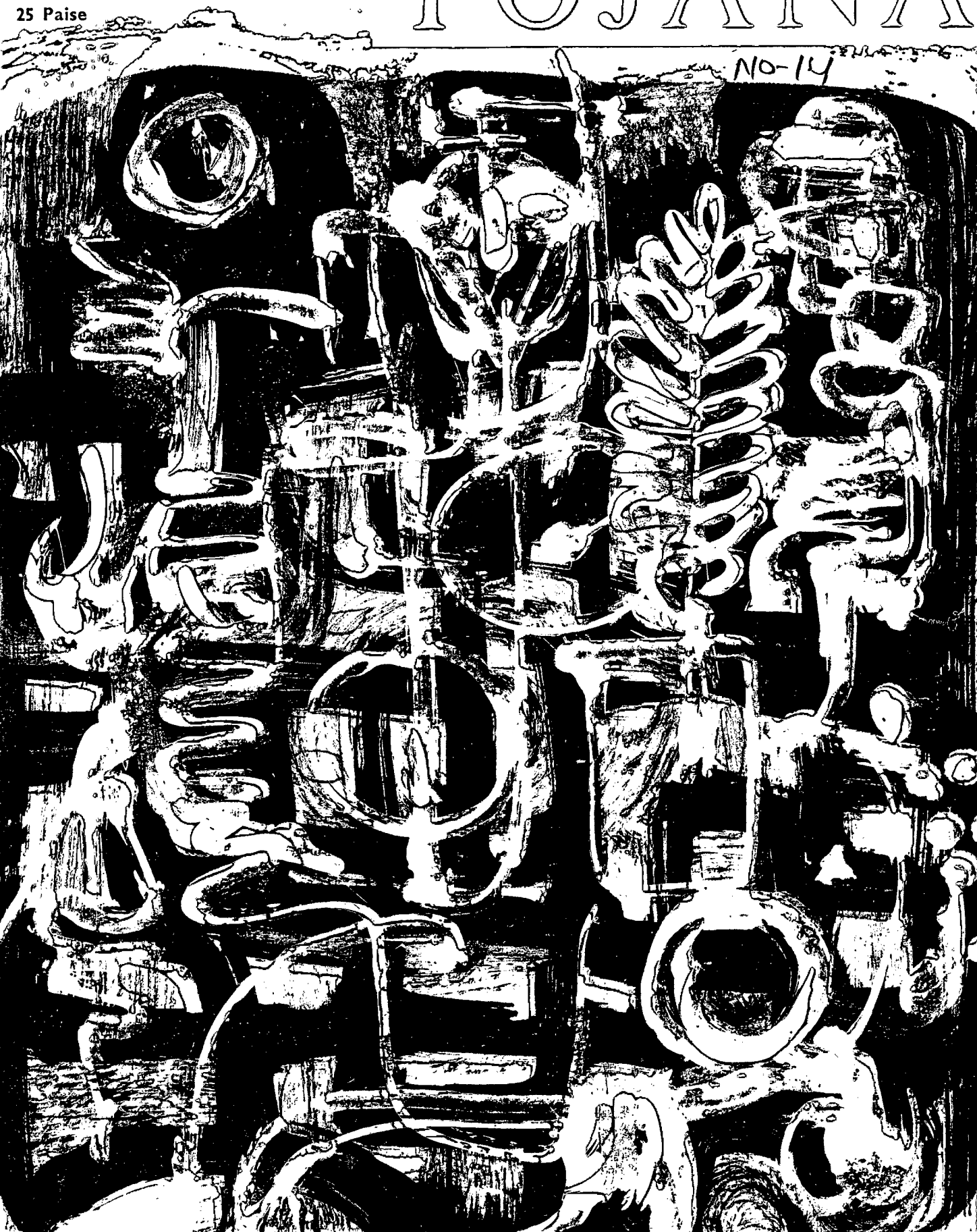
Chief Editor : Bhabani Sen Gupta

ELEVENTH YEAR ~~14~~ JULY 23, 1967

YOJANA

25 Paise

NO-14



With us food is a major consideration.
We've been thinking of it from various angles. That accounts for the wide range of equipments we manufacture for the food industry.
Think of tractors that plough an acre an hour, bulldozers, scrapers, traxcavators essential for building dams, canals and clearing forests; superphosphate plants important for the manufacture of fertilizers; a mill that grinds 1,000 tons of grain a day, cattle and poultry feed plants, bulk handling equipment, a silo that stores as much as 100,000 tons of food grain... These are not just ideas we're sowing. They are realities.
Thanks to our principals Caterpillar, well known for earthmoving equipments; Chemiebau, builders of chemical plants, and Buhler, manufacturers of plants and equipment for the food industry.

yes we'll admit it

We think a lot about food. But man does not live by bread alone. That's why we contribute to other vital industries like cement and steel, chemicals and pharmaceuticals, paper and pulp, drilling and mining, irrigation and power...

LARSEN & TOUBRO LIMITED

YOJANA

July 23, 1967 | Fortnightly Journal Published on behalf of the Planning Commission | Sravana 1, 1889

Vol. XI No. 14

SOUND ADs

IT is not at all surprising that newspaper owners will object to commercial advertising on All India Radio. They are afraid that their own advertisement revenue will go down. The small newspapers are particularly nervous because local advertising is almost nil in India, which makes them dependent on the all-India campaigns of large units, and these, they fear, may be enticed by the novel prospect of radio advertising. The All India Newspaper Publishers' Conference, at its recent session in New Delhi, has therefore urged the Government to postpone radio advertising, if not abandon it.

In a basically traditional society, any change is prone to meet with initial resistance. What is true of the proposal to raise the marriage age of girls by two years is also true of the computer and of radio ads. Often it is discovered, however, that the innovation, once introduced, belies most of the fears that trouble our uninitiated minds. Indeed, we find that each innovation, each item of social or technological change, brings in its wake a chain of new opportunities.

For reasons not difficult to fathom, the Press in India has not so far regarded the radio as a competitor. Ironically, it is money that has suddenly awakened the Press to a realisation that the radio could be a powerful rival. This competition, when it comes, and as it grows, can be to the mutual advantage of both. If, as it is generally accepted, the radio, and even TV, has proved to be no bar to increased newspaper circulation, or to the expanding power and influence of the Press in a democracy, a limited commercial rivalry between the two may induce the Indian Press to undertake more enterprising, vigorous and purposeful journalism and put through a long overdue technological transformation.

In fact, if radio commercials are carefully chosen, as they are presumably going to be, the small newspapers are likely to be the least sufferers from whatever curtailment of ad revenue the Press as a whole may face in the initial period. Books and other reading matter, furniture, household appliances may well be some of the limited number of consumer goods which may be advertised with greater effect on the radio, without subjecting the smaller newspapers to any perceptible loss of revenue. Agricultural implements, fertilisers, pesticides, small machines, advertised on the radio, will make an immediate impact on the minds of our farmers, artisans and small-scale manufacturers for whom the written word has little or no import. These goods are not generally advertised in the small newspapers. In any case radio advertisement is going to be strictly limited both in time and selectivity of items and the experiment is certainly worth watching.

When newspaper magnets raise questions of the financial burden of the Press, they hardly seem to be aware of the almost crippling monetary restrictions under which broadcasting in India still has to function. AIR could certainly do with an extra crore of rupees to improve the quality of its programmes. If sponsored programmes are accepted, they give a boost to many of our artistes, the vast majority of whom, unlike journalists, have neither a decent income nor as much social recognition as they deserve.

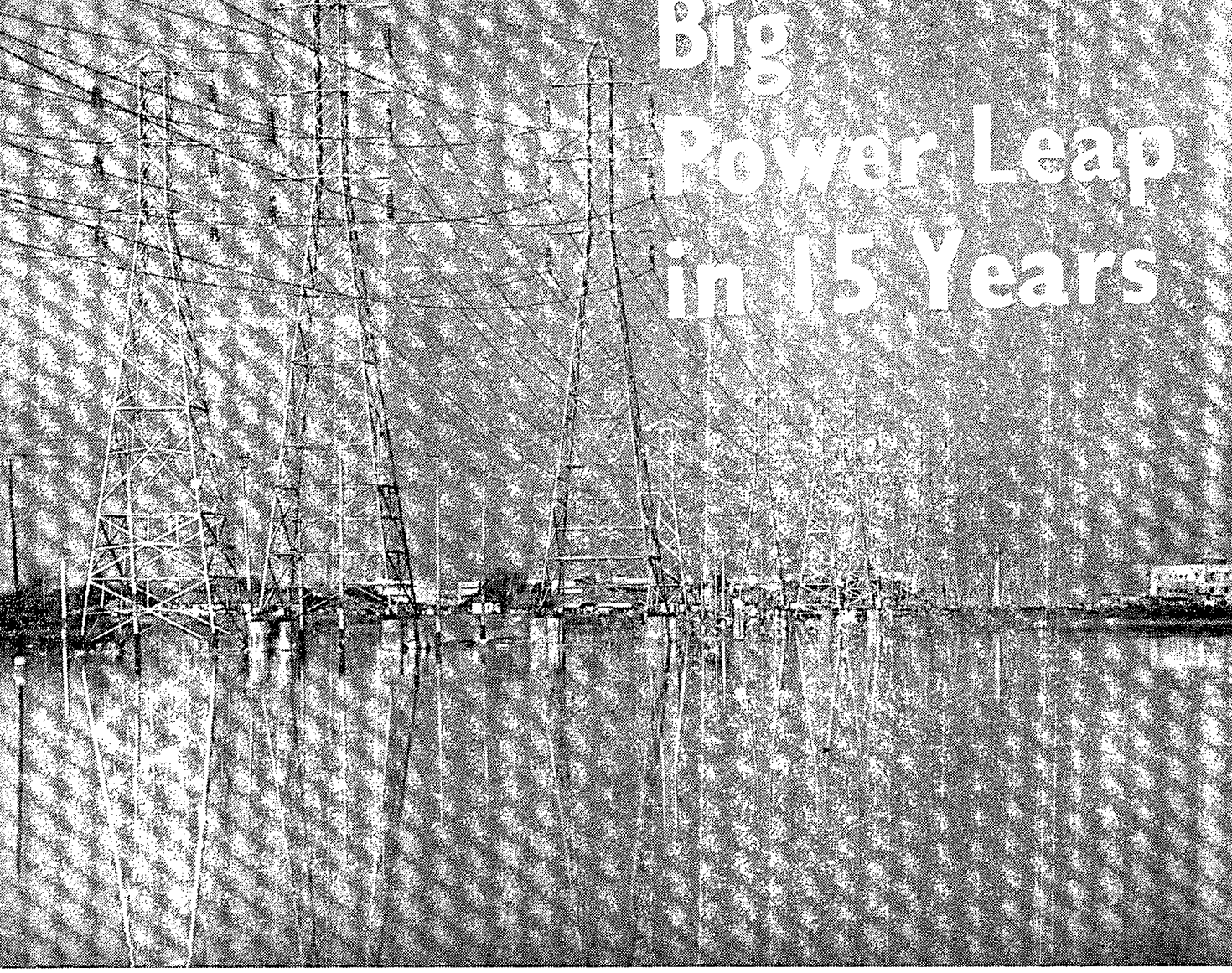
In every developing society a war goes on—literally—between darkness and light. No social transformation, no economic revolution is possible without a massive output of power. Power therefore is the key to prosperity.

IN THIS ISSUE the main story is the story of India's quest for power, not lethal power that kills and destroys, but power that illuminates hearths and homes, runs the wheels of industry, and brings to agriculture the energy without which it is bound to stagnate.

Also in this issue is a factual objective survey of India's growing economic relations with Japan.

You will also find an interesting article on life in today's Canada, a country which has proved to be one of our most steadfast friends.

As you turn the Pages



Big Power Leap in 15 Years

53,385 villages have been electrified.

5.1 lakh pumps were energised at the end of the Third Plan

1.4 lakh pumps and tubewells have been energised in the first year of the Fourth Plan

In the first year of the Fourth Plan 1270 mW of installed capacity has been added to India's electricity band.

Industries consume about 60 per cent of power generated in India. Now it is the turn for agriculture.

ADEQUATE supply of electrical energy is a vital factor in the development of any country. It is a powerful instrument of economic and social development. The per capita consumption of electricity is an index of the economic prosperity of a country and its people. In rural communities, electricity can operate as a strong force in the introduction of urbanisation.

The available natural resources of energy in India for generation of electricity are water, coal, lignite, oil, fossil and nuclear fuels. India is fairly rich in hydro power resources. The aggregate hydro-electric potential is estimated at 41 million KW corresponding to 216,300 million units of energy per annum on a firm basis. The potential of various river systems:

	million kWh
Ganga Basin	25,700
Central India rivers	22,500
West flowing rivers of South India	22,600
East flowing rivers of South India	45,300
Brahmaputra basin	65,600
Indus basin	34,600
Total :	216,300

The known available reserves of coking coal are limited and have to be economically used. A number of washeries have, therefore, to be established to meet the growing demand for washed coking coal, particularly for the expanding iron and steel industry.

The reserves of non-coking coal are ample. The proved reserves are estimated at around 115,000 million tonnes. Geological investigations are proceeding and further reserves are likely to be proved. In thermal generation more and more of this type of coal is being used. No difficulty is anticipated in the forseeable future in meeting the requirements of power stations using low grade non-coking coal and middlings.

A beginning has been made to use furnace oil and refinery gases for power generation in our country. The proved reserves of oil are inadequate to sustain large-scale power generation. Investigations are in progress and unless appreciable reserves of oil are proved and exploited, the use of oil and gas for power generation on an extensive scale will not be feasible in our country.

India's nuclear fuel reserves are found in the form of uranium and thorium. *The thorium reserves are considered to be among the largest in the world.*

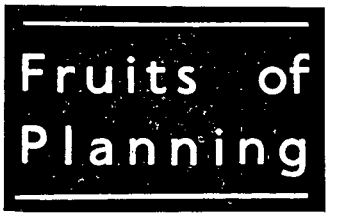
PRE-INDEPENDENCE

In the pre-independence period, the electricity supply industry was mostly in the hands of private licensees. They confined their activities mostly to the remunerative urban areas. Electricity did not reach the rural areas. However, soon after independence, the Central Government enacted the Electricity Supply Act (1948) for promoting co-ordinated development of generation, supply and distribution of electricity in the most officient and economic manner with particular reference to such development in areas not for the time being served by the licensees.

In order to carry out these objectives, the Act laid down that an Electricity Board be set up by all the States. State Electricity Boards have since been functioning in all the States (except in Jammu & Kashmir).

Electricity being an important input for growth of the economy, its development has been assigned priority in our Plans. Growth of installed capacity and generation of electricity during the last three Plan periods is given in Statement I at the end of this report.

The total installed capacity in the country which was 2.3 million kW at the beginning of the First Plan, increased to 3.4 million kW during the First Plan period. Under the Second Plan, it rose to 5.6 million kW, and under the Third Plan, 10.17 million kW. *Thus, during the fifteen years of planned development, the aggregate installed capacity has increased 4.5 times.*



Side by side generation has also gone up nearly 5.5 times over the same period (Statement I). The growth of installed capacity Statewise in the three Plans is given in Statement II.

The marked growth of electricity over 15 years has also changed the pattern of distribution of capacity and generation among the utilities. (See Table A)

The per capita consumption of electricity which was only 17.8 kWhr per annum in 1951 had increased to about 60 kWhr per annum in the three quinquennium ended 1965-66. (See Table B on next Page)

The emphasis given to development of power in our Plans may also be seen from the extent of expenditure incurred. (See Table C)

An outlay of Rs. 340 crore in the public sector was provided for power programme in 1966-67. Distribution of this provision was as follows:

Generation	Rs. 216 crore
Transmission & distribution	Rs. 80 crore
Rural electrification	Rs. 44 crore

The actual outlay incurred is, however, expected to be around Rs. 385 crore. Because of drought conditions prevailing in certain areas in the country, *the programme of rural electrification was stepped up during 1966-67.* As against Rs. 4.4 crore provided for rural electrification, the anticipated outlay is expected to be Rs. 63 crore.

Some of the States received additional financial assistance from the Centre to step up the rural electrification programme—for energising irrigation pumps and tubewells in order to increase agricultural production. *The number of pumps energised at the end of the Third Plan was 5.1 lakhs. During 1966-67, it is estimated that about 1.4 lakh pumps and tubewells were energised raising the total number to 6.5 lakhs.*

The aggregate installed capacity at the end of 1965-66 was 10.17 million kW. About 1.27 million kW was commissioned in 1966-67 thereby increasing the total capacity in the country to 11.44 million kW. The important schemes/units commissioned in the first year of the Fourth Plan are given in Table D on next Page.

TABLE A

Installed capacity by ownership (million kW)

	1950	*1956*	*1960-61*	*1965-66 (estimated)*
State owned public utilities	0.63	1.52	3.35	7.30
Company-owned public ,,	1.08	1.18	1.36	1.65
Self-generating industrial establishments	0.59	0.72	0.94	1.22
Total :	2.30	3.42	5.65	10.17

The State-owned utilities which accounted for about 27 per cent of the total installed capacity before the First Plan had shown a steep rise of 71 per cent of the total capacity at the end of the Third Plan.

The power supply position in the country was, by and large, satisfactory except in some pockets such as Rajasthan and Orissa which are predominantly served by the hydro schemes the operation of which

was affected by the poor rainfall in two consecutive years. Inter-State transmission lines proved useful in transfering surplus power from Mysore to Andhra Pradesh, Madras and Kerala and from DVC to Calcutta, Orissa and Uttar Pradesh.

TABLE D

Name of the station	*Additional generating capacity in 1966-67* MW
Kothagudem I (Andhra Pradesh)	120
Pathratu (Bihar)	50
Kandla (Gujarat)	10
Srinagar diesel (Kashmir)	5
Sholayar (Kerala)	18
Sabarigiri (Kerala)	150
Korba (Madhya Pradesh)	50
Chambal V unit (Madhya Pradesh)	23
Mettur tunnel (Madras)	50
Parambikulam (Madras)	30
Koyna Stage II (Maharashtra)	150
Bhakra right bank (Punjab)	240
Yamuna Stage I (Uttar Pradesh)	11
Bandel (West Bengal)	82.5
Durgapur (Industrial complex)	75
Delhi	15
Durgapur III Unit—DVC	140
Rourkela (steel plant)	50
Total :	1270

In formulating the programme of 1966-67, high priority was accorded to completion of the schemes which were in an advanced stage of construction. *The policy of interconnecting power systems and establishment of regional grids was also implemented.*

TABLE B

	1951	*1955*	*1960-61*	*1965-66 (estimated)*
Per capita consumption per annum kWh	17.8	23.0	8.23	60

TABLE C

	Outlay in Rs. crores in public sector		
During	*Total Plan expr.*	*Power Plan expr.*	*% of total*
1st Plan	1960	260	13
2nd Plan	4600	460	10
3rd Plan	8631	1300	15

Adequate supply of electricity is the primary requisite for large-scale industrial development. The estimate of load demands of industries has been the main criterion in determining the size of the power programme. In the Statement III, the pattern of consumption of electricity during the three Plans is given. It may be noted that consumption of power in industries account for over 60% of the total consumption. It is therefore necessary that the probable requirements of the industrial units are assessed in advance so that adequate arrangements be made for commissioning the additional generating capacity.

In the rural areas, electricity can bring about far-reaching changes in methods of irrigation and farming and create conditions for the growth of small-scale industries. It is because of these direct and indirect potentialities of electricity, there is growing consciousness among people in the rural areas for getting electricity.

There are about 5.7 lakh villages in the country. Out of these, 53,385 villages had been electrified till the end of the Third Plan. Based on the pattern of electrical development, as at present, it is estimated that the cost of electrifying the balance of 5.12 lakh villages will be of the order of Rs. 3,000 crore. An investment of this order has to be viewed in the context of competing claims of other development sectors within the limited available resources.

In the Five Year Plans, rural electrification has been given increased importance. Progress in rural electrification in the First Plan was confined to a few States like Mysore, Madras and Kerala and mainly relates to energising agricultural pump sets. In the subsequent Plans, the programme became more extensive and was taken up in all the States though not on the same scale. The distribution of towns and villages in terms of numbers electrified during each Plan period is given below:

Total number according to 61 census	567408
No. electrified by March 1951	3687
No. electrified by March 1956	7400
No. electrified by March 1961	24209
No. electrified by March 1966	54814

The provision on rural electrification increased from Rs. 27 crore in the First Plan to Rs. 75 crore in the Second and to Rs. 154 crore in the Third Plan.

Table E gives the outlays and achievements in the Second and Third Plans.

Rural electrification has been further intensified under the Fourth Plan. The emphasis will be on energisation of a cluster of pumps keeping in view the ground water availability in various areas. As already noted the number of pumps/tubewells energised in 1966-67 alone was 1.4 lakhs. In the statements IV and V the numbers of villages and pumps energised for each State during each Plan period are given.

The Centre has been giving subsidy for consumption of power in rural areas for both agriculture and small-scale industries. The pattern of subsidy given is as below:

(i) **Agricultural pumping loads**

In the case of rates which are over and above 12 paise per kWh, the cost of consumption above 12 paise per kWh is subsidised, the Central and State Goverments sharing the subsidy equally.

(ii) **Small-scale and cottage industrial loads**

Where rates exceed 9 paise per kWh, the cost of consumption above 9 paise per kWh is subsidised by Government up to 18 paise per kWh, the Central and the State Government sharing the subsidy equally. *In other words, the consumer is required to pay only 9 paise per kWh plus the cost of power over and above the rate of 18 paise per kWh, whereever applicable.*

For further intensifying rural electrification programme, a few pilot rural electrication co-operatives in a few States are being set up.

AN ALL-INDIA GRID

The trend of power development in every advanced country today is to locate large-sized thermal stations near pit-heads and nuclear stations where other sources of power are not available, to interconnect the contiguous hydro and thermal power systems and operate them in an integrated manner. This enables a country to realise the various advantages such as reduction in

generating capacity due to diversity of load demands, reduction in standby capacity, increase in size of generating sets thereby involving a reduction in unit cost, better utilisation of transmission facilities inherent in such operation. These concepts have been introduced in India and systematic efforts are being made to unify the power systems on a regional basis. For this purpose, the country has been divided into five regions:

Northern region—Jammu & Kashmir, Himachal Pradesh, Punjab, Hariana, Delhi, Uttar Pradesh & Rajasthan.
Western region—Gujarat, Maharashtra and Madhya Pradesh.
Southern region—Andhra Pradesh, Madras, Mysore & Kerala.
Eastern region—Bihar, West Bengal, Orissa and DVC.
North-Eastern region—Assam, Manipur, Tripura, NEFA & Nagaland.

Regional Electricity Boards have been formed for the various regions for regional operation of power systems. All the five regional electricity Boards have started functioning. These Boards are, however, of an advisory character.

INTER-STATE LINKS

Certain inter-State links in the various regions were planned during the Third Five Year Plan period for effecting interconnected operation of the contiguous systems. Those links are in various stages of construction. *However, the link between Mysore and Madras was completed and commissioned in November, 1965 and since then Sharavathy power from Mysore has been flowing into the Madras grid.* The power transfer has been sizeable and the relief that Madras has been able to get is considerable.

Side by side with the development of regional grids, certain inter-regional ties are also proposed to be established. In fact there are already a few inter-regional ties existing. For example, the DVC system in the Eastern region is interconnected with Rihand system in the Northern region by a 132 KV double circuit line from Sonenagar to Pipri. This tie line has been of great mutual assistance to the two systems. Similarly certain transmission lines under the Chambel project interconnect the Northern region with the Western region.

It is expected that the construction of the first phase of inter-State links in all the regions will be completed during the Fourth Plan period. It is visualised that, with the gradual evolution of regional grids and construction of interregional ties, an All-India grid will come into being by the Fifth Plan period, bringing in its wake the manifold benefits of co-ordinated operation.

TABLE E

Item	Unit	Second Plan	Third Plan Target	Third Plan Achievement
Outlay	Crores	75	105	154
Villages electrified	Nos. cumulative	24209	43000*	53385
Pumps energised	Lakh Nos. cumulative	1.6	—	5.1

*includes urban areas

To take electricity to all of our 5.7 lakh villages, we need an investment of Rs. 3,000 crore.

NUCLEAR POWER

India's nuclear fuel reserves are found in two forms: uranium and thorium. The first stage of the atomic power development programme will utilise the natural uranium as fuel producing power and the fissible element, plutonium. The second stage will employ reactors using plutonium and thorium to produce power and, in the process, convert part of the thorium into uranium-233—an isotope of uranium which, like plutonium, is a fissile material.

In this stage, however, plutonium can also be used with natural uranium to produce power and more plutonium as a by-product.

This would increase the utility of uranium as a fuel and could provide economic power, till such time as

IN 1950, INDIA'S TOTAL INSTALLED POWER CAPACITY WAS 2.3 MILLION kW.
IN 1965, IT PITCH-FORKED TO 10.17 MILLION kW.
IN 1951 PER CAPITA POWER CONSUMPTION WAS 17.8 kWhr A YEAR.
IN 1966, IT STOOD AT 60 kWhr A YEAR

STATEMENT I

Growth of installed capacity and generation during I, II and III Plans

	Beginning of the first Plan 1950	End of the I Plan 1955	% increase over 1950	End of the II Plan 1960-61	% increase over 1955 in II Plan	End of the III Plan 1965-66	% increase over 1960-61 in III Plan	% increase over 1950 in 15 years
Installed capacity in megawatts	2300.3	3418.3	48.5	5654.4	65.4	10175.6	80	342
Electricity generated in million kw/hrs.	6574.5	10777.2	64.0	20123	99.2	36000	79	448

the plutonium-thorium technology is developed to a stage in which it can be economically exploited.

The third stage will use uranium-233 with thorium in Breeder Reactors, so that while electricity is generated, more uranium-233 than is burnt in the process is produced. The cost of fuel in this stage is expected to be lower than in the other two stages. In view of the availability of extensive resources of thorium in the country, the long-term development of nuclear energy in India will have to be oriented towards the use of thorium.

India has entered the first stage of development of nuclear power by establishing two uranium fuelled atomic power stations—one at Tarapur in Maharashtra using enriched uranium as fuel, and the second at Rana Pratap Sagar in Rajasthan using natural uranium as fuel. These two stations are now under construction. A proposal to build a third power station at Kalpakkam in Madras, similar to the station being built in Rajasthan, has been accepted by the Government.

STATEMENT II

Power production and installed capacity in the Second and Third Plans

	1955 installed capacity in MW	*1960-61 installed capacity in MW*	*1965-66 installed capacity in MW*
Andhra Pradesh	99.7	228.2	307.0
Assam	4.7	19.4	160.5
Bihar	114.3	350.9	395.9
Gujarat	216.0	333.3	666.3
Jammu and Kashmir	12.8	13.0	31.0
Kerala	89.6	137.3	197.3
Madhya Pradesh	80.4	233.0	315.5
Madras	254.6	517.5	1035.5
Maharashtra	466.6	759.5	1294.5
Mysore	190.5	198.3	460.7
Orissa	10.8	170.7	317.7
Punjab	126.5	309.4	712.4
Rajasthan	42.3	146.8	246.3
Uttar Pradesh	286.1	396.4	913.9
West Bengal	637.5	753.6	1555.1
Delhi	55.2	76.3	112.3
Other Union Territories	7.2	8.4	12.6
Neyveli			300.0
Total for utilities :	2694.8	4653.0	9044.6
Self-generating industrial establishments	723.5	1001.4	1141.0
Total—All-India	3418.3	5654.4	10175.6

N.B. Share of States from joint projects shown in their respective States.

STATEMENT III

Consumption of electricity during the three Plans

	1950 million kWh	% of total	1955 million kWh	% of total	1960-61	% of total	1965-66 (estimated)	% of total
1. Domestic light and power	524.6	7.9	850.4	7.9	1492.3	7.3	2200	6.1
2. Commercial light and power	308.8	4.7	514.4	4.8	847.7	4.2	1404	3.9
3. Industrial power	3983.6	60.6	6757.1	62.6	12400.0	62.0	22360	62
4. Irrigation	161.7	2.5	254.8	2.4	832.8	4.1	1800	5.0
5. Public lighting	60.3	0.9	105.6	1.0	193.2	0.9	300	0.8
6. Traction	308.4	4.7	403.3	3.7	453.9	2.2	720	2.0
7. Public water works	189.1	2.9	284.6	2.6	436.2	2.1	720	2.0
8. Consumption of auxiliaries & transmission losses	1038.0	15.8	1607.0	15.0	3467.0	17.2	6500	18.0
9. Total generation	6574.5	100	10777.2	100	20123.1	100	36000	100

STATEMENT IV

Villages Electrified

(Based on 1951 Census)

States	Total number of villages	As on 31.3.1951		During first plan	As on 31-3-56		During Second Plan	As on 31.3.1961		During Third Plan	As on 31.3.1966	
		No.	%		No.			No.	%		No.	%
1.	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	26460	30	0.11	540	570	2.2	1859	2429	9.2	3008	5437	20.6
Assam	24842	5	0.02	16	21	0.08	22	43	0.17	32	75	0.3
Bihar	68177	2*	—	311*	313*	0.46	2092*	2405	3.5	1465	3870	5.7
Gujarat	18769	56	0.29	109	165	0.87	566	731	3.9	1020	1751	9.3
Jammu & Kashmir**	6595	10	0.15	27	37	0.56	123	160	2.4	472	632	9.6
Kerala	4545	339	7.5	380	719	15.8	686	1405	30.8	369	1774	39.1
Madhya Pradesh**	70526	—	—	79	79	0.11	367	446	0.63	767	1213	1.7
Madras	20205	1495	7.4	935	2430	12.0	3489	5919	29.3	3950	9869	48.8
Maharashtra	35761	45	0.12	227	272	0.76	560	832	2.3	3786	4618	12.9
Mysore	27821	688	2.5	1043	1731	6.2	1131	2862	10.3	1274	4136	14.9
Nagaland**	817	—	—	—	—	—	1	1	0.12	7	8	1.0
Orissa**	46494	4	0.01	34	38	0.08	104	142	0.31	420	562	1.2
Punjab	20970	73	0.35	694	767	3.6	2256	3023	14.4	2283	5306	25.4
Rajasthan	31856	22	0.07	20	42	0.13	50	92	0.29	1087	1179	3.7
Uttar Pradesh	112058	581	0.52	1976	2557	2.3	2309	4866	4.3	4907	9773	8.7
West Bengal	38487	249	0.65	133	382	1.0	291	673	1.7	527	1200	3.1
Sub-Total	554383	3599	0.64	6524	10123	1.8	15906	26029	4.7	25374	51403	9.3
Union Territories:												
A & N Islands	201	9	4.5	3	12	5.9	3	15	7.5	7	22	11.0
Delhi	316	—	—	5	5	1.6	50	55	17.4	248	303	95.8
Goa, Daman & Diu	280	7	2.5	Nil	7	2.5	5	12	4.3	21	33	11.8
Himachal Pradesh	8395	11	0.13	20	31	0.37	557	588	7.0	685	1273	15.1
L.M.A.	10	—	—	—	—	—	—	—	—	4	4	40.0
Manipur	1602	9	0.56	3	12	0.75	17	29	1.8	80	109	6.8
N.E.F.A.**	2451	—	—	—	—	—	1	1	0.04	20	21	0.86
Pondicherry	176	42	23.9	13	55	31.3	83	138	78.4	38	176	100.0
Tripura**	4936	—	—	—	—	—	11	11	0.22	30	41	0.83
Sub-Total	18367	78	0.42	44	122	0.66	727	849	4.6	1133	1982	10.8
GRAND TOTAL (ALL INDIA)	572750	3677	0.64	6568	10245	1.8	16633	26878	4.7	26507	53385	9.3

** Estimated*
** As per 1961 Census*

India has entered the first stage of nuclear power production by setting up two uranium fuelled atomic power stations—at Tarapur and Rana Pratap Sagar. A third plant is expected to come up at Kalpakkam.

India is gifted with the world's largest reserves of thorium

STATEMENT V

Rural electrification—progress and programme of energising irrigation pump sets.

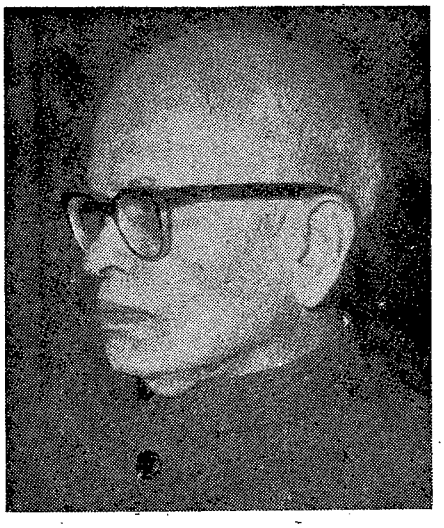
States/Union Territories	*No. of electrified pump sets as at end of II Plan (cumulative)*	*No. of pump sets energised during III Plan (additional)*	*No. of pump sets as at the end of III Plan (cumulative)*
Andhra Pradesh	17,024	43,272	60,296
Assam	—	—	—
Bihar	1,981	9,070	11,051
Gujarat	6,229	9,010	15,239
Jammu and Kashmir	—	—	—
Kerala	2,565	4,392	6,957
Madhya Pradesh	2,228	1,847	4,075
Madras	98,481	1,57,617	2,56,098
Maharashtra	6,530	37,484	44,014
Mysore	12,433	29,855	42,288
Nagaland	—	—	—
Orissa	129	705	834
Punjab	8,795	32,290	41,085
Haryana			
Rajasthan	477	6,527	7,004
Uttar Pradesh	2,969	13,989	16,958
West Bengal	236	141	397
Union territories	71	3,757	3,828
Total :	1,60,168	3,49,956	5,10,124

A VETERAN COME TO PLANNING

IN a way, the appointment of Dr Dhananjaya Ramchandra Gadgil as Deputy Chairman of the Planning Commission is a logical culmination of the Professor's time-honoured involvement in India's planned development. We all know of Dr Gadgil the economist, to whose untiring efforts the Gokhale Institute of Economics and Politics owes much of its present international reputation. Some of us were somewhat surprised to see this young man of 66 actively engaged throughout last year in the great national debate on India's economic and social sights, and he was one of the many economists, and one of the not too many front-rankers, who insisted that the sights could not be lowered. But few of us seem to be aware of Professor Gadgil's long, active involvement in the Indian planning process.

He was one of the architects of the Second Plan, for he was chairman of the panel of economists that worked out its major formulations. As member of the Research Programmes Committee, Dr Gadgil initiated a series of studies in the field of urban economics and irrigation problems. His active association with the Rural Industries Committee was mainly responsible for the formulation of a scientific rural industries programme.

It is not easy to define precisely Dr Gadgil's economic outlook which is the result of continuous growth of an astute mind passionately occupied with India's economic problems. Dr Gadgil is undoubtedly a socialist; his faith in democratic socialism remains untarnished; but he does not belong to any particular school and is far from dogmatic or doctrinnaire. Schooled in the economic thinking of Bentham and Marshal, he has, during the long span of an active intellectual career, absorbed and tried to make relevant to Indian realities, the economic formulations of many international authorities, thereby evolving what one may venture to call a broadly Indian school of economic thinking. This school is firmly socialistic in



Dr D. R. Gadgil

outlook, as firmly rooted in the enduring values of liberal democracy. What Dr Gadgil has done in all his writings and applied economic activity is consistently to champion the right of the common man to a better life in the changing Indian social pattern since independence.

His contribution to applied economics is astounding. Whether it was the rationing system in Bombay province during World War II or the present procurement policy of the Maharashtra Government, whether it is in making the sugar co-operatives in Maharashtra the success that they are or in studying the system of industrial licensing in the Bombay-Ahmedabad region, Dr Gadgil's contribution has been of the utmost value. Thus Prof Gadgil has combined theoretical erudition with a lifetime of applied study and work, and has come to be recognised as an outstanding authority on the developing economy of India and on problems of developing societies in general.

The maker of several generations of Indian economists, Dr Gadgil stands at the forefront of what is now a large family of economic experts, and he has the respect of all, irrespective of the schools of thought they may belong to. Having shunned the limelight of publicity all this life, he finally comes to head an organisation which for one reason or another is always in the limelight. Those who saw this veteran do most of the talking at last year's meeting between the Prime Minister and an invited group of economists would testify to his burning faith and to the vigour of his enlightened vision. The Planning Commission enters a new phase of its eventful career with Dhananjay Ramachandra Gadgil as its leader, and the country will watch with great interest how he pilots its work in the crucial years ahead.

Mr G. R. KAMAT

Mr G.R. Kamat, who joined as Secretary, Planning Commission, in April 1965, went on leave prior to retirement on July 1. Yojana Bhavan bade him farewell on June 30. At Mr Kamat's wish no tea and food were served and a sum of Rs. 400 collected for refreshments were donated to the Prime Minister's Drougnt Relief Fund. Members and officials of the Planning Commission gave him, as memento, an inscribed copy of the Draft Outline of the Fourth Plan on which Dy. Chairman Mr Asoka Mehta wrote: "With best wishes to a wonderful friend and colleague and an outstanding public servent."

LOOKING BACK

YOJANA, July 28, 1957

A GROUP of Indians, all of them trained and experienced observers, went to China a year ago to study what has come to be known "co-operativisation of farming", but in fact is really a way of living together in the village. The Chinese are now trying to revive what was once quite well-known in rural India, but they are doing it on a scale which really makes this a new experiment in rural reorganisation. The leader of the Indian observers was Shri R.K. Patil, who has studied Indian agriculture in all its aspects.....

When the delegates left the ports and cities behind them and went into the countryside, they found the real focus of the country's efforts changing the villages from backwardness to prosperity. The key to this programme is co-operative farming.....

But the great difference between co-operative farming as practised in China and as seen in India is one of scale. We have only a few hundred co-operative farms, about 1,400 in all. But China had more than a million at this time last year. They covered more than ninety per cent of rural households.

WHAT CANADA NEEDS IS PEOPLE

AMRIT MEHTA

WHO VISITED CANADA RECENTLY AS A MEMBER OF THE PRESIDENT'S PARTY

DEPENDING on the season, a visitor to Canada can come away with entirely different impressions. As a member of President Zakir Husain's party, I visited Canada at the end of June. For a visitor from Delhi, specially after 2 years of dry weather, the most overwhelming first impression, naturally, was the lush green landscape, the lovely green lawns, meadows and woods. And, of course, the lack of dust. This impression persisted throughout my stay of a week. In some ways Canada reminds one of the Kashmir valley in the months of April and May, except that the places we visited were warmer. The same green meadows, the poplars and pines and the maple, the leaf of which is Canada's national symbol and which resembles so much the famous chinar leaf of Kashmir.

YOUNG AND VIBRANT

But perhaps the resemblance ends there. The affluence and prosperity are in marked contrast to Kashmir and the rest of our country. We had passed through London on our way. London had history and a charm of its own. It lived upto everything I had read about it or heard. To me it was a city one could fall in love with in spite of obvious signs of aging. Canada and its cities, on the other hand, were vibrant and young. The youth of the country is visible in everything—the people, their dresses, the buildings, cars and the general hustle and bustle of city life. The hotels are better; the transport more modern and cheaper. The people are better fed, better housed, better clothed and on the whole have a better standard of living. Also they look happier and have more leisure to do what they like. And to my mind therein lies the brightest aspect of their life. So the first impression is super-imposed by a new one. The image of a country and people full of youthful vitality and, like an awkward adolescent, only vaguely feeling the stirrings and promise of the future. They are beginning to realize the immense potentiality of their big country and are happy and a little overawed by it.

Ottawa perhaps is not the best introduction to Canada. Like New Delhi, though to a much lesser extent, it is laced with red-tape and protocol. It is dominated by Government and its officials. The British tradition is strong. Even the guards, with their bear-skin caps, red tunics and black trousers, are reminiscent of London. The House of Parliament and the Peace Tower take you back to their counterparts in Britain.

The other cities have a more definite character of their own. Montreal and Ontario are more representative of America of our times while Quebec, with its skyline still unblemished by towering skyscrapers, has an old-world charm of its own. And it is so continental! It is the heart of the French speaking province of the same name, a heart which is beginning to beat faster of late.

As I said before, Canada is a huge country — nearly 4 million square miles of it compared to a little over one million square miles of India's. Only the Soviet Union exceeds Canada in size. The population, on the other hand, is only a fraction of India's — about 20 million. Vast areas are still uninhabited. Yukon and Northwest Territories, accounting between them for nearly one-fourth of the total area, have only 2 per cent of the total population, i.e., roughly 40,000 people. You get a more homely idea only when you know that the two territories are almost equal in area to India. Two provinces, Ontario and Quebec, between them account for 65% of the total population. Nearly two-thirds of the population are concentrated within a hundred miles of the border with the United States.

The existence of three great expanses of semi-barren territory—the Canadian shield girdling Hudson Bay, the Arctic and the Western Mountain Ranges—helps to explain why more than three quarters of the land in Canada is still almost uninhabited. As I said in the beginning, impressions of Canada can be different depending on the season. The rest of the country has a continental climate with a long, cold winter. Kipling called it "Our Lady of the Snows". The summers, however, can be almost tropical. The country is dotted with lakes; it has perhaps the world's second largest area under inland water. Travelling by air you see almost as much water as land. It also has one of the greatest waterways of the world in the St. Lawrence River—Great Lakes system. It carries deep sea shipping from the Atlantic Ocean to the heart of the country — more than 2,300 miles.

At one time, Canada was largely agricultural. But now industry has acquired increased importance. You see signs of it everywhere. The potential for further growth is almost unlimited — the main limiting factor being the population. The country is immensely rich in natural resources. About one-sixth of its land area is suitable for agriculture — its most valuable natural asset.

Forests and fisheries are two more of Canada's sources of wealth. Nearly two million square miles are cove-

red by forests. Industries based on forest produce nearly a third of the nation's exports.

We in India know of Canada's participation in our industrial development. But an interesting experiment in Indo-Canadian collaboration in reverse is being tried in the Atlantic province of Nova Scotia near the town of Halifax. *Here Indian enterprise and money have helped set up one of the world's largest hardboard factories utilising the large resources of hardboard which hitherto were being wasted.* This factory spearheads the entry of Indian capital into North America and on its success may depend the future of many more such enterprises. The man responsible for the enterprise, an energetic Punjabi, is bubbling with confidence and seems to be determined to make a go of it.

Canada is not lacking in mineral resources, most of which are still unexplored. It has the world's largest nickel deposits and is among the chief producers of zinc, lead, copper, gold and uranium. So far most of the ore is exported but efforts are now being made to process it in the country itself. In the last few years vast deposits of oil have been located. They may turn out to be the world's largest. Commercial exploitation has begun and soon Canada may become one of the world's major oil producing countries.

FOREIGN CAPITAL

With so much of natural wealth the country needs a much bigger population to exploit it properly and also needs capital for investment. So far foreign capital has been making in-roads. *Estimates show that just a little over 52% of the total capital investment in the country is foreign, with the United States having the lion's share.* This has been causing misgivings among the people and the Government. Urgent steps are being taken to regulate the flow of foreign capital and also to nullify the hold of US money. This has resulted in a certain amount of friction between the two countries but the Canadians seem to be bent on standing on their own feet and reduce their dependence on foreign capital.

Being the neighbour of an industrial giant has also created other problems for Canada. For one thing they find it hard to create a distinct Canadian personality. They are so easily indentified with the Big Brother and so taken for granted.

It is not sufficiently realized outside Canada that Canadians are distinctly different from their neighbours, the Americans. As a people they are quieter with less of the hail-fellow-well-met attitude. The pace of life in their country is much slower than in the States. But they are also less integrated. This may sound surprising, for few people realise or know the extent of feeling among the French Canadians. Growing French nationalism is one of the major problems of Canada today. Even a brief visit to Quebec city is enough to make you feel it.

FRENCH FEELINGS

The main ethnic groups are British and French. About half the population are of British blood; almost a third are the French-speaking descendents of the original French settlers. The rest of the population came to Canada in fairly recent years. Most of the French-speaking Canadians are concentrated in the province of Quebec, where their forefathers had settled 350 years ago. Both English and French are official languages.

This, however, has not satisfied the French. Their complaint is that while they have to learn English, the English-speaking people make hardly any effort to learn French. They want to guard their French culture zealously. After their conquest by the British 200 years ago they turned inwards, confining themselves to Quebec and rejecting everything from outside as foreign. Religion has not helped — the French Canadians are Catholics. This restricts inter-marriages and therefore, integration. As most of them know French only, employment opportunities are necessarily restricted. All this causes more bitterness and a sense of discrimination which leads to further isolation. This vicious circle must be broken if the problem is to be solved.

At the moment a movement for secession seems to be gaining some ground. But outside the province, nobody seems to be taking it really seriously. Minor movements for merger with the US also are in evidence in provinces like British Colombia on the Pacific and Novascotia in the East. But they are hardly of any consequence. All the same a vital integrated Canadian nationalism is still to be developed.

EXPO '67

No account of a visit to Canada can be complete without a mention of Expo-67 which coincides with the country's centennial celebrations. Hundred years ago this year, the Federation was born and Canada became a separate entity. Expo-67, contrary to common belief, is not a trade fair. As the theme "Man and His World" shows, it is an exhibition of man's achievements in the scientific, cultural and other fields. Nearly 70 countries are taking part and have set up their pavilions in the Expo grounds located on a couple of islands in the St. Lawrence. It occupies nearly a thousand acres—half of it reclaimed for the purpose.

The Expo is a showpiece of organizational and engineering skill. To have organized so gigantic an undertaking in less than three years is no mean achievement. The concept is the outcome of deliberation by scholars, scientists and artists. The idea has been brilliantly executed. During the six months of its existence there will be cultural shows by groups of artists from various countries and also sports events. There are restaurants providing the food of different countries. In addition, as part of Expo programmes, Heads of State or Governments of various countries are invited to take part in their national Day Celebrations. Montreal, as a result, has become a cosmopolitan city. Hotels are full of foreigners who bring a part of their country's culture with them.

As a taxi driver in Montreal said, it has brought the world to their city. The Canadians are coming to know others a little better. What used to be mere names have become a little meaningful. And if all this, added the taxi driver, makes Canada better known among others, it would have helped make the world that much smaller—quite a gain in itself.

THIS INDIA

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

Recently I visited a village in Andhra Pradesh where total prohibition is in force. I was a guest of the Sarpanch of that village. One day, the Sarpanch sent word to all the tappers and distillers in the village to assemble at his house immediately. All of them promptly turned up and settled down on the steps.

The Sarpanch addressed them, "Our friend, the Inspector from the prohibition department, is coming here this afternoon. My register shows that Ramudu and Kaniah are to be charge-sheeted this time for breaking the prohibition laws and Venkiah should provide all facilities to the Inspector". Everybody nodded in acceptance and left the house.

I was surprised at this meeting. The Sarpanch smiled and said in a casual tone, "This is only a routine affair. It happens when the Prohibition Inspector visits this village during his inspection round. These villagers and the Inspector arrived at an agreement long ago that in every visit the villagers should pay him a certain amount and give him two cases of violation of the prohibition law. The Inspector in turn will not really inspect and obstruct their business".

Hyderabad *M.S. Chandra*

A social worker attached to a primary health centre went to a remote village to preach family planning. Some twenty men assembled at the residence of the Sarpanch. They were all illiterate except the Sarpanch who could sign with difficulty.

The young health educator discussed with the villagers about the importance and use of birth control measures. He tried his best to convince them of the urgency of family planning in the prevailing circumstances. He told them that they should have children when they really wanted them.

During the discussion an old man stood up and asked the health educator, "Are you married"?

"No, I am a bachelor", he replied.

The old man left the place angrily saying, "It is a sin to listen to the secrets of conjugal life from the mouth of an unmarried chap."

Others followed the old man.

Raipur, M. P. *M. Islam*

Late in the evening we three were cruising through Connaught Place on our Lambretta. My husband was driving the scooter, with our three-year old in front of him, and I on the pillion. We were hoping not to be encountered by the traffic police. But before we realised what was afoot, we stumbled upon a whole bunch of them with a mobile magistrate's court thrown in.

We were promptly challaned despite all our pleadings to be excused. We were led to the magistrate, who, wanting to do his duty without appearing severe to us, fined us ten rupees. My husband, however, had only seven rupees. So, we were threatened with the prospect of the vechicle being impounded for failing to pay off the fine in full.

The magistrate saw our predicament and generously offered to pay the balance himself if my husband undertook to reimburse him the next morning when he would be on duty at a certain place.

We gratefully agreed to this.

New Delhi *Suladha Kulkarni*

I visited a village in the Varanasi district of U.P. The village is populated mostly by Rajputs (Kshatriyas). I met the village Pradhan, who happened to be a Rajput, and expressed my satisfaction over the bumper crop of wheat as a result of using the seeds of a high yielding variety.

During my talk with the Pradhan, I found that the village had no community listening radio set. When I asked why this was so, the Pradhan said, "Panditji! This begging business is below the dignity for us Rajputs. Moreover, when my predecessor Rajput Pradhan did not beg for it from the Government, why should I? I am in no way inferior to him. I am also a pure Rajput."

Uttar Kashi *Rama Shankar Tripathi*

It was our dissection class. Each of us had a big frog in his or her hand to be made unconscious before dissection.

All of a sudden we heard one of the boys on the opposite side shouting 'Mera Mendak, Mera Mendak'!

We raised our heads and saw to our astonishment that he was hopping after the frog to catch it, but could not bend his knees because he wore very tight pants.

All the boys and girls laughed loudly at his predicament. Finally one of the girls picked the frog up and gave it back to the boy. Many of his friends could not help him as they were themselves wearing tight pants.

Since that day, the tight pants have been called in our college as 'Mera Mendak Pants'.

Durg (M.P.) *Kumari Shubha Murti*

African Democracy At Grassroots

A RURAL COUNCIL IN ZAMBIA

ANIRUDHA GUPTA

Mr Gupta, who has returned from an extensive tour of Africa, is Special Fellow on Commonwealth Africa at the Indian School of International Studies, New Delhi

WITH the transfer of power in Zambia, several important changes have taken place in the field of rural local administration. These changes reflect a departure from the principle of Indirect Rule which the colonial government had upheld until the time of independence.

Under the system of Indirect Rule, the administrative units in the rural areas had been tribes or groups of tribes under traditional authorities in the form of chiefs or chiefs-in-councils. This tribal basis of rural administration was interpreted by nationalist politicians to be a divisive force against what they imagined to be their attempt to build an all-national society. In the later phase of the nationalist struggle, therefore, they accused the colonial regime of trying to divide chiefs from their people by making them mere agents of administration. The colonial rulers, on the other hand, tenaciously clung to their belief that support to the traditional authority of chiefs was the only basis and guarantee for stable government in an African society. Thus, even as late as 1958, the Secretary of Native Affairs, Northern Rhodesia, could assert, "The greatest and most important thing we must do is to make the Chiefs—the native authorities—appear in the eyes of the people to be much bigger and more important people than the African nationalistic politician leaders."

Chief Councils

It would be wrong, however, to suggest that the colonial rulers wished to keep the native authorities on a deliberately tribal stage. By 1950-51 democratic elements, such as elected members and departmental councillors, were brought more and more into the chief's councils, and the native authorities were given more powers to carry on developmental activities in their respective areas. These functions and powers have not been drastically changed as far as the rural councils are concerned.

What is of importance is that while the colonial rulers wanted the native authorities to continue their developmental activities without prejudicing the traditional powers given to chiefs, the independent African Government have no such moral or ideological obligations.

Under the *Local Government Act, 1965*, the rural councils all over the country have come directly under the Minister of Local Government who has powers to remove all councillors, dissolve any council and vest all its powers on a Local Government Administrator. The chiefs too are now merely appointed as *ex-officio* members of these councils and they can be removed or dismissed in the same manner as any ordinary councillor. Thus, the basic change that has now come is that, contrary to the policy of the colonial regime which wanted to maintain traditional authorities of chiefs while expanding the functions of their councils, the independent Government wants primarily to see these councils work as local units of its over-all developmental planning, without providing any safeguards for the chiefs' traditional positions.

It is in view of these broad changes in principle, that this article proposes to study the organisation and functions of a particular rural council in Zambia namely the Rufunsa Rural Council.

Composition and Procedure

The Rufunsa Rural Council came into being in September 1965 when the Lusaka Rural Council and the Feira Rural Council were merged by a Government Order. Formerly, during the colonial rule, there were two superior native authorities in the Lusaka District, namely, the Soli Tribal Council and the Senga Chikunda Tribal Council, each having three subordinate native authorities working under it. When in 1964 these councils were converted into the Lusaka Rural Council and the Feira Rural Council they had 5 chiefs and 13 elected councillors and 2 chiefs and 8 elected councillors respectively. The rural side of the Lusaka district has always been a stronghold of the African National Congress Party (ANC) which to-day represents the African opposition to the ruling United National Independence Party (UNIP). As such, originally the ANC had a majority in the Lusaka Rural Council. On amalgamation of the two Councils into the present Rufunsa Rural Council, however, the position of members was as follows—7 chiefs as *ex-officio* members, while among the 17 elected members, 12 belonged to UNIP and 5 to ANC.

Thus, the overall political changes in the country were fully reflected in the changing composition and membership of the Rufunsa Rural Council.

The first meeting of the council was held at Chongwe, some 30 miles south of Lusaka. The meeting was conducted in English by the Chairman. The Councillors spoke either in English or Nyanja while an interpreter translated their speeches into the alternative languages. There was a clerk of the council who sat with the Chairman to help him conduct the meeting. Among the visitors were a group of boys from the local training school, a representative from the Provincial Forest Department, the District Local Courts Officer, the Principal Forester,

the Game Ranger, a representative of the District Secretary of Lusaka and the present writer.

On the first day when the councillors assembled to elect their chairman, the chiefs decided not to put up any candidate. They even did not use their votes in the chairman's election. This was, as the writer was told, due to the chiefs, desire to keep away from party politics. During the meeting also, apart from one chief, these traditional leaders of the people took rather a quiet part and, unless called upon to speak on specific matters, they kept a general silence.

As regards the procedure of the meeting, members seemed to entertain confusing ideas. Certain procedures seemed to have been entirely copied from those of the National Assembly (Central Legislature). But the chairman himself seemed to have several different ideas about his own role. He was both the chairman and the longest speaker in the meeting; sometimes he used his authority to persuade members on certain points, at other times, he referred to the Standing Rules of the Council which he seemed to ignore himself. He allowed only those members to speak whom he considered helpful in the debate. (Perhaps, all this was necessary; at a time when democratic discussion is just beginning, it may even be harmful to follow rigid rules.)

Among the several things included in the agenda, only two items can be related here so as to throw light on the Council's developmental activities, the attitude of partymen and chiefs, and the role of Government representatives in the council.

Discussion

The first item the council discussed was a highly ambitious Five Year Developmental Plan which the Chairman, who is also chairman of the Financial Committee, read out. It appeared that in all £80,000 would be spent by the council on building roads, bridges, dams (this was loudly cheered) over the period of the next five years. To an observer this have appeared a highly exaggerated plan. On enquiring as to whether the Ministry of Local Government had agreed to grant all that amount, the writer was told that this was a simple exercise in sums for members to do without any relation to what would ultimately be granted by the Government.

The second item was about a report which, the Principal Forester had submitted on three proposed schemes on which he wanted to know the council's opinion. The three schemes were in regard to (i) the establishment of a woodland area; (ii) the plantation of poles in another area, and (iii) the preservation and development of a forest area.

The Principal Forester took great pains to point out that these schemes would benefit the local people and that the lands surveyed by him along with local headmen and councillors were shown in the survey maps.

The officer of the Provincial Forest Department (an African Civil Servant) reiterated the probable advantages of the scheme. Then the councillor representing that area was asked to give his views on the

scheme. He said that his people were bent upon cultivating the area shown in the map and, therefore, they did not think any woodland would be advantageous to them. When the chief of the area was called upon to give his opinion, he said, "Plantation of forest was no good for my people". He also asserted that the area in dispute was once cultivated by his tribesmen and, therefore, it could not be used for any other purpose.

Despite the chairman's plea, one UNIP councillor firmly declared, "If the people (of the area) object to the scheme, then there can be no scheme." This irritated the District Local Courts Officer (an African) who retorted, "If I were a councillor, I would try to persuade the people, instead of saying that this cannot be done. But the majority of the councillors stuck to their positions. Finally, the chairman proposed that the matter be once more investigated by the Principal Forester in consultation with the councillor and local people.

The second scheme was about pole plantation in a densely populated area. This time the councillor (an ANC) who spoke fluent English, explained why the people opposed the scheme. He said, as the area was densely populated the people did not like to part with any land; they also said, 'The Government has many other protected areas, better let them be developed rather than take new ones'. Besides, they had no need for poles as they could get them whenever they liked from the nearby forest.

Then the Provincial Forest Officer clarified the official policy on plantation of forest. He said, "The people hold a wrong notion that these plantations would be used solely by the Government. In fact, some wood could be sold on the Copperbelt and the money thus received would go to the local people. There could also be enough local supply of poles for the protection of cattle and gardens.

When the chief of the area was asked to give his opinion, he observed, "If I were consulted earlier, I would have asked the survey men to go elsewhere. The result of the discussion was the same—to refer the scheme back to the councillors and the headmen of the area and the Principal Forester.

The third scheme was about the creation of a forest. The councillor concerned said that on principle the people liked the idea of having a forest close-by, but there were about 700 cattle in the village and they feared that they would suffer from shortage of grazing if a forest reserve was established. The councillor, therefore, suggested that an alternative area be chosen for the forest. This speech was warmly welcomed by the chairman, "This sounds far more reasonable than others. The councillor has done a nice job."

Conclusions

Though these two items discussed above do not give a full idea of the Council's activities, certain observation could be made here. The alienation of land in Native Reserve areas had always presented a formidable problem to the colonial rulers. District Officers and Commissioners in those days had always complained that, despite their best efforts, local Africans and their chiefs were averse to parting land for development of forest or other projects. It would seem that after independence, even with an African Government, the problem is not over.

Secondly, where land is concerned, though it may seem strange, the people, the chiefs and the local partymen, all tend to hold the same view as expressed by the UNIP councillor that "if the people objected, there should be no scheme." This seems to be the main problem which any government has to face if it really wishes to give due regard to popular views through these local councils.

Thirdly, it appears that the old attitude of hostility to Government officials as nurtured during the nationalist days, still continues even though now most officials happen to be Africans.

Fourthly, it would also appear that there is no such built-in struggle between traditional and modern elements in local politics of which scholars talk so often. The chiefs maintained a position which the elected councillors strongly supported. On the other hand, it appeared that UNIP, which is the ruling party and is considered to be the party of change, reversed its role in this particular case for the UNIP councillors, preferred to go against their own Government when they were confronted with the choice of either accepting the officially sponsored scheme or retaining their popularity far more important than official programmes.

Indeed, it would seem that the peculiar problem in Zambia's rural local administration is not only one of weakening the tribal and traditional authority of the chiefs, but to convince and persuade followers of the ruling party to come out of their local prejudices. In colonial times, the chiefs were inclined or forced sometimes to go against the wishes of the people. This was a factor which the nationalists resented. Today chiefs and local politicians tend to go together, but that does not seem to have made the task of an African Government anyway easier in implementing its developmental programme.

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A Plea For HUMANITIES

The recession in the engineering industry is reflected on the number of engineers unemployed or unsatisfactorily employed in the country. As on December 31, 1966, the live registers of employment exchanges showed 9,197 mechanical engineers as job-seekers. Also in search of jobs were 7,972 civil engineering overseers, 2,548 civil engineers, 6,354 electrical engineers, 150 chemical engineers, 66 metallurgical engineers and 181 mining engineers. All these total up to more than 26,000. Quite a formidable number, although all of these might not have been without jobs; often job-holders register themselves with the employment exchanges because they want to have something better.

Even then, with 26,000 engineers—graduates, diploma holders and men with practical experience—without employment, it is advisable to reduce the number of new admissions in our engineering colleges. In fact, the Fourth Plan Outline did anticipate a certain glut of engineers and, therefore, kept the admission capacity of engineering institutions more or less pegged at the 1966 level. Already admissions in the engineering courses at the degree and diploma levels have been restricted to 50 per cent of sanctioned capacity in 1967-1968 because of the "unsatisfactory employment position." In Orissa, admissions to engineering colleges and polytechnics have been restricted this year to 50 per cent of sanctioned capacity.

This should not be an unmixed evil, if followed in other States too. For one thing, we do need *better* engineers even if the number is fewer; for another, most of our better boys have been going in for science courses, with the result that the humanities are going through a period of devaluation. Almost in every higher secondary school, arts teachers complain that they are loaded with the "worst" boys. The long-term impact of this on the liberal professions has already begun to be felt; we are dangerously short of good teachers at all levels. The administrative services too are being denied the high level of intellectual attainment without which young men and women could hardly expect to pass the IAS and allied services tests fifteen or even ten years ago.

ENGLISH !

We got the following letter last week from a student of the Banaras Hindu University.

"I am a student of B.H. University. Due to the drought in Bihar and U.P., our university takes various measures to collect the money for the 'P.M. Relief Fund.' One day when I was in the class the majority of the students of mine was discussing about the function which was arranged by the Lady College. The discussion was became very enjoable and attractive to others also. They were also spend average 'ten rupees' there.

Again when the collection was started in our class for the same cause, they also donated.

But when the name of the student declared who were awarded financial aid for the drought affected area, the majority of the students were received the amount which was about Rs. 70 to 200/-.

When I said this news, they replied, 'Oh, This amount is for the pocket money purposes.'

I was surprised and thinking about the real miserable condition of the Bihar & Eastern U.P."

If this is the standard of English attained by a university student, there is every reason to believe that it is of no use at all to compel every student to learn English. Why shouldn't we make English an optional subject for our boys and girls? This will rule out the necessity to pass all students who fail in English, as has been done in Bihar.

Our Women ENGINEERS

How many women engineers are there in India? Not more than 275, according to a survey carried out by Miss K. K. Khubchandani, of the Indian Institute of Sciences. Miss Khubchandani had sent a questionnaire to engineers, heads of engineering institutes and employers, and she read a paper on the basis of the survey at an international conference of women engineers and scientists held at Cambridge on July 1. Miss Khubchandani and Dr. K. Chandrasekhar, Reader in Zoology at the University of Madras, were the two Indians amongst 400 women delegates who attended the conference.

According to Miss Khubchandani, there are 93,000 engineers in India now, of whom 275 are women. Perhaps it is not too small a number when one comes to think of the traditional kind of education women generally go in for in this country. It is in the humanities and courses like pre-medical that girls predominate; science and technology is still mainly a male occupation in India. The women scientists, however, Miss Khubchandani tells us, are proving as efficient as their male counterparts and have been accepted as equals. Most of them are employed in design development, teaching and research and too few on field work, again a masculine reserve.

IGNORAMAN

Wants to know

If the idea of
a Budget is
not to Budge
if you don't Get.

STREET-NAME

Believe it or not, just midway between Tin Murti and Rashtrapati Bhavan, there is a South Avenue Lane !

—B. Sen Gupta

Rev. Fr.R.H. LESSER

Father Lesser who has considerable experience of relief work in scarcity areas in Rajasthan discusses certain aspects of relief work, in this article, and makes commonsense suggestions to cut out red-tape, and make relief works really productive both for the country and for those who are employed on them.

WHY RELIEF WORKS BRING LITTLE RELIEF

IN a letter to England at the end of last year I wrote, "If a famine is when people starve and die of starvation, there was no famine here. There could easily have been. But the Government, the Government of Rajasthan, chipped in handsomely. At one stage there were no less than 20,000 people in Kushalgarh tehsil alone on relief work, and Government controlled grain shops enabled the poor to buy grain at reasonable rates."

This is magnificent. A certain amount of work is done; people are paid something and they and their dependents survive. The famine is staved off: relief is given. Also it prevents people going on the dole and gives them some opportunity of saving their self-respect.

But like every good scheme in this very imperfect world, it is not perfect. Some of the defects are ingrained in it, essential to it; others often follow. Let us examine these and see if all or some are avoidable and to what extent.

"Relief work is meant to give relief," I was told when, early in my career here, I asked about some of these problems. "How much or what kind of work is done is unimportant. Also, in relief work there is no possibility of 'pukka' work..."

One would not quarrel with the statement of the main aim of relief work—to give relief, though I will show that even here it can fall short of its aim. But short-term relief might well entail long-term damage to the people and the country at large.

How Damage is Done

Let me illustrate. Relief work is started on a road. Each gang of 70 is under a 'mate', (amusingly mispronounced by the Bhilsas 'maid'). Each gang is allotted a certain section of the road. The main function of the mate, who is supposed to supervise the work, seems to be to record the attendance. Late-comers are also registered. There is no check on the work. Even a conscientious mate has a very difficult time getting *any* work done. What work is done is uneven and poor. Most often the state of the road after is worse than it was before. What does it matter? The people are paid in any case; the mate will get his extra bit. Relief has been given.

But see the damage done. The road, which before at least was ridable, becomes a mass of lumps and mud which, in the monsoons, becomes an impassable slush. So much for the damage from 'relief work'.

But I consider much more serious the damage to the people. Tribals are naturally hard working as anyone who has seen them working in their own fields would testify. But this kind of 'relief work' deprives them of the 'habit' of work and gives them the habit of laziness. Whatever moral sense they may have had is shattered when they find they can get 00.75 or Rs. 1.12 for just twenty paise of work. Further, getting used to ignoring or outmanoeuvring the mate, they lose any sense of discipline they may have had. Discipline is not frightfully important for an independent farmer; but for a country trying to muster all its resources in a desperate struggle for survival, discipline, especially in the vital agricultural sector, can play a big part.

Piece Work System

Happily, this method of relief work has at least for the moment (I hope permanently) been abandoned in my district. I mention it because it may still prevail elsewhere. Now, under an interested and humane collector and a progressive (in the best sense) B.D.O., we have a system that should work much better. The people are paid by 'piece work'. Also under this scheme the Panchayat Samiti can undertake small projects costing up to Rs. 25,000 even if it involves *pukka* work such as the outlet for a lake, which was impossible under previous conditions. (In a previous scarcity year when I undertook the building of a dam to make a lake, we suffered from precisely this inconvenience).

The advantages of this system are obvious—less supervision is necessary, more work is done and better work. Also working discipline is maintained. Since the work allotted for the day can sometimes be finished early, workers can return home to work on their wells or prepare their fields.

Yet the system of piece work also has its disadvantages, or possibilities of improvement. An obvious one is the difficulty of assessing the proper rate of pay. Whereas in another State, a short distance away from us, one man could earn as much as Rs 10 per week by piece work, here in our district men were given Rs 4 and women Rs 2.50 per week, when they have fully completed their

allotted piece. Since these are ridiculous rates in these times, even for famine relief, there must have been some mistake somewhere.

Delay in Payment

A much more serious disadvantage, which is inherent in all systems, but, by its very nature, more so in piece work (because of the difficulties of calculation) is the delay in payment of wages. In one of the holy books it is written 'Hold not a day-labourer's wages till the next day'. What would you say of a system that delays weekly wages for two, three and even four *months*?

Work was started on soil conservation by *choukris* 10 ft by 10 ft by one foot. Payment of wages was considerably delayed. Reasons given for the delay in payment were (a) a proposal for the work had not been submitted in the first place; (b) the mates had not sent in the muster rolls; (c) one of the clerks, through whom the papers had to pass, had gone to a wedding; and (d) an officer concerned had gone to Udaipur. I am aware that a certain amount of paper work is necessary, that weddings must be attended, that officers have to go to Udaipur on important business. But what I feel very strongly about is that none of these incidents should be allowed to interfere with payment of wages at any time, and especially during scarcity times, when people are dependent on the week's wages for next week's food. Could it be because of the attitude—'They are Bhil tribals; they don't matter; they have no one to fight for them'? Would this have happened in a big industrial concern with a strong union?

Another reason for delay in payment of wages, not mentioned above, is inequitable distribution of labour and consequent overload on certain departments. Thus in our district in one year all the relief work was on roads, which left the irrigation and soil conservation people with little to do. Next year the stress was on soil conservation. In a certain district, not ours, all the overseers resigned, complaining that they could not cope with the work—each had 10,000 workmen to oversee.

What would seem to be needed is more co-ordination, perhaps one co-ordinator solely responsible for relief work, whose main efforts should be to eliminate paperwork and streamline procedures.

Finally on relief work, may I make a suggestion based on my own personal experience with donations received from Europe? I am subsidising digging of wells. I pay the householder according to the work done, the rates varying, of course, according to the depth and the hardness of soil or rock. This requires the minimum of supervision. I can do it myself with a measuring tape. It achieves, I think, the maximum results. The householder is the best possible 'mate', as he is the most interested in seeing his well well dug. In fact, out of 38 wells in hand only three householders have failed me, or rather themselves. The B.D.O., noting the good results, is recommending the method to the collector, and it may be adopted further through the district.

Books

The Brown Man's Burden

Asia's Population Problems. Edited by S. Chandrasekhar. George Allen and Unwin Ltd., London. 308 pages.

BHABANI SEN GUPTA

IF the population problem is essentially an Asian problem, it is because Asia is the oldest of the continents, and, in a geo-political sense, the centre of the world. Geographically, Europe is Asia's annex, Africa its sub-continent and Australia its island. India and China alone are the homelands of more than a third of the entire human race; there is hardly any Asian country which is not feeling the weight of its population on its modestly growing economy. The only exception is Japan, where a scientific policy of population control has already produced a stabilising balance between the growth of the population and that of the economy.

Dr S. Chandrasekhar has to his credit more than 20 years of devoted work on the population problem of Asia and the world. It is noteworthy that during the last ten years or so, his attention has been concentrated largely on the Asian aspects of this gigantic problem. He is the author of numerous books and papers on the population problem of India, China and other Asian countries and he is one of the few Indian demographers to win international recognition.

The idea for the present volume of essays on Asian and Australian population problems arose at an international seminar held by the World Assembly of Youth at Melbourne in 1963. Dr Chandrasekhar himself has written the first three chapters of the volume. First he has posed with masterly command of facts and perspective, the Asian population problem and has offered a series of scientific solutions. Later, in Chapters II and III he has dealt with China's demographic dilemma and India's population problem; the two together make a fascinating, alarming study of the multiplication of the human race and all that it means for the teeming millions of the world's two largest populous countries. There are also essays written by experts on the population problems of Japan, Indonesia, Pakistan, Malaysia, Taiwan and Australia. The last three chapters deal with Australia's population policy, and point out how Australia could accommodate, with the adoption of a more enlightened emigration policy, a large number of selected Asian people from various countries. Of immense value to the expert and also the lay man are the documents quoted in the appendices — Demographic & Economic Data for Asian Countries, the Marriage Law in Peoples' China, Extracts from India's Five Year Plans enunciating the Government of India s population policy and family planning programme, the Eugenic Protection Law in Japan and the text of the Australian Emigration Act.

Dr Chandrasekhar says that the solution to Asia's population problem lies as much in population control as in economic and social development. The latter is often a necessary prerequisite to the implementation of the former. While every Asian country is trying to develop its agricultural resources and industrialise its economy as much as possible, only a few countries are trying to curb their population growth. He is entirely correct when he says that the successful and widespread implementation of planned parenthood implies not merely a reasonable standard of living but, more important, the woman's social and economic emancipation. "Once the women of Asia are liberated from apathy and ignorance, and some education, in the fundamental and liberal sense of the term, becomes widespread for all the people of Asia, a new awareness of the dignity and worth of the individual is bound to dawn". He pleads for liberal Western assistance in the development of health, hygiene and family planning in Asian countries. "In the long run Asia must be enabled to lower both her birth and death rates to civilised levels. When every Asian woman delivers two babies instead of the five or six she delivered before, and when every Asian farmer grows two ears of corn where one or none grew before, Asia's demographic and population problem can be solved. A relatively rich and stable Asia is bound to have beneficent repercussions even on the affluent West, for prosperity, like peace, is one and indivisible."

Growth Of Indian Air Transport

A TIMELY STUDY

Economic Development of Indian Air Transport by A. W. Nawab. National Publishing House, Delhi. 460 pages—Index Rs. 35.

Comparative Evolution of World Air Transport by A. W. Nawab. National Publishing House, Delhi. 237 pages. Rs. 30.

MR NAWAB would appear to have suddenly exploded as an expert on air transport; the simultaneous publication of two voluminous books is no mean achievement. It is all the more remarkable because the subject on which he has written, air transport in India and the world, has so far been left alone by Indian technicians and scholars. Mr Nawab who, as the blurb says, "hails from a royal family of Hyderabad", has devoted five years to "toiling research" on air transport in India and in the

world, and these two volumes are the "end-product" of his five years of labour.

To my mind the importance of the first book lies mainly in the fact that it is a pioneering work in which, for the first time, a student of civil aviation in India will find not merely a delectable account of the history of the growth of air transport in India but also a wealth of documented material relating to almost everything about the rapid growth of civil aviation since independence. The first airplane flown in India on commercial errand was probably in 1911, by a Frenchman who carried postal mail from Allahabad to Naini Junction. The first "irregularly regular" air mail service had to wait till 1926 when this was organised by Lord Lloyd, Governor of Bombay. The British, however, left civil aviation woefully neglected in India. They were, as Mr Nawab says, "reluctant to establish a mode of transport which could be converted as a first line of defence or action when dire political necessity arose in war, no less in the liberation of British India. Political consequences were known to be the factors detrimental to the establishment of air industry and consequent progress of commercial air transport in India."

Mr Nawab has written a most interesting account on the early phases of Indian civil aviation, particularly the part played in it by lone adventurers like Mr J.R.D. Tata. As civil aviation began in right earnest only after India attained independence, the bulk of the book is given to a factual, objective and documented account of the operation of the two Indian airlines, one domestic, the other international. For any one who wants to make a study of the operation of the two Corporations, Mr Nawab's book should prove to be invaluable. It also covers a summary of the report of the Air Transport Enquiry Committee 1950 and a detailed review of Governmental acts and reports pertaining to civil aviation.

Mr Nawab has a lucid style and a sense of humour. If the bulk of the book is an edited compilation of official reports and documents, this was perhaps inevitable in the Indian situation. After all, there are few people in India who can write expertly on various aspects of civil aviation, not to speak of an integrated study of civil aviation as part of the country's transport problems. Mr Nawab says that he had to work under very difficult circumstances and was denied "even the basic necessities which an author is normally entitled to." Considering this, he has certainly done a commendable job.

The second volume has a wealth of useful information about important airfields in the world and is an exhaustive study of governmental aid in various countries for the development of commercial air transport. If the first volume creates in the reader an appetite for more information about civil aviation, the second volume will go a long way to satisfy it.

B. SEN GUPTA

QUOTATION BOX

In the reality of our politics, there are only two super-powers: Israel and North Vietnam.

—Mr. Murray Kempton in "Spectator", London

It has been estimated that the cost to America of killing one Viet Cong or North Vietnamese is £142,900.

—From a "Punch" editorial

At the time of going to press twenty-three of the hundred and five nations composing the "Free World" are under military rule.

—A cartoon caption in "Punch"

How clean Jordanian Jerusalem was; how well designed the new public buildings and hotels. And when they (Israelis) got down to the Jordan Valley, those I was with could not get over how prosperous and well-kept all the farms were. They had not been told about any of this. Arabs, they thought, were people who sat around in pyjamas bewailing their fate and waiting for the day when they could drive the Israelis out.

A special correspondent in "The Economist", London

When you encounter difficulties go ahead, when there is merit give it to others, learn from those who know more and help those who know less.

—Slogan seen on the wall of a physics laboratory at Peking University, as quoted in "Discovery", the British journal of Science.

And for every alcoholic in trouble it is estimated that there are seven other people—wives, children and so on—sucked into the maelstrom with him.

—Mr. Harold Jackson in "The Guardian"

Tanzania's homegrown wine, produce of a prison farm, small holder's plots, and the Passionist fathers' mission at Dodoma, 130 miles west of here (Dar-es-Salaam), has a new advertising image—"as subtle as a charging rhino".

The advertisement also promises that the wine will produce the excitement of Africa and all the adventure of a safari, a spokesman for the distributor said.

—A Reuter news report

Children are not a gift of the Lord that cannot be denied; births are not made in heaven. In fact, even in the Biblical myth, the onus is laid squarely on *man*, both to subdue the earth and to be fruitful and multiply, and in neither case is he to do that without responsibility or limit.

—The Bishop of Woolwich in "Twentieth Century"

Inevitably, our top set has caught on to the idea of seminars... And if American experts come, can seminars be far behind?

—From the Calcutta Diary of "NOW"

I have read a lot of Mao's thinking and it has that wonderful quality of being able to back up anything you want do.

—Mr. John Stenibeck in "The Illustrated Weekly of India"

In the past Congressmen were judged by their actions and looked upon with respect. Today also they are judged by their actions and respect is denied to them.

—Mr Raghubir Sahai, Ex-M.P.

Certain engines for Army vehicles, costing Rs 4.65 lakhs, remained unutilised for two to three years due to non-receipt of two items, one of them costing only 41 paise.

This is disclosed by the Public Accounts Committee of Parliament.

—From "Socialist Congressman"

INDIA'S ECONOMIC RELATIONS WITH JAPAN

P. A. NARASIMHA MURTHY

Here is a factual objective survey of the growing economic relations between India and Japan. Beginning with India's Second Five Year Plan, Japan has been playing an increasingly meaningful role of partnership in our growth and development. This partnership, however, is still far below the level desired by many people in both countries. Japan's economic aid to India is still relatively un-large, while trade is growing at a reasonably rapid pace.

For India as well as Japan, it is important to explore avenues of wider economic collaboration and to jointly review, and overcome, whatever obstacles to it there may exist. India's developing economy is, in certain limited spheres, competitive with Japan's—in textiles, for example, and also in light engineering goods—but India offers a promiseful field for larger Japanese investment. *Yojana* welcomes articles from economists and other knowledgeable persons on how to further expand Indo-Japanese economic relations.

RESPONDING quickly to the changing economic needs of the countries which had won freedom from empires in the wake of the Second World War, Japan emerged in the late fifties as a supplier of machinery and capital equipment by shifting its resources to heavy and precision industries. The Japanese economy had passed from the stage of rehabilitation and self-support to that of rapid expansion. Japan needed markets to sell the products of its new industries like chemicals, electrical equipment and rolling stock, and sources of raw materials to feed the new industries. India offered both. Its First Five Year Plan was nearing completion and the second Five Year Plan, with emphasis on the development of the industrial sector, was under way. The demand for all kinds of construction material and equipment was rising but the financial capacity of the country to pay for them was declining. A rapid depletion of its foreign exchange reserves compelled it to look for outside economic assistance, and naturally Japan, with its newly acquired economic capacity, seemed to be a promising source of aid. Thus, there was a realisation of each other's mutual potentialities. The Japanese industrial circles were fully aware that India could become a helpful partner in trade and commerce if it were assisted to maintain a steady rate of growth.

DEVELOPMENT AID

Japan's promise to extend economic assistance to Indian development programmes was translated into action in February 1958 when an agreement was signed by representatives of the two countries on the first Yen credit. This was a direct loan to the Government of India to enable it to import capital goods and machinery from Japan. The total amount of the credit was $50 million (Y18 billion, Rs. 230 million). The credit was expected to be fully used by 1961 but procedural difficulties prevented its utilization before 1963. Two-thirds of the credit were used for the purchase of capital goods and machinery needed for the completion of

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projects in the public sector: equipment for railways, hydro and thermal power generation, transmission and dam construction, ore-mining and processing. The remaining one-third was given to projects in the private sector: shipping, rayon and paper manufacturing, power and textile industries.

A second Yen Credit worth $ 80 million (Y 28.8 billion, Rs. 381 million) was offered in May 1961 to finance India's Third Five Year Plan which was launched in April 1961. This was later supplemented by another loan of $ 15 million (Rs. 71.4 million). This was followed by three more Yen Credits: $ 65 million (Y 23.4 billion, Rs. 310 million) in October 1963, $ 60 million (Y 21.6 billion, Rs. 285.7) million in June 1965. In all Japan has given $ 280 million (Y 100.8 billion, Rs. 1,333.8 million) for India's Third Five Year Plan.

A large portion of these credits has already been used to finance public sector projects like the Gorakhpur Fertilizer Factory, Durgapur Alloy-Steel Plant as well as to purchase electric locomotives and machinery. Besides, a number of suppliers' credits have also been given directly to Indian importers of capital goods like textile machinery, rayon plant and other equipment from Japan.

LIMITATIONS OF AID

Japan's financial assistance to Indian economic development is not comparable in either size or scale with that of the United States, the United Kingdom, West Germany and the Soviet Union. Its aid-giving policy has not been as generous as those of others because it has no political stakes in India. The Japanese look at the problem purely from a commercial angle and treat the extension of financial assistance as a necessary means of promoting their own exports. Furthermore, Japanese assistance is mostly in the form of short-term loans to help India tide over temporary balance of payments difficulties. Yet another problem is that a large portion of the Japanese loans is generally 'tied'. India is therefore bound to spend these loans on Japanese capital goods even if this involved paying a higher price than the world market price.

Inspite of all these limitations, Japanese assistance to India is quite significant, particularly in view of Japan's limited resources.

If Japan's capacity seems limited in giving financial assistance, it is almost immense in regard to technical help particularly in small-industries, fisheries and agriculture. Japan accumulated its technical skills in these fields when it had to struggle against problems similar to those which India is facing today, that is, limited (financial) resources, poor communications and a large population (compared to the smallness of Japanese territories). Avoiding the temptation to go after big projects, the Japanese chose to develop their technical skills through small or pigmy projects. And their example and experience have been transmitted to India through technical collaboration in a variety of industries, big and small. It has been realised in India that not only are the Japanese projects less expensive but their technical methods are also simpler.

TECHNICAL ASSISTANCE

As a prelude to Japan's technical assistance, the Indo-Japanese Industrial Collaboration Council was set up in 1956 with the idea of obtaining technical co-operation from Japanese machinery manufacturers in the medium-and small-scale industries. Then in 1958 the Japanese Machinery Export Promotion Committee set up an Engineering Consultant Office in Calcutta to help Indian industrialists in the establishment of small-scale industries. The Centre's main functions were to prepare cost estimates and assist in the construction of factories and purchase of plant and equipment needed by small manufacturing industries. In January 1960 India and Japan signed an agreement for the setting up of the Indo-Japanese Prototype Production and Training Centre at Howrah, Calcutta. It was formally inaugurated on 17 November, 1962 by the Japanese Minister for International Trade and Industry. Japan has given $1 million in the form of machinery and instructors to the Centre. It is expected that the Howrah Centre will develop and produce machine tools and accessories for reproduction on a commercial scale and train engineers, foremen and machine-shop assistants for small manufacturing industries.

Japanese technical assistance today is found in both public and private sectors. Among the important public sector enterprises established in collaboration with Japan are: a watch factory at the Hindustan Machine Tools (Bangalore), the Cochin Shipyard, Durgapur-Alloy Steel Plant, Gorakhpur Fertilizer Factory (urea plant), tractor manufacturing factory (Ishapore and Cossipore) production of Nissan trucks and jeeps (both under the Ministry of Defence) and medium-wave radio transmitters at Bharat Electronics. Japanese technical assistance in the private sector covers a wider range of enterprises like bicycle spokes, camera lenses, clinical thermometers, electric motors, fertilizer, fishing nets, glass syringes, heavy transformers, multipurpose jeep-tractors, railway signalling equipment, steel wire and sheet glass. Recently, Japanese industrial circles have even shown keen interest in setting up joint petrochemical industries, automobile factories and steel mills.

As part of Japan's technical assistance programme, a large number of Indian trainees are received every year for training in Japan under the Colombo Plan, International Co-operation Administration and other arrangements. Technical experts are also sent to India regularly to work on various projects.

AID FOR AGRICULTURE

Japanese collaboration is not confined to the industrial sector only. Japan has made a significant contribution to Indian agriculture and fisheries as well. In view of the world-wide reputation of the Japanese agriculture methods and techniques, a number of attempts have been made since 1953-54 to introduce them in India. In 1957 the Bihar State Government invited four Japanese farmers to visit Bihar and co-operate with the provincial agricultural officers in disseminating advanced agricultural techniques. After working in Bihar for 2½ years they moved to Sarona in Saharanpur district of Uttar Pradesh where on a 3-acre plot they tried the Japanese method of paddy cultivation. By employing superior techniques they were able to obtain 33.9 and 40.23 maunds per acre respectively in the first and second crop seasons of 1959. In 1960-61 the yields were 51.9 and 49.5 maunds per acre. This was much higher than the average yield of 20 maunds per acre obtained by the local farmers.

The success of the Saharanpur experiment led the Japanese Government to suggest to the Indian Government a plan for the despatch of similar groups to India to spread modern agricultural methods. A number of centres were to be chosen under this plan for setting up demonstration farms where the latest agricultural techniques would be employed. Indian farmers were also to be trained in advanced techniques like multi-purpose crop raising, intensive cultivation and application of chemical fertilizers. The Japanese Government volunteered to meet the travel expenses of the farmers and supply a set of agricultural implements to be used on the farms. The Indian Government was to provide land and residential accommodation to the farmers. A formal agreement on this scheme was signed on 28 April 1962 at New Delhi. The scheme was tested for a period of three years in four centres and the result was quite encouraging as can be gathered from the table below.

Per Acre Yield on the Indo-Japanese Demonstration Farms
(in maunds)

Farm	*State*	*Area*	Yield per acre 1962	1963
Ranaghat	Nadia district, West Bengal	25	22.0	32.5
Arrah	Shahabad district, Bihar	10	36.67	26.7
Chakuli	Sambalpur district, Orissa	10	26.60	43.70
Vyara	Surat district, Gujarat	13.5	38.0	44.41

The success of this experiment led to the conclusion of another agreement on 17 December 1964. By this, four new demonstration farms will be set up in four provinces.

New Indo-Japanese Demonstration Farms

Farm	*State*	*Area*
Khopoli	Colaba district, Maharashtra	10 acres
Mandya	Mandya district, Mysore	10 acres
Chengamanad	Ernakulam district, Kerala	10 acres
Bapatla	Guntur district, Andhra Pradesh	10 acres

By the terms of the Indo-Japanese Agreement on Marine Products Processing Training Centre, signed on 31 March 1962, Japan will establish a fisheries centre at Mangalore in Mysore State and provide machinery, equipment and the services of experts. The main idea behind this project is to conserve and increase fisheries resources in India's coastal waters. Besides, Japanese assistance has been sought for the establishment of a base for shrimp trawlers at Cochin, cold storage and canning plants and fish-net making centres.

INDIA-JAPAN TRADE

The rapid expansion of trade between India and Japan in recent years is one of the important aspects of their economic relations. Here again the financial assistance given by Japan has been of considerable importance. When India entered the last phase of the First Five Year Plan, its foreign exchange resources had dwindled considerably as a result of heavy imports of foodstuffs and capital equipment. There were just two ways in which India could avoid a foreign exchange crisis: cut down imports drastically or make an appeal to outside assistance. As cutting down of imports was impossible in view of the dependence of a large number of development projects on imported materials and equipment, an appeal was made to foreign sources for assistance. Japan responded to this favourably and came forward with assistance to the Second Five Year Plan. Its assistance was aimed at enabling India to import Japanese capital equipment for various construction projects. The Yen loans and suppliers' credits given by Japan have played a great part in boosting Indo-Japanese trade.

Simultaneously with the agreement on the first Yen credit, India and Japan signed a trade agreement too. Prior to this, Indo-Japanese trade was based on Article 2 of the Peace Treaty. This was a provisional arrangement. Negotiations for a new agreement began in 1957 and concluded in February 1958. The agreement is valid for an indefinite period. The signatories have agreed to grant MFN treatment to each other in the matter of business activities (including those of State trading bodies), trade, traffic, shipping and navigation and allied activities. This was the first comprehensive trade agreement between India and Japan after the War. Following this, India withdrew the application of Article XXXV of the GATT to Japanese goods in October and thus became the first Commonwealth country to liberalize trade with Japan.

COMMODITY PATTERN

The most significant feature of Indo-Japanese trade is the changing commodity pattern. In pre-war days, more than 50 per cent of Japanese exports to India consisted of textile products while nearly 4/5 of Indian exports to Japan consisted of raw cotton and cotton waste. The rise of the Indian textile industry gradually pushed out Japanese cotton textiles from the Indian market. Meanwhile the beginning of planned economic development had created a steadily increasing demand for capital goods of all kinds. This synchronized with the structural change which was taking place in the Japanese industry. Japan had developed a capacity to offer India iron and steel products, machinery and rolling stock instead of textiles as in the past, and take in return metallic and mineral ores from India. Japan's emergence as one of the leading suppliers of capital goods to India tilted the balance of trade in its favour. While India's intake of Japanese machinery, rolling stock and other capital goods has steadily increased since 1955, its exports of raw cotton, jute and tea have failed to record the same expansion. India's trade position has shown a slight improvement since 1959 owing to a steady growth of exports of metallic ores to Japan but the balance of trade is still in favour of the latter.
(See Table on next page)

Indo-Japanese Trade, 1955-1963

(in 000 rupees)

Year	*Exports to Japan*	*India's share in Japanese imports*	*Imports from Japan*	*Japan's share in total Indian exports*
1955	368,029	3.1	503,482	4.2
1956	492,449	3.29	501,419	4.2
1957	499,993	2.4	539,451	3.9
1958	354,272	2.4	403,738	2.9
1959	439,329	2.6	361,286	1.7
1960	473,684	2.2	517,685	2.7
1961	528,094	1.8	528,951	2.6
1962	443,360	1.6	568,398	2.4
1963	597,056	1.8	731,791	2.8

Source : The Journal of Industry and Trade (Directorate of Commercial Publicity, Ministry of International Trade, Government of India), October 1964,p. 1672

India became one of the chief suppliers of metallic ores to Japan in 1959. Nearly 40 per cent of its total exports to Japan today consist of ores. Mica, salt, manganese ore and iron ore account for nearly 90 per cent of the total value of ore exports from India to Japan. In 1957 India sent only 8 per cent of its manganese ore exports to Japan; in 1961 it was about 30 per cent. Japan's intake of Indian iron ore was 46 per cent of the total iron ore exports from India in 1953; in 1960 it had risen to 68 per cent. Since 1960 the percentage has declined considerably, because ore exports to Japan have failed to expand at the same pace as exports to other countries. But still iron ore is the ace foreign exchange earner in the trade with Japan.

IRON ORE EXPORTS

India s emergence as one of the principal suppliers of iron ore to Japan is due to the rapid expansion of the Japanese iron and steel industry. Today Japan produces around 40 per million tons of steel and is counted as the third largest producer after the United States and Soviet Union. This rapid expansion has been the result of a growing demand for iron and steel products from a whole range of modern heavy industries like automobiles, electric machinery, machine tools and shipbuilding. Because of the heavy dependence of the Japanese iron and steel industry on imported raw materials, iron ore exports from India have become significant in Indo-Japanese trade. Japan entered the Indian ore market in a big way in 1956 and since then its imports have steadily grown (See Table below).

Iron Ore Exports from India to Japan

(in tons)

Year	*Quantity*	*Year*	*Quantity*
1951	150,000	1957	1,368,594
1952	480,000	1958	1,252,072
1953	460,000	1959	1,688,839
1954	760,000	1960	1,974,970
1955	960,000	1961	1,599,106
1956	1,290,000	1962	1,699,153

The first major contract for long-term supply of Indian iron ore was concluded in October 1956 between the State Trading Corporation of India and the Japanese Steel Mills Association. The quantity of the ore to be shipped was 7.2 million tons at prices ranging from 80 shillings to 83 shillings per ton. Shipments were to commence in July 1957 and completed within five years. Beween 1957 and 1962 the State Trading Corporation of India signed 8 other contracts for the supply of iron ore to Japan. The steadily expanding ore trade led the two countries to set up in March 1958 a joint committee to negotiate future sales and purchases.

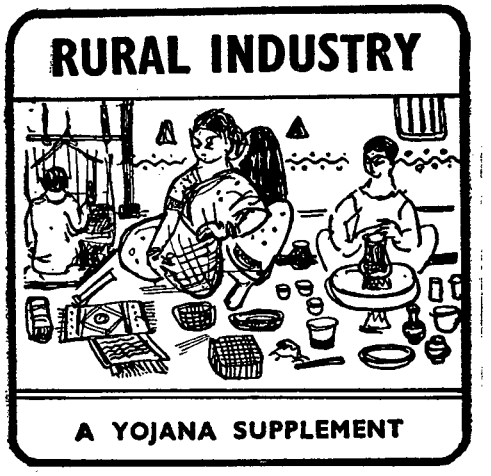
The State Trading Corporation of India (S.T.C.) has been playing a very important part in the ore trade with Japan. In July 1956 the STC obtained a partial monopoly over iron and manganese ores and in the following year it acquired a virtual monopoly over iron ore trade. Only part of the manganese ore exported to Japan is handled by it. Although it is difficult to attribute the entire growth of India-Japanese ore trade in recent years to the STC only, its intervention has been useful in concluding long-term supply contracts and regulating shipments of iron ore to Japan.

"THE GOA FORMULA"

In addition to regular exports, India sends 'special" shipments of ore from the mines in Eastern India. Th se shipments are governed by special contracts by which Japan obtains ore from India in return for machinery, equipment, and technical help supplied for the development of iron ore resources. This has come to be known as the "Goa formula" because it was first tried in Goa in 1951. The first Indo-Japanese agreement of this kind was signed on 19 October 1958 for the development of iron ore mines in the Kiriburu area of Orissa. The projects involved the opening up of mines, construction of a railway line from the mine area to the port of Vishakapatnam and the improvement of loading facilities at the harbour. The major part of the money needed for this project came from the US President's Fund for Asian Economic Development and the US Export-Import Bank. Japan agreed to provide machinery, equipment and other material worth $ 8 million. India agreed to export to Japan 2 million tons of ore per year for ten years starting from 1964. The Kiriburu Project was officially inaugurated by the Vice-President in November 1964. The second important Indo-Japanese joint development project is in Bailadila, Bastar District, Madhya Pradesh. The contract was signed in March 1960. Under this India will export 4 million tons of ore annually from Bailadila mines for a period of 15 years starting from 1966. Japan will supply machinery and equipment worth $ 21 million (Rs. 100 million). At the end of 1962 India and Japan negotiated one of the biggest projects involving the development of mines, drawing new railway lines and improvement of habour facilities. The Paradip Project, as it is called, will include the development of Daitari-Tomka iron ore mines, construction of an express highway to connect Daitari with Paradip port and the expansion of the loading facilities at the Paradip Port. The second phase of the project includes the development of Nayagarh mines and the constuction of a broad gauge railway line between the mine area and Paradip. The Whole Project is expected to be completed by 1970.

Anantpur Project (Andhra Pradesh)

A MINERAL-RICH AREA LOOKS FORWARD TO A BRIGHT FUTURE



G. JAYACHANDRUDU

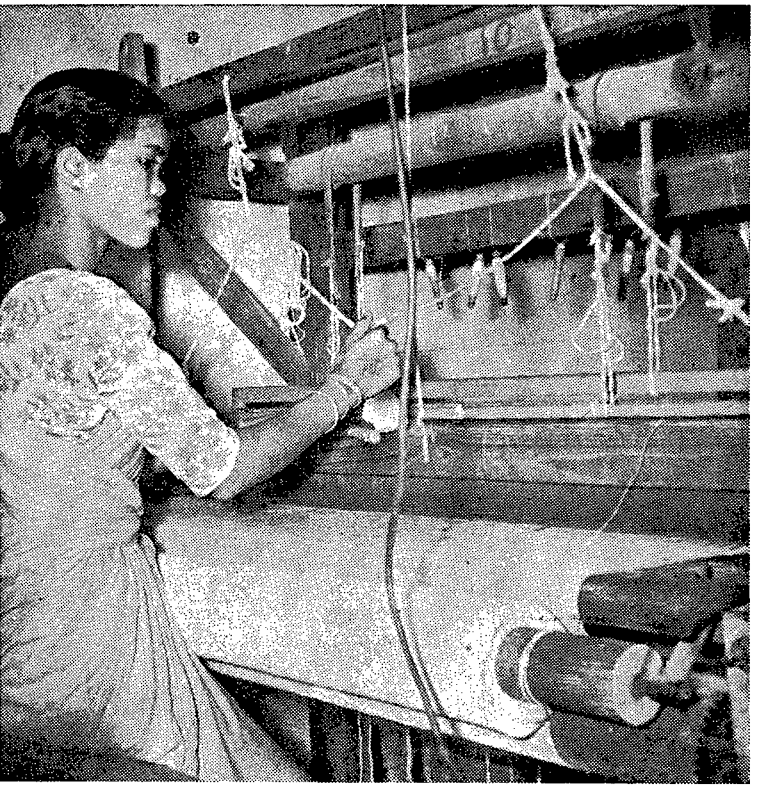
THE Rural Industries Project, Anantpur, consists of five Panchayat Samitis, viz., Gooty, Kudair, Singanamala, Dharmavaram, and Tadpatri. The Project extends over 2,888 sq. miles covering 331 villages and three small municipal towns with a total population of a little over three-and-a-half lakh.

Agriculture is the main source of livelihood for more than 80 percent of the population; the manufacturing activity provides work to only a small percentage of the working population. The total number of artisans, both skilled and unskilled, in the Project area is 22,336. In rural areas artisans usually work for the agriculturists and are paid in kind at the harvest time.

INDUSTRIAL SURVEY

The main food and commercial crops raised in the area are: paddy, Jonna (Jawar), Sajja (Bajra), Korra, Ragi, groundnut and cotton. What the Project lacks in forest resources it makes up in mineral resources. Important minerals like **barytes, chinaclay, lime stone, steatite, dalomite** and **calcite** are abundantly available in Tadpatri, Gooty and Singanamala blocks. They are at present being exploited and exported by some private contractors without processing. In 1963, a sample survey of the area was conducted with a view to exploring its industrial potentialities. The survey has also helped to assess the entrepreneurial talent and the financial resources in the private sector that could be mobilised for the development of small-scale industries in the area.

Prior to the inception of the Rural Industries Project at Anantpur, the industrial activity in the area was rather poor. There were only a few wood working and blacksmithy units in addition to some engineering workshops. Rural and semi-urban areas had concentrations of artisans like blacksmiths, carpenters, shoe-makers, tanners, potters, weavers, etc. The number of these artisans has been multiplying over a period of years and it had become difficult for them to find gainful employment. It was in this background that a programme of industrialisation was launched in this area in 1963-64.



A worker weaving bandage and gauge cloth on a loom in the Tadpatri unit. She earns Rs four-a-day.

NOTABLE ACHIEVEMENTS

In a period of four years (1963-64 to 1966-67), a total amount of over Rs. 19 lakh has been spent to generate industrial activities of various kinds. This has resulted in the establishment of 70 small scale units in the private sector, employment of 1600 additional hands, and training of 70 artisans in various trades. The National Small Industries Corporation has come forward to help the entrepreneurs to the

tune of Rs. 14 lakh, mostly in the shape of machinery on hire-purchase basis, while the State Bank of India has advanced loans totalling Rs. 2,32,000 to 16 small-scale units.

The notable small-scale industries established in the Project area are: match industry, silk twisting, soap manufacturing, manufacture of insecticides and pesticides, wooden furniture and steel furniture, engineering workshops, fruit canning and preservation, bone meal, cattle feed and rice huller screens.

The Project is running the following departmental schemes :—

Common Facility Centre in leather goods at Gooty provides improved tools to the artisans to help increase their income and skill.

ENGINEERING WORKSHOP

A general engineering workshop has been set up with the Project funds at a cost of Rs. 2,75,000 in the Assisted Private Industrial Estate, Papampalli. The main object of the scheme is to undertake the manufacture of items of rural requirements and provide repair and servicing facilities for various types of new equipment and machinery introduced in the rural areas. It is also intended to provide training in advanced techniques and methods of production to the rural artisans. In addition to the training programme, the unit has provided employment to 43 persons. The main products manufactured are agricultural implements, furniture, roof trusses, water tanks, castings, handlooms and leather bellows. The annual production of the unit has already reached Rs. 1-lakh mark.

In view of the fact that raw materials are available in abundance and there is good demand for paints and varnishes, a unit has been established by the Project at Rayalacheruvu. At present the unit is working with only four workers, but it will soon increase its production by employing 23 more hands as the new building for the unit has since been completed.

BANDAGE AND GAUGE CLOTH

A scheme for the manufacture of bandage cloth and gauge cloth is being implemented at Tadpatri. The unit which is meeting the demand of the Medical Department was started with 12 trainees who were subsequently absorbed in it as piecewage workers. At present 37 workers are employed on 27 looms, and efforts are being made to increase the number of looms to 50 to reach the production target of 800 metres per day with a total employment potential of 80 workers.

DESIGNS EXTENSION CENTRE

A Dye House-cum-Designs Extension Centre has been established at Dharmavaram where there is a concentration of silk weavers. The unit is providing the local weavers with new designs and demonstration facilities to improve their existing skills in producing fine varieties of sarees. The unit has so far produced 100 new designs and 36 of them have found wide acceptance and appreciation. The average annual out-turn of the unit comes to about Rs. 20,000.

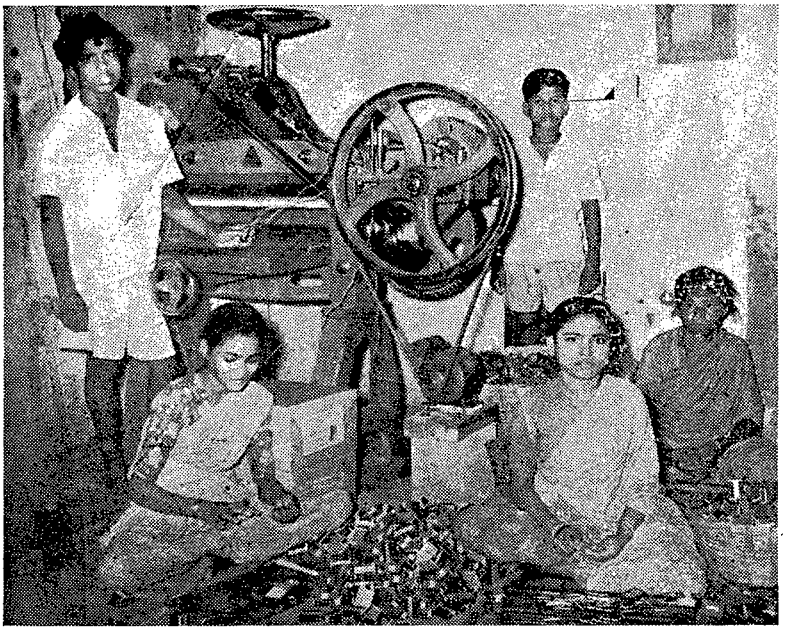
- ★ **Rs 19 lakh spent in four years**
- ★ **70 small-scale industrial units set up**
- ★ **Employment created for 1600 persons**
- ★ **Rs 14 lakh provided by the National Small Industries Corporation**
- ★ **Training of artisans improves their skill and income**

COMMON FACILITY CENTRES

The Project has started four common facility centres—two in carpentry and two in leather goods manufacture. The main aim in starting these centres is to encourage local artisans to develop their manufacturing skills so as to earn better wages. More than 80 artisans are utilising the technical guidance and improved tools provided in these centres.

One of the two common facility centres in leather goods manufacture has been started at Atmakur in Kudair Panchayat Samiti where there is a tanners' cooperative society. Twenty three members of the society are utilising the technical guidance and machinery of the common facility centre here. The society was also granted a sum of Rs 1,200 to meet the expenditure on managerial and technical assistance. The members of the society are producing good variety of shoes which sell readily in the market.

POINTERS TO PROGRESS



A paper cutting machine in operation at the Tadpatri match factory

ARTISAN BECOMES ENTREPRENEUR

S. Gudu Saheb of Gooty who, under the Project initiative, received training in welding for six months, has now started a small workshop in his home town. The Project further helped him with a loan of Rs. 5,000 for the purchase of machinery and other equipment. He purchased a welding transformer set and a bench-type drilling machine. Previously he was doing only blacksmithy work, but as a result of training he received, he has enlarged the scope and sphere of his activities. The State Bank of India, Gooty has sanctioned him a loan of Rs. 1,000 as working capital. With a total investment of Rs. 20,000 the unit has an annual out-turn of Rs. 60,000. At present it is employing five workers and there is scope for further expansion of the unit to absorb 10 more artisans.

Tailors of Pamidi Make Colourful Garments

Pamidi, a village of 10,000, is situated 20 miles away from Anantapur on the Guntakal-Bangalore metre gauge line. There are nearly 500 sewing machines with two well-established garment manufacturing units in the village. The notable feature of the tailors of Pamidi is that they manufacture attractive shirts, frocks and shorts from six-inch pieces of cloth called *chindis*, and supply them at very cheap rates. These garments are being exported to Hyderabad, Poona, Calcutta and other cities. A 24-inch shirt will not cost more than a rupee. The tailors purchase the *chindis* direct from Ahemadabad and Bombay mills and process the matching pieces into colourful garments for the labour class. The Project and the State Bank of India, Gooty are encouraging the units by providing the required financial assistance. Two button-hole stitching machines are being supplied through the National Small Industries Corporation to the local units.

CONSOLIDATING SUCCESS

Thanks to the Project help, Mr. M. Krishnamurthy is now successfully running his match factory at Tadpatri, providing employment to six workers on whole-time basis, and 65 others on piece-rate basis. Before starting the factory he went on a study tour to Sivakasi to learn the match manufacturing process. In the initial stages, he invested meagre funds from his own resources which were quite insufficient to run the factory profitably. The Project authorities sanctioned him a loan of Rs. 5,000 which enabled him to purchase a paper cutting machine and a power-operated grinder with one H.P. motor. The production capacity of the factory as well as the quality of the product was thus increased resulting in good demand. After having overcome his initial difficulties, Mr. Krishnamurthy is now consolidating his present production and has plans to expand the unit after some time.

LAWYER TAKES TO INDUSTRY

Prabhakar Babu, a lawyer at Anantapur, had evinced keen interest in starting a small-scale industry.

Anantapur district is famous for lime and orange gardens and nearly 20,000 acres of land is under these fruits which are mostly exported to other parts of the country with-

out processing. As such a unit for fruit canning and preservation was a worthwhile proposition. Prabhakar Babu who showed his keenness to try this suggestion, was deputed for training at the Government Fruit Preservation Factory and Laboratory at Anantarajupet in Cuddapah district. He was also given a loan of Rs. 20,000 for starting the industry, and assistance in getting various licences. The unit which is now temporarily located at Anantapur will be shifted to the Assisted Private Industrial Estate, Pampampalli shortly.

BULLS TO BULLOCK CARTS

Mr. Vengala Narayana Reddy is an agriculturist by profession. After careful observation of the industrial activities in the Project area, he showed interest in the manufacture of bullock carts in which line he possessed some experience. With this object in view he approached the Project authorities for financial and technical assistance. The Project provided him a loan of Rs. 5,000 for purchase of machinery. He invested another Rs. 6,000 from his own resources.

Mr. Reddy is now the proud owner of a small workshop manufacturing bullock carts and cart wheel hubs. He started the manufacture of hubs by the old method. The project authorities suggested him to use a heavy duty woodturning lathe and provided him the necessary technical guidance. After the installation of the lathe the production capacity has doubled from 300 to 600 pairs of hubs a year. The total annual value of production is Rs 40,000. Mr. Narayana Reddy says that he is not having any difficulty in marketing the product and that he can sell 1000 pairs of hubs per annum provided sufficient working capital is made available to him. As such the Project is trying to get him increased financial help from the State Bank of India, Tadpatri.

PRAYER FOR PROJECT

Kareem Sahib, a tailor belonging to Regadipalli Village in Dharmavaram block, had fallen on evil days. His left leg was amputated in the thigh 12 years ago, and he was not in a position to earn anything, having been rendered unable to operate his old rusty sewing machine. With five minor children and a wife to feed, Kareem seemed to be fighting a grim battle to keep the wolf from the door. If only he could get a new sewing machine. The Project authorities, whom he approached for assistance, came to his rescue. He was supplied with a new sewing machine after he had remitted one-fourth of the cost by selling the old machine. Prior to this his income was only one rupee a day. But the new machine has enabled him to increase the daily average income to Rs. 2-3.

Kareem Sahib is immensely pleased with his present earnings, and feels much grateful to the Project authorities for timely help without which "all the members of my family would have been forced to starve and beg." "I always pray for the success of the Project," he tells everybody with misty eyes.

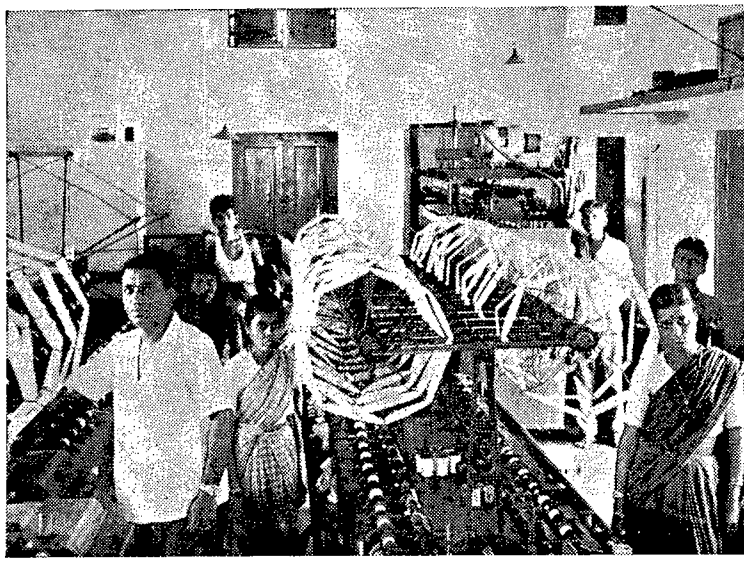
SILK TWISTING HOUSE

Dharmavaram is known for producing silk sarees which command a good market throughout India. The local silk weavers have been engaged in this profession for generations together.

Mr. Bandi Anjaneyulu, the Headmaster of the Zila Parishad Girls' High School, Dharmavaram who has been a teacher for 36 years, has started a silk twisting unit in his town. The main activity is to purchase raw silk and process it into twisted silk for warp and weft. The Project advanced him Rs. 25,000 for purchase of machinery and the party invested another Rs. 10,000 for the construction of the building from his own resources. His unit which has 120 spindles and employs 18 persons produces quality twisted silk to meet the local demand. The production capacity of the unit is being doubled by addition of another 120 spindles. The new machinery is being supplied by the National Small Industries Corporation on hire-purchase basis.

BOOK BINDING AND PRINTING

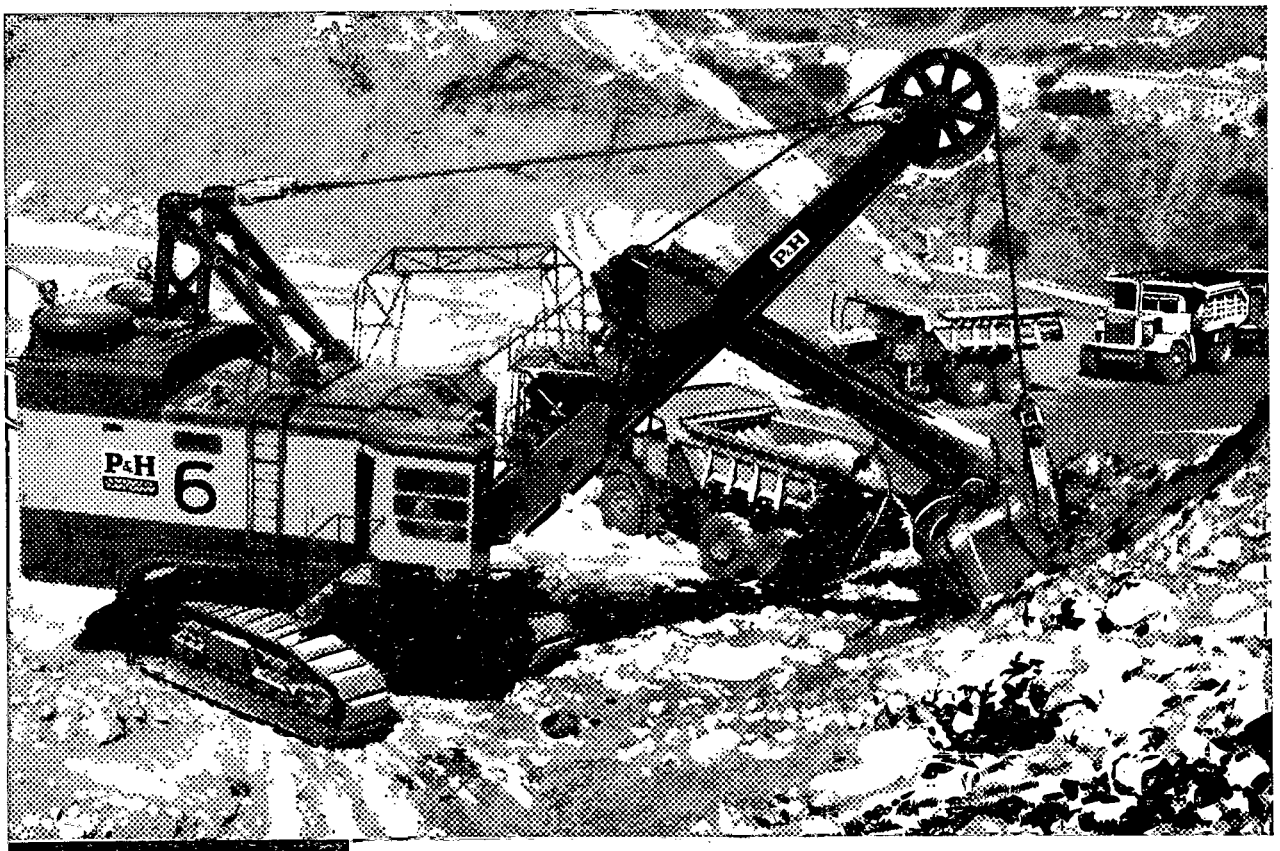
There was no organised book binding unit in Dharamavaram which is a taluk headquarters. Most of the demand for school exercise books was being met with supplies from Bangalore or Hyderabad.



A view of the silk twisting house at Dharmavaram which has 120 spindles and employs 18 persons.

On the advice of the Project authorities, Mr. Obi Reddy of Chigicherla village has set up a book binding and printing unit to meet the local demand.

The Project gave him a loan of Rs. 9,000 towards the purchase of machinery with which he purchased one paper cutting machine, one book stitching machine, one single rule making machine and one hard press. He had had to purchase printed wrapper paper from Bangalore but now he has installed a printing machine from his own resources. He will now be able to supply his own printed and bound ledger books required by the local business community. With an annual turnover of Rs. 50,000 his unit provides employment to six persons.



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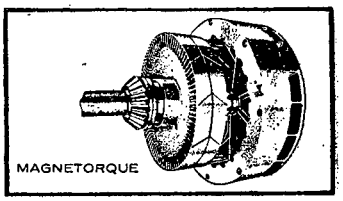

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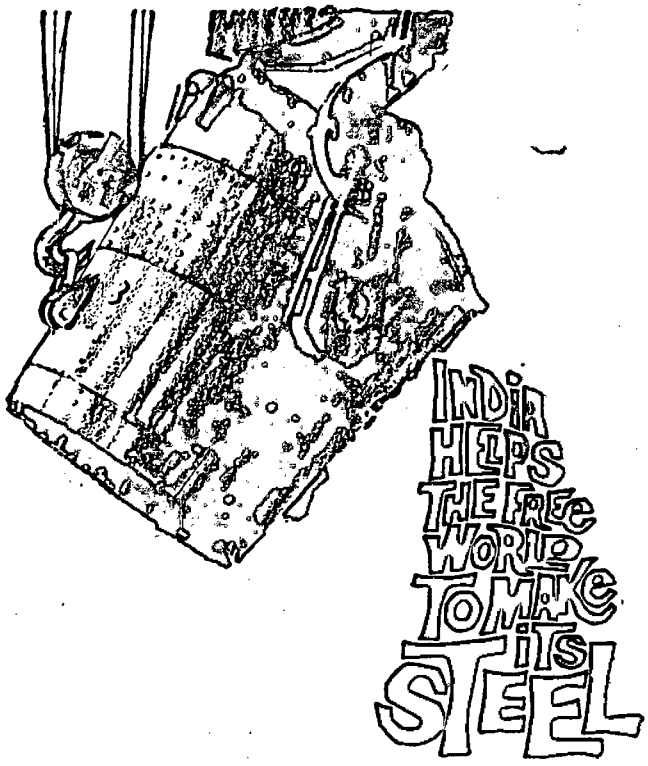

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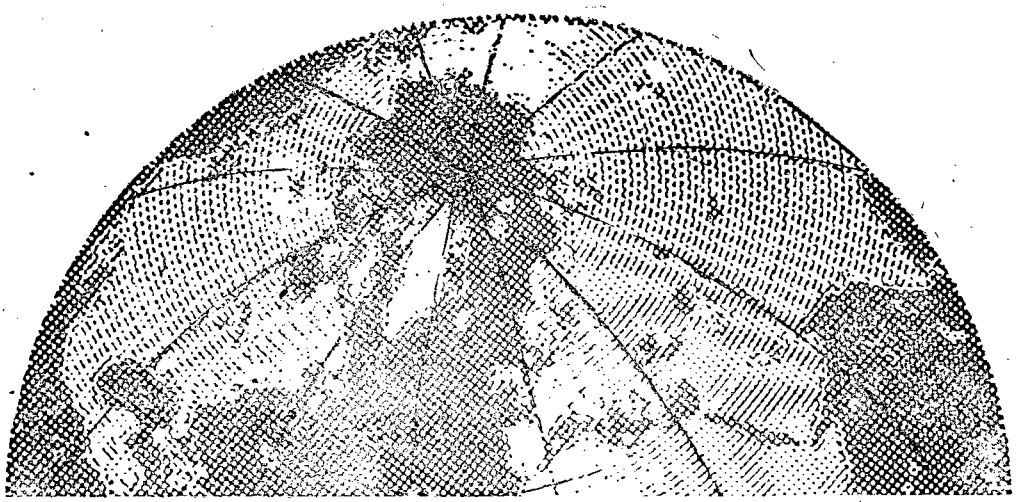

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