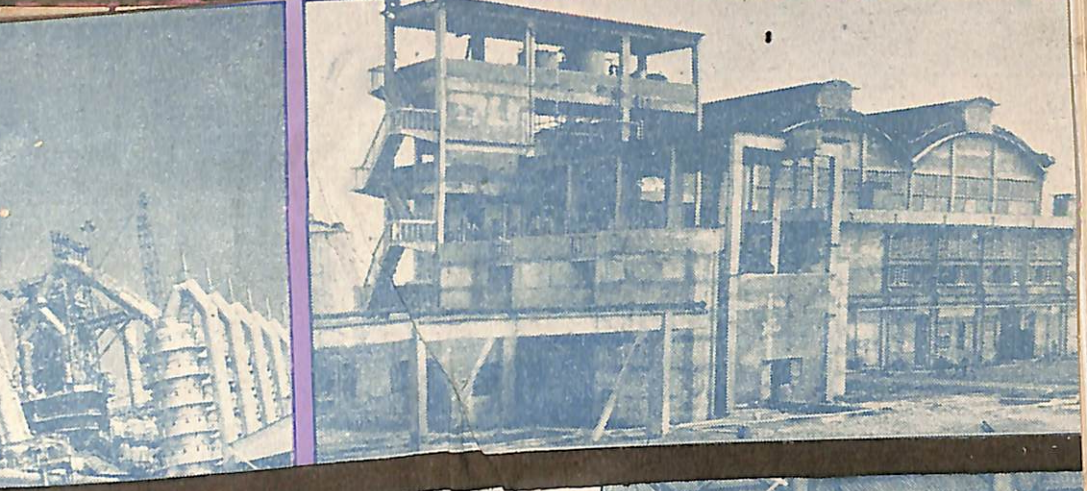
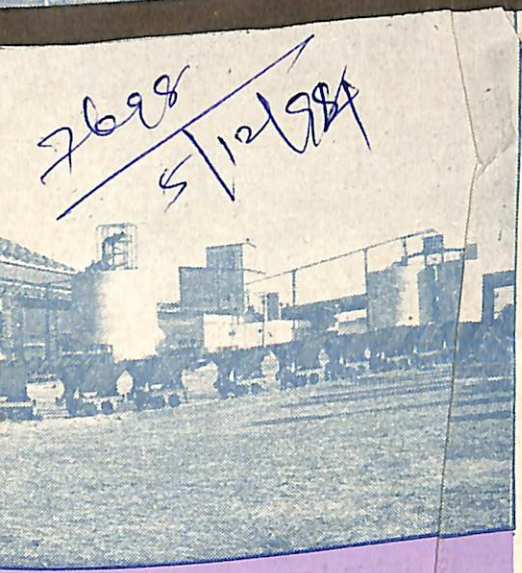
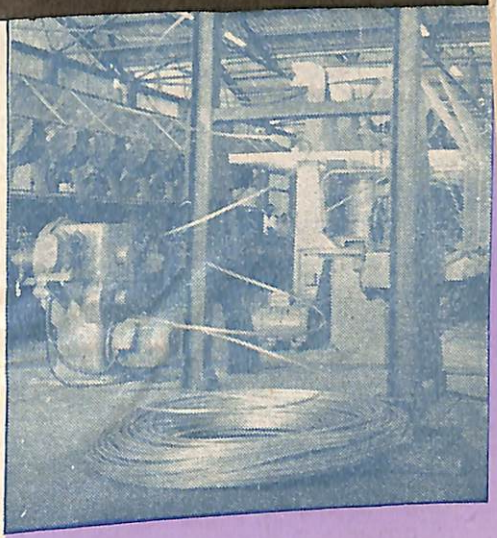


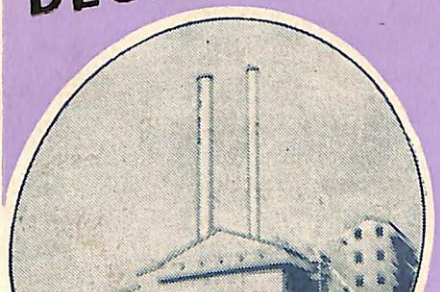




Orissa Review

INDUSTRIES SPECIAL

DECEMBER-1970



The Prime Minister Shrimati Indira Gandhi presenting Jnanpith Award to Shri Raghupati Sahai (Firaq Gorakhpuri) on November 27, 1970. Shri B. Gopal Reddy, Governor of Uttar Pradesh, is also seen in the picture

Mr. Olivier Long, Director-General, GATT and Madam Long at the Sun Temple at Konarka, "where the language of man has defected the language of stone" on November 16, 1970 in the course of their 3 day visit to Orissa

Picture shows: Madam Long examining one of the 24 massive wheel of the Sun Temple while Mr. Long looks on

ORISSA REVIEW seeks to provide a condensed record of the activities and official announcements of the Government of Orissa and other useful information. Many items appear in summarised form. Such items should not be treated as complete and authoritative versions.

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ORISSA REVIEW

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In This Issue.....

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R. N. SINGH DEO

Role of Small-Scale Industries—Challenging Dimensions

In the National perspective of all-round development, the role of small-scale industries, hitherto considered only as an adjunct to large and medium sized industries and confined to the tertiary sector, has of late acquired new and challenging dimensions. The Green Revolution through which the country is passing will soon, if it has not already done, pose problems of a magnitude which the small-scale industries sector alone, to a large extent, will have to grapple with. Some of the inputs required for sustaining and promoting further the Green Revolution will have to come from the small-scale industries. Processing and marketing of its end-products will need looking after by single or multiple ownership or co-operative ventures. Unless these pre-requisites are taken in hand in time, we may be taken unawares and may well have to face the prospect of the Green Revolution languishing in our very presence. Such a situation, besides being materially and psychologically disastrous to our rural masses, would inhibit growth in a vital sector of the Indian economy. The complementary role of the small-scale industries *vis-a-vis* the Green Revolution will, therefore, have to be firmly established.

Living at subsistence or below subsistence level has been the lot of a great majority of our people in the country-side. Higher productivity as a result of improved practices in agriculture has brought in more of purchasing power into their hands and an opportunity to aspire for a better living. Time is now to create in the rural areas the demand for a variety of consumer goods of primary necessities, all of which should come from the small-scale sector. Here is, therefore, an opportunity for the development, growth and dispersal of small-scale industries in areas of concentrated production, a locational advantage which did not exist before.

A cluster of small-scale units, agro-based and consumer-oriented in locationally advantageous rural areas is bound to provide the momentum for economic growth. Urbanised characteristics will permeate in

the area and help prevent migration of the well-to-do to nearby urban areas. Problems faced by the cities and larger towns by the continuous flow of people from rural areas would then be within manageable proportions. The containment of the rural population within the growing urbanised rural setting is therefore, a task capable of achievement by means of the small-scale industrial sector. Pressures generated on the neighbouring urban economies would then ease leading to even development of, and inter-dependance between, both the urban and rural sectors.

Out of about 5,70,000 villages, about 1,00,000 would be electrified by the end of this year. Villages electrified cover nearly 1/3rd of the rural population of the country. With massive efforts to mobilise our resources for accelerating the pace of the Rural Electrification Programme further with a view to achieve electrification of an additional one to one and half lakh villages by 1980 covering nearly 2/3rd of the rural population, all villages with a population-range of more than 500 would have been electrified. An infra-structural facility of great potency for small-scale industrialisation would be available. Our preparedness to press into service this facility will be the index of our capacity and ability to foster and sustain a country-wide net-work of diversified small-scale units contributing to the growth of the national income and the *per capita* income.

One of the long-term objectives in our Planning is to keep to the minimum further increases in the working force in agriculture. With the mounting pressure of population-growth on the one hand, and the impact of science and technology on agriculture on the other, the bulk of employment opportunities must have to come from industries, large-scale as well as small-scale. Reasonable productive employment cannot be provided to an additional labour force without rapid expansion in particular of small-scale industries. The activity would then be able to raise productivity in agriculture by increasing the demand for agricultural produce as well as by furnishing the tools, equipment and inputs needed to improve agricultural techniques with a decline in labour-deman

In undeveloped backward regions, where industrialisation has not perculated, small-scale industries can well be an economic instrument for development. So far the small industries have not succeeded in the role but have merely added to the urban industrial congestion. The weight of backwardness or under-development is heavily tilted against these backward regions that urgent attention to this problem is an imperative necessity for a stabilizing influence in socio-political spheres.

PRAGMATIC APPROACH NEEDED

The complementary role between small-scale and ancillary industries and the large and medium size industries is a well recognised one. Yet in areas where there is concentration of investment on heavy and large-scale industries, either in the public or private sectors, ancillary and small-scale industries have been slow to come up or have not come into existence at all. Of the many deficiencies contributing to the inhibiting growth of ancillaries, one that I would like to emphasize is the indifference displayed by the large industries in nourishing the growth of the ancillaries in the initial stages. This is not to say that this is a general phenomenon all over the country

There have been instances where a number of larger units have been farming out orders for small components and other items to small-scale units and ancillaries. Nor is the contribution in the shape of components supplied by ancillary units to the larger units negligible. Nevertheless the phenomenon persists in several growth centres calling for our attention. The problem however is not insurmountable if a link is established between the large scale and the ancillary units from the very start and technical and entrepreneurial guidance is provided by the larger to the smaller entrepreneur. This pre-supposes a recognition of the fundamental fact that the growth of large industries is not inimical to the small-scale sector or *vice versa*. An association and partnership between the two established from the initial stages of growth would largely contribute to the disappearance of this phenomenon. Schemes outlining the requirements of the large-scale units could be drawn up by themselves which technically-qualified persons in the small-scale sector would take up to feed the products of the scheme to the large-scale units. This, followed up by an assurance that products of these ancillaries would be consumed by the large-scale units, would go a long way in giving the lead to setting up ancillary units alongside large-scale units.

UNIFORM DISTRIBUTION OF SCARCE RAW MATERIALS

But this is not the only reason for the stifling of the growth of the ancillary industries around large-scale industries. A much more important contributory cause is the pattern of distribution of scarce raw materials and the fractional allocation of the needed quantities which prove to be the biggest disincentive for setting up new ancillary units and, where they have come up, for dwarfing their growth. While we express concern and get worried over the fact that the large units have not created the climate around them for growth and development of the ancillaries, we conveniently tend to overlook this discouraging aspect of the distribution policy. I would illustrate this by an example relating to this State which has been acknowledged to be one among the most industrially backward in the country. Our requirement of flat products is 2,000 tonnes for the new industries alone, whereas we are being given only 1,000 tonnes. The requirement of Iron and Steel and their allocation to Orissa is another illustration. Against 10,000 metric tonnes per annum required for meeting the needs of the existing industries, the allotment of steel during the last four years from 1966-67 is respectively 1925, 615, 2170 and 2238 metric tonnes, comprising 3·25, 1·45, 3·91 and 2·60 per cent of allotment for the whole country. As if this was not enough to throttle the existing units, more than 75 per cent of the allocation was in the form of G. C. I. sheets, not required at all as a raw material. Thus, while the proclaimed policy of the Government of India on the one hand is to ensure industrial development of the backward regions of the country, the implementation of this policy in the matter of allocation of raw materials is designed to keep the backward regions for ever backward by not only preventing the growth of further units but also in keeping the existing units starved. It is said that the pattern of distribution is based on the consumption of the past year for allotment of quotas and that the distribution

policy of steel has dispensed with the State-wise quota. If a uniform distribution policy and past year's consumption are to be the only guide in the matter of distribution of scarce raw materials to States, it strikes at the root of the decision taken at the highest level, after considerable discussion and study, to give preference to the backward States in order that they may be brought to the level of development of the advanced States.

BACKWARD AREAS NEED SPECIAL ATTENTION

Considerable headway has been made in the expansion of small-scale industries in the country during the last decade or two though the development registered in this direction is not evenly spread throughout . As in the case of large units, the tendency of the small-scale units also is to gravitate to those regions or centres which are fairly well-developed industrially. The problems thrown up by expansion of small-scale units in the developed areas, such as modernisation of the existing units, import substitution, marketing assistance, credit facilities, technical assistance, development of entrepreneurial talent, managerial skills exports, etc., will naturally demand a greater part of our attention. There are, however, other aspects of the matter which should receive urgent and earnest consideration. Of paramount importance is the need for ensuring dispersal of small-scale units and their promotion and development in developed and undeveloped regions of the backward States. The objective of bringing about industrial development in the backward regions does not preclude the role the small-scale industries have to play. One of our important functions should, therefore, be to devise ways and means to achieve this objective. Mere grant of fiscal and financial incentives for promotion of industries in the industrially backward States, as has been decided by the Government of India on the recommendation of the National Development Council, is not enough as these will be offset against the initial deficiencies in the infra-structural facilities. If the policy of balance regional development is to materialise in practice, special attention to the needs of the backward States for the development of the infra-structure is immediately called for. It is within the domain of the State Governments to provide some of these like road-ways, power, water on the economic side and education, health, housing and urban amenities on the social side. The more important of the facilities are, however, in the sphere of the Central Government like railways, National Highways, Ports, etc. When it comes to providing these facilities in important growth centres like Paradeep, for instance, the Ministries of the Government of India concerned with the development of Railways or Highways or Ports go about this business in a shoddy manner, either impeding the creation of infra-structure altogether or retarding the progress in its growth, which has the effect of delaying the development of these growth centres, notwithstanding the commitment to the policy of balanced regional development.

UNHELPFUL ATTITUDE

Some of the other techniques adopted by the Government of India, instead of helping industrial development of the backward States, also work against the declared policy objective. Location of industries,

ether it is in the public sector or in the vate, depends to a very large extent on nearness of the source of the raw erials required to feed them. The ease h which the cost of the infra-structure, n if it is not available at the time of locational decision, can be absorbed in rge-scale unit needs no elaboration. h large projects help in laying the ndation for industrial development in opening up employment opportu- es in all sectors which would not be erwise possible but for their location. argument that there has been no ificant increase in the *per capita* me of the people of backward States ite of the location of public sector ects in some of them is fallacious. ease in the *per capita* income dependant on a number of other plementary factors and, in any , will not be perceptible for ariety of reasons all at once. Some he States like Orissa abound in rich eral wealth and plenty of agricultural, st and marine resources. It is only an dent of history, largly due to the focus the development of Calcutta during the 100 years of foreign rule, that this e has remainded backward although potential for development is immense. ce private capital is shy and is not pared to take risks in these regions ore they are well developed, direct ticipation and involvement of the vernment of India to upgrade the area industrial development, both in the ge and medium sectors, are a vital essity. But the heavy doses of politi- ation brought to bear on industrial velopment keep away the public sector jects in the 'core' sector from the back- rd regions, affluent though they are in raw material resources. I would mention here Orissa's case for a second Steel Plant in the Fourth Plan period. Sites in Orissa was ideal in all respects from the point of view of techno-economic considerations. Iron ore, coal, lime-stone, manganese ore, quartzite and other raw materials necessary for production of iron and steel abound around the areas. An additional advantage is the existence of infra-structural facilities. The Government of India's own Consultants, who were commissioned to study sites for location of Pig Iron Complexes in the Country, were of the opinion that the location in any of the sites in Orissa would be the lowest cost location among about 30 other sites in the country. Elucidating further on this point they had observed that iron produced in Orissa and delivered in the southern region would be cheaper than that produced in the southern region itself. But these techno-economic consideration heavily in favour of a backward region like Orissa in the matter of location of a Steel Plant were of no consequence to the Government of India even when the location of three Plants in the public sector was under consideration. I would like to make it clear that this should not be construed as an objection or opposition on our part to the three Steel Plants having gone to the south. What I wish to emphasize is that a location so eminently suitable on techno-economic considerations should also have been selected for setting a Steel Plant in Orissa in the Fourth Plan period in the National interest. Even now there is time to undo this wrong and start the preliminary work for the location of another Steel Plant here in the public sector within this plan period. In this

backdrop, to expect small-scale industries which are largely in the sphere of small entrepreneurs in the private sector to grow in backward States like Orissa will be an expectation beyond the realm of realities. Unless the index of backwardness and economic considerations motivate the implementation of the policy of balanced regional development, the policy will remain only as a paper policy and all our exhortations for dispersal of industries to undeveloped, backward regions, for grant of incentives for a faster growth, etc., would remain a mere cry in the wilderness.

FLEXIBLE POLICY NEEDED

The instruments on which the Government of India seem to rely heavily for bringing about a dispersal of industries to the backward regions are the new industrial licensing policy and the Monopolies Act. Mere setting apart a few items of industries for the small-scale sector as 'reserved' for it is in no way helpful to the development of small-scale industries in the backward regions. This will accentuate small-scale industrialisation in the areas where they have already developed. Some of the larger industrial houses which have resources and know-how to set up industries in backward areas and create the infrastructure needed for further industrialisation are refused permission to do so on the ground of concentration of economic power in their hands. Before the public sector came in, it is these larger houses which were responsible for creating a network of large and medium industries including ancillaries and the base for industrial development in the country. Some of the small-scale ancillary industries would never have grown to the extent they have but for these large houses. To prevent them now to go to backward States at a time when the need for industrial development of the backward areas is recognised on all hands is to put a curb on the balanced development of all regions as well as the economic development of the country. The distinction between oppressive monopolies and largeness in size, both of which need not necessarily go together, should be taken note of. If the so-called large houses are refused licences for setting up new industries in backward States on the ground of their largeness, backwardness of these States will persist and will continue to be perpetuated. Some flexiblity in the use of the instrument of licensing must govern the disposal of applications for licences in backward States for fresh units and for the expansion of the existing units from these large houses. Fresh initiatives are therefore needed to help industrial development in the backward regions to gain momentum. On the reorientation of the approach to this problem will depend to a large extent whether the backward States will continue to be backward, with the consequent impediment to National Integration, or move forward. For these States it is not so much the question of competition between the large houses and the small entrepreneurs or the agency of development. Their concern is primarily for development by whatever means or agency it could be brought about so as to bring them alongside the already advanced States.

(Based on the speech delivered at the 28th meeting of the Small-scale Industries Board).

HARIHAR PATEL

Industrial Development of Orissa

The development of industries in Orissa has to be reviewed in the context of an agricultural base which has been predominating before the country achieved independence. The expansion of industry is a growth process which depends on so many factors like man, machine and material. For accelerating this growth, the infrastructurers like water, power communication system are very important pre-requisites. A sequence of these developments is discussed below.

CONDITION BEFORE, 1951

The *per capita* income in Orissa in 1951 was Rs. 190 as compared to Rs. 294 in India as a whole. The industrial sector was dominated by small-scale cottage type of unorganised units producing a few common domestic requirements. The organised sector at the dawn of independence included a paper mill at Brajrajnagar, a sugar factory at Rayagada, a small glass and pottery factory at Barang, a textile mill at Choudwar, a group of middle sized industries like oil mill, spinning mill and hosiery factory in the ex-State of Mayurbhanj. Therefore, the factory employment in Orissa was hardly one per cent even in 1958 as compared to 7·4 per cent in all-India. Though Orissa is an agricultural State, the productivity of agricultural sector was very low being Rs. 109 per acre as compared to Rs. 134 in India as a whole. Over and above, 69 per cent of the population of the State constitute the Scheduled Caste. Scheduled Tribes and Other Backward Classes.

NATURAL RESOURCES

Nature has been very generous to this State in endowing her with enormous resources. "Orissa accounts for nearly a third of the iron ore resources of India. About a thousand million tonnes of non-coking coal is available in the Talcher coal fields. Orissa leads in the production of manganese ore accounting for 26 to 27 per cent of the total production in the

country exclusive of Goa and probable reserves are 21 million tonnes. Almost all the chromite ore in India are found in Orissa. In limestone production, Orissa is the leading producer of high grade limestone and dolomite required for steel industry. Even on total tonnage, the State ranks second after Madhya Pradesh in limestone production. Other minerals occurring in sizeable quantities are quartzite, fire-clay, china-clay, bauxite, graphite, kyanite, asbestos, galena, and nickel: Orissa has 25,000 Sq. miles of forest covering 42 per cent of the geographical area of the State and 8 per cent of the total forest areas of the country—she has got 250 mile long coastal line, a large number of rivers and tanks, artificial lakes created by irrigation projects and the biggest natural lake in the country—the Chilika giving scope for exploitation of fisheries. There is enough water available for diversion to agriculture or industry and for generation of power".

DEVELOPMENT DURING 1951—56

The significant step that had been taken during this period was the construction of Hirakud Dam for generation of power. In absence of supply of power, the exploitation of the resources would not have been possible. Along with the construction of the Dam, systematic efforts were made for the development of industries by developing the infrastructure. Plans were made for rapid development of roads, power generation water and other facilities needed for industries. Due to these efforts a number of large scale industries were licensed for establishment in the State. These were the ferro-manganese plants at Joda and Rayagada a cement factory at Rajgangpur, a steel tube mill at Choudwar, an aluminium smelter and a cable factory at Hirakud. Most of these licences, however, materialised during the Second Plan period.

ASSESSMENT OF THE PROGRESS

Between 1951 and 1957, employment in the registered factories increased by 34 per cent against 19 per cent in India as a whole. The largest percentage increase was in mineral based non-metalic industries. The percentage of increase was 190 almost entirely on account of the establishment of a new cement plant. During this period there was also an appreciable rise in the net output per worker. Between 1951 and 1956, the increase in output per worker in Orissa was about 25 per cent (from Rs. 1,200 to Rs. 1,500) as against 12 per cent in all-India.

DEVELOPMENT DURING 1956-57 TO 1960-61

Most of the licences issued during the First Plan period as indicated above were materialised during the Second Plan period. The other significant step taken towards the end of the First Plan, as a measure of rapid industrialisation of the State, was the first public sector steel plant at Rourkela with an initial capacity to produce one million tonnes of steel.

IMPROVEMENT OF INFRASTRUCTURE

During the Second Plan period the State Government intensified their efforts to create a proper climate for rapid industrialisation. Hirakud and Machakund Hydro-Projects were put to operation with a total installed capacity of 260 MW.

Transmission lines from these Power Projects extended to Choudwar, Rourkela, Bargarh, and Rayagada. The railway link between Sambalpur and Titilagarh was started. There were substantial development of National Highways and State Highways.

PROVISION OF INCENTIVES

The State Government provided for greater incentive for development of industries. A programme for setting up five Industrial Estates was taken up in different parts of the State to provide built-up factory space for small industries.

For development of medium sized industries in the vicinity of Rourkela Steel Plant suitable steps were taken by the State Government for allotting vacant space.

The State Government also created the Orissa State Financial Corporation to provide institutional credit to the entrepreneurs. The State Bank and the Commercial Banks also entered the field of industrial financing.

The State Government again took up a new scheme known as Pilot Project Scheme of Orissa to build up "local entrepreneural talent" in the State. According to this scheme the State Government provided 90 per cent of the capital to the local entrepreneur to the new business for which the entrepreneur was being appointed as the Managing Director. Thirty-seven Companies of this type were set up during the Second Plan period. These Companies covered a varied range of industries.

Also the State Government established new commercial units at various places for varied range of production.

The cement factory at Rajgangapur added a refractory plant. That Didiers put up a modern refractory unit at Belpahar. The plan for a modern refractory unit at Lathi Kata was finalised. Many small-scale industrial Estates came up around important industrial areas of the State. The number of small-scale industries were only 300 during the First Plan. It rose up to 1,275 during the Second Plan.

AN ASSESSMENT OF THE GROWTH DURING 1956-57 TO 1960-61

No wonder, the growth of output during this period has been even higher. The NCAER have pointed out that while the net value of factory industry increased by 58 per cent during the period commencing from 1950-51 to 1956-57, the estimated increase in the following four years, i.e., from 1956-57 to 1960-61, is about 375 per cent. In absolute money value, it increased from Rs. 4·84 crores to Rs. 22 crores.

Another significant development during this period is that the share of employment in mineral based industries rose from 12·5 per cent to 31 per cent.

As per investment, the NCAER have pointed out that during the decade from 1951 to 1962, Rs. 150 crores had been invested in Rourkela Steel Plant which is roughly two-third of the total industrial investment during this period—the total investment being Rs. 234 crores.

In mineral based non-metalic industries, there have been considerable expansion.

In metalic industries, new ventures for manufacture were taken up such as aluminium and ferro-manganese. In non-mineral sector, paper manufacturing and engineering units were notable developments of this period. These developments in general and the steel plant in particular mark a major step towards the exploitation of the State's rich natural resources for industrialisation. Therefore, the NCAER in their "Techno Economic Survey of Orissa" have predicted that in course of time, it would provide impetus for growth of metal based and chemical industries which would diversify and greatly strengthen the State's industrial structure. Though NCAER have been so hopeful for the future of the State they have also pointed out that within a decade, in spite of rapid progress as is found from the statistics, the State's share to country's industrial output has been increased from 0·26 per cent to only two per cent. Hence it can be rightly concluded that though the statistics available regarding the progress in industrial development by the end of 1961 infuse a sense of complacency the achievements are not at par with the national level. In fact, there had been a considerable leeway between the levels of economic development in Orissa and the country as a whole.

PROGRESS DURING THE THIRD PLAN

Three significant aspects of the State Government's endeavour for the industrial development of the State during the Third Five-Year Plan can be pointed out. The first one is creation of a Corporation for industrial development with the object of promoting, establishing, and executing industries, projects or enterprises which would advance the industrial development of the State and simultaneously aiding, assisting and financing industrial undertakings, projects and enterprises to accelerate industrial growth.

The second is the launching up a programme of rapid industrialisation through Panchayat Samities and Grama Panchayats.

Thirdly, the State Government created one small scale industries corporation, later on named as Agro and Small Industries Corporation which was organised to cater to the requirements of the small industries and was also engaged to help these small units under the 'Panchayat Industries Programme'. Also this Corporation took up establishment of a group of industries for rehabilitation of refugees.

The production capacity of the existing Central Project, i.e., Rourkela Steel Plant was expanded from one million tonnes to 1·8 million tonnes. One Aero-Engine Factory was established in the Central Sector.

There has been some progress in the Private Sector. A fabrication unit at Kansbahal, a spinning mill at Jharsuguda, a graphite crucible manufacturing unit at Titilagarh and paper mill at Rayagada were the units which sprang up into activity during this period.

The ferro-silicon plant at Rayagada, the caustic soda plant near Chhatrapur, the co-operative sugar factory at Aska are the units which have enjoyed the finance of the Industrial Development Corporation in the shape of share capital and loan and have flourished during this period.

Another salt manufacturing unit in the coast of Ganjam district producting at present industrial grade as well as edible salt has been established with the collaboration of the Industrial Development Corporation and a private Company as a primary step for exploitation of a long stretch of coastal line of Orissa.

The Industrial Development Corporation of Orissa Limited, which was born on the 27th March 1962 has grown after an humble beginning into a big organisation within a short span of only eight years. Over and above the promotional activities mentioned above, this Corporation owns seven producing units, namely, the Kalinga Iron Works producing foundry grade pig iron of high quality using iron-ore fines and nut-coke which cannot be normally used in the conventional blast furnaces; the Hira Cement Works producing 1,200 tonnes of very high quality cement per day near Baragarh in Sambalpur district; the Hiracable Works at Hirakud producing AAC and ACSR and also copper cables of various kinds which are being supplied to various State Electricity Boards, Director-General Supplies and Disposal, and many Public and Private Undertakings and also exported to foreign countries; a Rerolling Mill at Hirakud manufacturing steel and aluminium rerolled products of various kinds; a Giant Workshop equipped with a sophisticated galvanising unit manufacturing various products such as high tension transmission towers, simple machineries for rural industrialisation, such as, sugarcanes, tile presses, rice huller, pug mill; a Ferro-Chrome Plant near Jajpur Road in the Cuttack district producing high and low carbone ferro-chrome, silico chrome; and a medium size Tile Factory in the district of Cuttack manufacturing high grade roofing ridge and flooring tiles.

INDUSTRIAL POLICY RESOLUTION

In spite of the tremendous possibilities indicated above, private industrialists have not come forward to set up industries in Orissa presumably due to wrong impression that the State Government is laying more emphasis upon Industrialising the State through the public sector alone and that the private sector had no major place in their scheme of things. But the State Government's industrial policy is based upon a pragmatic approach and not on doctrinaire consideration. The Government believes that neither the public sector nor the private sector can by itself, exploit fully the natural resources of the State. The potentialities are large enough to eliminate any possibility of conflict between the public and private sector. The Government of Orissa belives that establishment of industries devolves in a large measure on private entrepreneurs and further to accelerate the pace of industrial growth, to build up and strengthen entrepreneural activity and to encourage private investment, the State Government have decided to extend certain concessions to industrial units proposed to be set up by the 31st December 1970.

The concessions enumerated in the book "Orissa—The Investors' Paradise" are in respect of grant of licences, help in preparation of project report and feasibility report, technical guidance, financial assistance, cash refund of sales tax/purchase tax paid by the industry at the time of purchase of raw material during the initial period of

five years, reduction of sales tax in certain finished products, exemption of octroi duty upon raw material for a period of five years, power supply at a concessional rates, land to be leased out on liberal terms.

Besides, the Industrial Development Corporation of Orissa, Limited is assisting its utmost in implementation of a fertilizer plant at Talcher, which has got designed capacity to the extent of 1,500 tonnes ammonia per day. This will utilise the vast non-coking coal reserves at Talcher and will be executed by the Fertilizer Corporation of India Limited. The Corporation is now also actively engaged in assisting the Chemical and Metallurgical Design Company Private Limited for preparation of the detailed Project Report for establishment of a nickel extraction plant, which is going to be executed by the Government of India in public sector.

Apart from these projects the State Government has taken active steps for realising the steel plants at Bonai, Nayagarh and Paradip in the Central Sector. It has already presented its case to the Government of India in its various memorandum and entrusted the preparation of feasibility report to Messrs. M. N. Dastur & Co. Private Limited. The State Government has also encouraged the installation of a sal-seed oil factory at Rairangpur, which will be the first of its kind to utilise vast forest products of the country.

Lastly, it may be mentioned that Orissa is one of the few States, which has got vast mineral and forest resources. If the techno-economic considerations are regarded as the broad parameters for location of various industries like steel plant, paper factory, cement plant, coal chemicals, petro-chemicals, fabrication units, etc. it can offer suitable sites, which will not only make them profitable but also will generate sufficient national wealth for expansion of future industries. We have no doubts in our mind that in future years, Orissa will be really an Industrial Paradise.

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S. K. LALL

ON GROWTH OF INDUSTRIES

If we go into the past, we will find that pioneering efforts were made in Orissa for industrialising the State as far back as 1930. Notable among these are the efforts of the ex-State of Mayurbhanj where several industries were set up even during the pre-independence period. Unfortunately, however, most of them had to go into liquidation due to faulty management and some locational defects. After independence, Government took considerable initiative in introducing a new tempo of industrial activities keeping in view the growing demand for more jobs and more productive goods. Of these, two important schemes, namely, Pilot Project Companies and Panchayat Samiti Industries were significant. These schemes are still being run with the care and prudence that they deserve. We have had it must be confessed, some disappointing results in these two schemes, but these have not been such as to attenuate our further activities in this respect. These two schemes were mainly intended for development of local leadership in industries by creation of a large base of entrepreneurs who can be trained by active management in the Pilot Project Companies as well as in the Panchayat Samiti sector. However, the objectives of industrialisation require readjustment of our strategy for further strengthening of these two schemes—specially bringing to fruition the concept behind setting up the Pilot Project Companies—and to get into new areas of production. It was intended that the entrepreneurs who were inducted as Managing Director of Pilot Project Companies would gradually buy up the shares belonging to Government and acquire total control over these Companies. Somehow progress with regard to this particular objective has been retarded by many factors beyond the control of the State Government. During the course of the last 2 or 3 years fresh impetus has however been put towards realisation of this goal. We have made reasonably good progress by persuading the entrepreneurs to purchase shares in their respective Companies to become controlling owners.

In view of the fact that the State is suffering from chronic regional imbalance

and in view of the fact that large scale unemployment persists throughout the country, especially among the educated, a new strategy will have to be worked out for setting up of more industries in this State, specially in the small and cottage and village industries sectors and in the sector broadly known now as ancillaries to large scale units. The latter, of course, namely, the ancillaries will require setting up of a good number of large industries within the State before they can be suitably worked upon for the purpose of industrialisation of this State.

There has been quite a lot of talk about development of small industries and ancillaries within this State as well as in other parts of the country, but without any substantial results coming to hand as yet. It appears that we have been playing 'Macbeth' without Macbeth. Unless we adequately indentify the obstacles now confronting the industrialisation of the country and in particular the economically backward States, and come forward with measures to tide over these obstacles, we would not be making any breakthrough in the present complicated situation.

The current tempo of economic activities specially in industrial sector, is lacking in sufficient dynamism and I feel that it cannot achieve the national goal of ensuring productive employment and imporvement of the standard of living. We continue to be bedevilled with the problem of enormous unemployment. This experience is more keenly felt in States like Orissa which inspite of rich resources endowments, remain backward in comparison.

In any strategy of industrial development within the overall strategy of economic development, we have to take care of the prerequisities namely, agricultural productivity, savings, and industrial investments. Our efforts with regard to the same will have to be adopted to the availability of natural resources rate of population growth, pattern of production and social and institutional structures.

The States which are backward economically have been suffering from—

(a) inadequacy of the size of the local market,

(b) inadequacy of the commercial sector which not only reduces the size of the exportable market, but also puts under burden of reaching the finished goods on the small factories.

(c) general lack of local entrepreneurism,

(d) lack of adequate raw materials, and

(e) lack of sufficient number of people in specific skills.

Unless we are able to remove the aforesaid deficiencies, we cannot expect much results from investments made in the industries, specially small and village industries. To cite the example of Orissa in particular, it would be round that small industries have to depend on markets, in many cases which are outside the State, though the influence of other infrastructure facilities make it incumbent on us to locate the industries within the State. The distance of the market would not have been a problem had we been able to get proper support from a well organised trading sector. Lack of adequate commercial network has produced very adverse effects on the smaller units, quite a few of which have not been able

to stand the strains of putting their goods in distant markets. In Japan the marketing problems of small and big industries are well looked after by large number of small and big trading houses. The trading houses there act as a support for better operation of the factories by ensuring orders at competitive rates. The competition among the trading houses and good relationship maintained between the trading and industrial sectors, has been responsible for enormous expansion of small scale industries in that country.

Numerically 99·4 per cent of all manufacturers, 69·7 per cent of all employees and 50·8 per cent of all shipments are accounted for by small and medium enterprises in that country. This is also true of countries in the West, where high degree of industrialisation has been achieved. Since we have set before ourselves the goal of achieving a high rate of growth, we would derive useful lessons from the way the Japaneese have experimented successfully with this growth process. They have realised the importance of the smaller entreprises in the national economy which not only has the scope for further expansion in the course of future development of their country, but also provides a very substantial source for employment at a reasonable wage level.

The main objectives of the 4th Five-Year Plan for the development of small industries programme seems to be:—

(*a*) to improve production technique

(*b*) to encourage manufacture of quality goods,

(*c*) to encourage decentralisation and dispersal of industries,

(*d*) to promote agro-based industries, and .

(*e*) to promote ancillary units

Achievement of these objectives would require us to closely scrutinise the facilities in various forms available and evolve positive approach towards arranging liberal credit facilities, reservation of more items for small scale industries, off-loading of a number of items by large scale units for manufacture in ancillaries, adequate supply of scarce raw materials, development of technical consultancy services, tax concessions and other related matters. Scince industrial development is very intimately tied up with good entrepreneurism, Government aids in shape of incentives and training would be absolutely essential for increasing the supply of entrepreneurs. We can attack this problem presently by keeping in view large number of unemployed engineers and technicians as also others.

Keeping the above in view, a greater emphasis should have to be put on development of industries which belong traditionally to the rural sector and integrate the approach with the pace of the agricultural development now taking place in the country. In my opinion, special incentives for setting up of agro-based industries which would support the growth of agriculture in our country, would be essential. We can tie up the technocrats of different disciplines and offer them opportunities to make out a living while strengthening the process of industrialisation. Improvement of skill, supply of technical advice, supply of improved plants and machinery liberal credit, removal of subsidy in a graduated scale and organisation of artisans and craftsmen into viable

groups, should form the base for achieving reasonable rate of growth of industries.

We have heard quite a good bit about Bank nationalisation and the resultant conveniences in obtaining essential credit facilities for establishment and operation of industries. Looking at its role in Orissa, I must frankly state that it has not made much impact here as the banking facilities in the interior are yet to develop. The credit facilities do not seem to have increased, although schemes are quite promising, it would perhaps be correct to suggest that a closer intergration of Bank facilities with the growth of small industries, ancillaries and specially small sized units in the rural sector set up by technocrats, has become imperative.

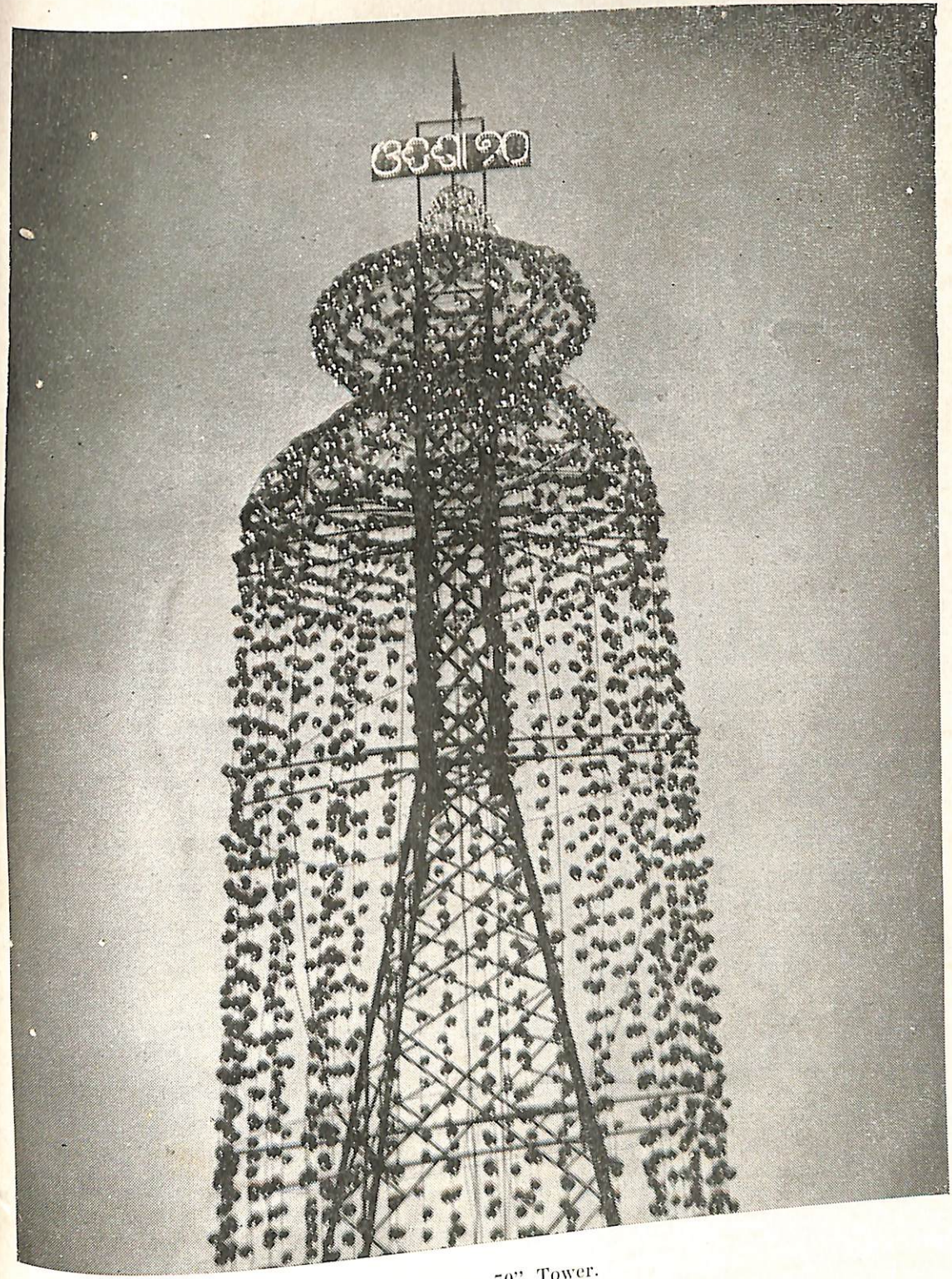
It is no doubt true that there is a lot of immaturity among the new entrepreneurs, whether they be technocrats or belong to other fields, yet it becomes our duty to nurture them with some toleration and provide them with necessary guidance.

To sum up, an effective policy for supply of infrastructure facilities, financial requirements, tax concessions and investments in dynamic sectors of the industries may be generally followed with the help of the entrepreneurs coming into existence for achieving a higher rate of growth.

INDUSTRIAL PRODUCTION RISES IN VALUE AND QUANTITY

The production of 112 items selected for study of import substitution has registered an increase of 9·9 per cent in real terms in 1969 over that in 1968. This has been revealed by an analysis undertaken by the Directorate General of Technical Development at the instance of the High-level Committee on Import Substitution.

According to a paper prepared by the D. G. T. D. the production of the 112 items studied for import substitution had increased from Rs. 23,008 million in 1968 to Rs. 26,079 million in 1969, showing an increase of 13·3 per cent in value. Among the items which have shown marked increase in production in 1969 over 1968 are : Modern rice mill machinery 388 per cent; malleable iron castings 200·4 per cent; paper makers felts 200 per cent; filtration equipment including centrifuges 199·9 per cent; plasticizers 180·6 per cent; nickel anodes 162·6 per cent and metallurgical machinery 161·9 per cent.

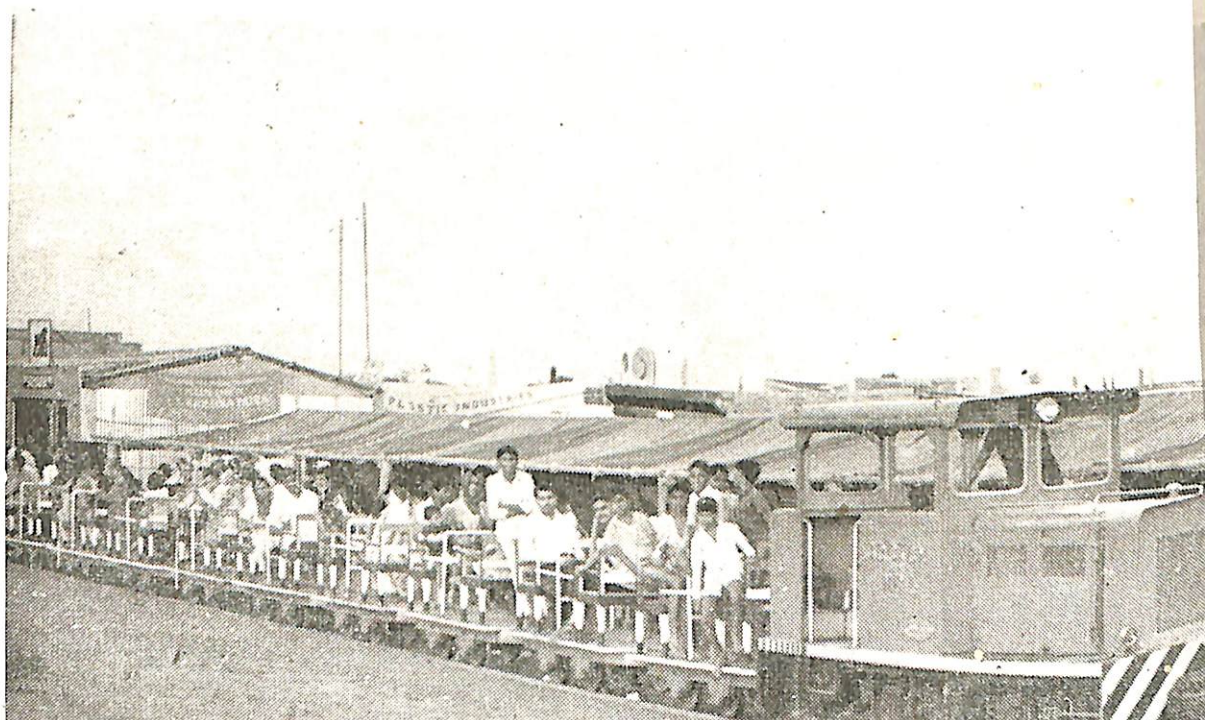


Illuminated "Orissa-70" Tower.

Main Entrance to "Orissa-70" Exhibition

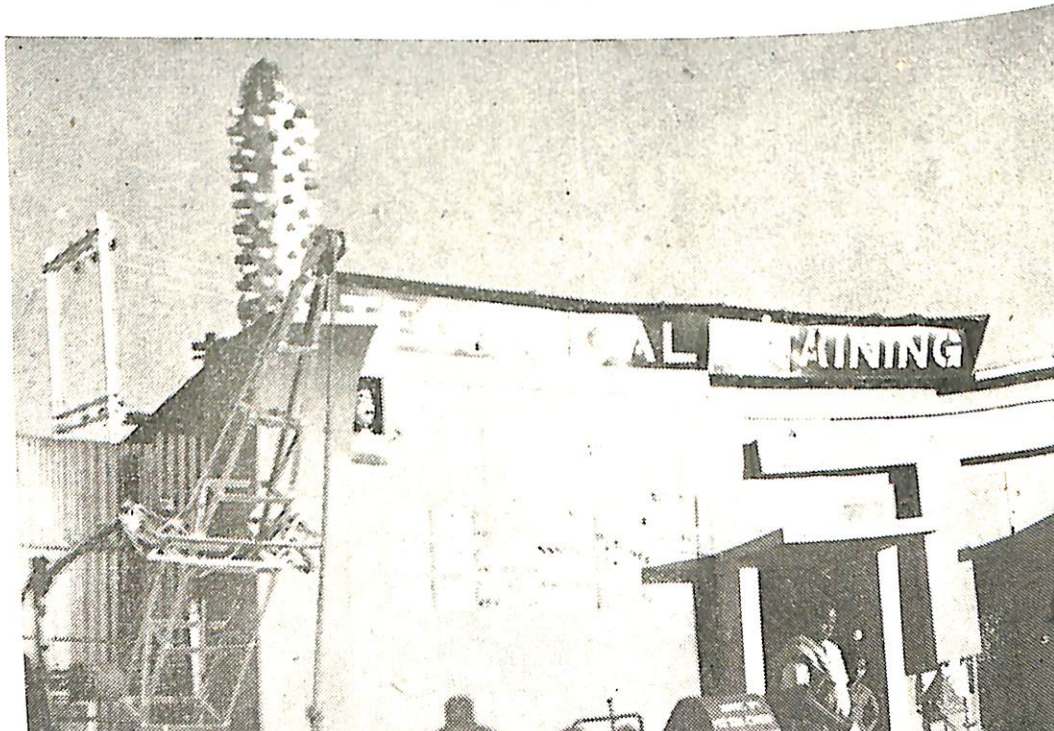
"ORISSA-70," was an unique exhibition. The first of its kind to be organised in Orissa, it symbolised the industrial advancement of the State during the year 1970 in large, medium and small-scale sector.

Toy train, the star attraction at the "Orissa—70" exhibition

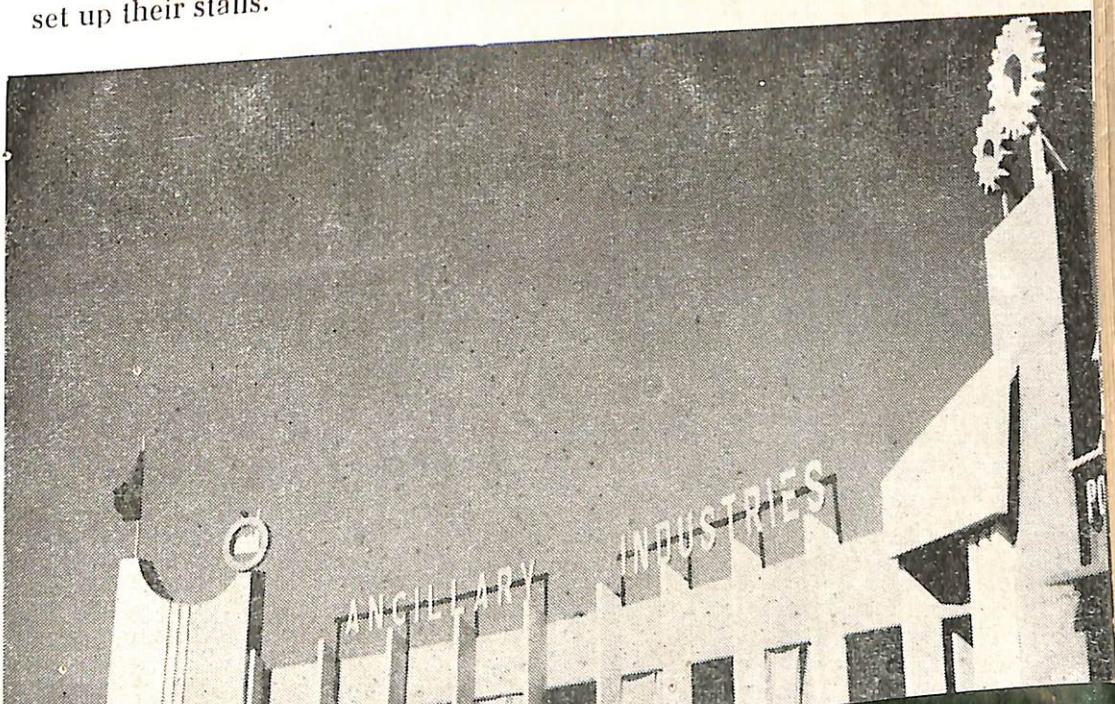


Organised by the Industries Directorate, Government of Orissa on the occasion of the 28th meeting of the All-India Small-Scale Industries Board, 'Orissa-70' actually turned into a big attraction of the year. It was not merely a show piece, but it also had its utility as a source of education, information and entertainment.

Inaugurated on November 5, 1970 by the Union Minister for Industrial Development and Internal Trade, Shri Dinesh Singh, the month-long exhibition was witnessed by over 2 lakh visitors by purchasing tickets priced at 25 paise for adults and 10 paise for children.

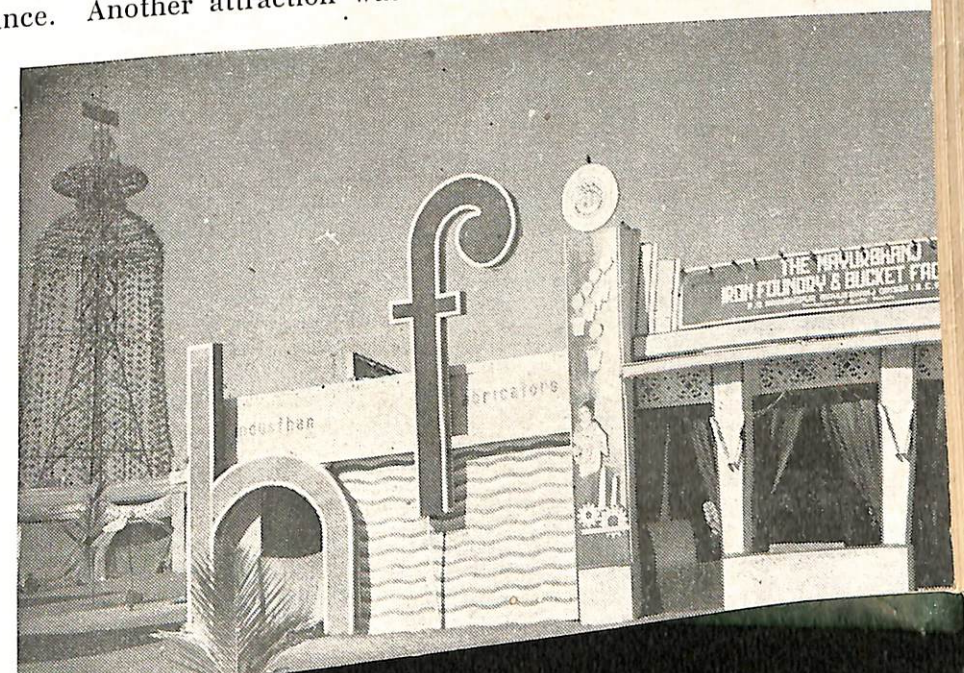


The exhibition had 96 pavilions. Major industrial concerns like the Industrial Development Corporation of Orissa Titagarh Paper Mill, Orient Paper Mill, Orissa Cement, Orissa Textile Mills, Rourkela Steel Plant, Belpahar Refractories, Jayshree Chemicals ; Government Departments like Forestry, Revenue, Mining, Labour and Employment and Fisheries had set up their stalls.

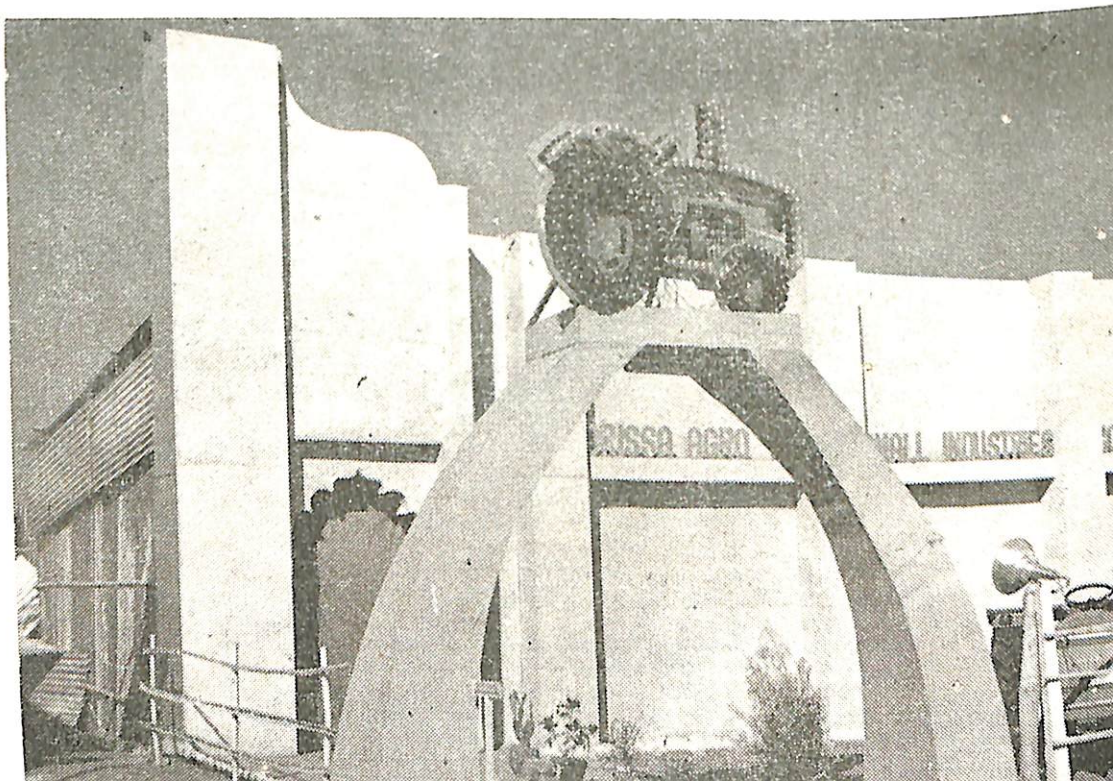


Besides, several State Sector Corporations, the State Bank of India, Mineral & Metal Trading Corporation of India and industries both in the Small and Co-operative sector had their own stalls. The exhibition was full of promises. It provided glimpses of the present state of affairs in the sphere of industrialisation.

Brooding over the maritime past of Orissa, one could get a clear idea about present export potentialities of Orissa. The varieties of goods ranged from textiles to minerals including steel. The special attraction in the exhibition was a temple shaped illuminated tower which could be visible from a long distance. Another attraction was the toy train, installed by the I. D. C.



Though primarily meant for children, adults of varying ages jampacked the booking counter to enjoy a joy ride in this toy train. It was no less an achievement for the artist and designers whose creative genius crowned the "Orissa-70" exhibition with unprecedented success.



S.N. DASH MOHAPATRA

I. D. C.: The Symbol of Orissa's Advancement

The Industrial Development Corporation of Orissa Limited, a Government of Orissa undertaking, is a giant complex, which is shaping and guiding the Orissa's industrial development. The meticulous planning and execution of IDCOL'S diverse industrial activities have brought prosperity to the Corporation within a very short time. Quite a few of its existing units are in the process of rapid expansion and new projects are being planned and also efforts are being made to give them final shape. IDCOL is a dynamic organisation representing the spirit of modern Orissa.

UNITS IN OPERATION

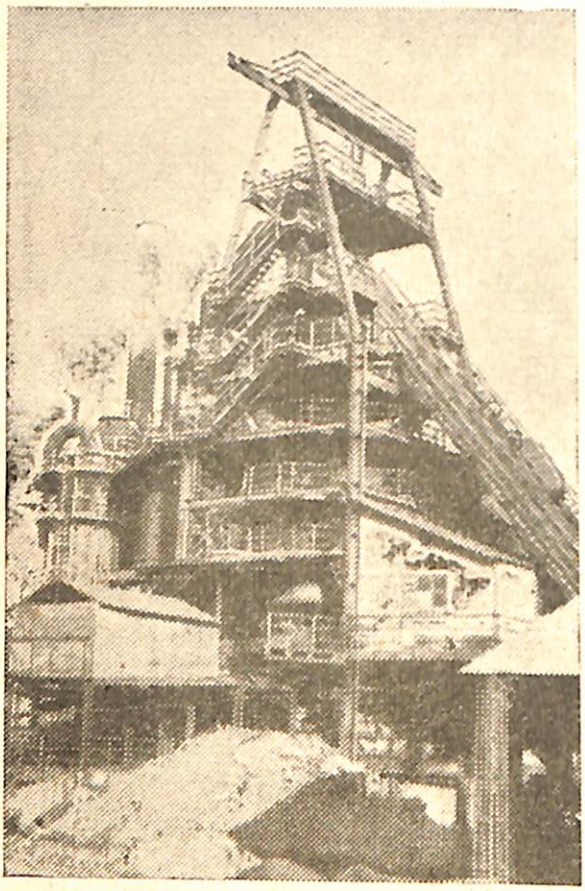
(a) Kalinga Iron Works, Barbil
(b) Hira Cement Works, Bargarh
(c) Hira Cable Works, Hirakud
(d) Hirakud Industrial Works, Hirakud
(e) Re-Rolling Mill, Hirakud
(f) Tile Factory, Choudwar
(g) Ferro-Chrome Plant, Jajpur Road
(h) East Coast Salt & Chemical Industries Limited, Sumandi.

PROJECTS UNDER PLANNING

(a) Dichromate Plant at Jajpur Road
(b) Expansion of Ferro-Chrome Plant at Jajpur Road.
(c) Ferro-Vanadium Project near Rairangpur.
(d) Sponge Iron Plant near Barbil
(e) Carbonisation Plant at Talcher
(f) Formed Coke and Pig Iron Complex at Talcher.

UNITS IN OPERATION

Kalinga Iron Works, Barbil—The Kalinga Iron Works has been set up for the production of 100,000 tonnes of foundry grade pig iron per annum. The low phosphorus content (average 0·2 per cent) in the Pig Iron enables the foundries to



Kaling Iron Works, Barbil

use the same for malleable castings as well as for high duty castings. The composition of Pig Iron offers wide latitude of dilution with mild steel scrap.

Hira Cement Works, Bargarh—This Project was commissioned in early 1968, which produces 1,200 MT of portland cement per day of the finest quality. Within a short time, the cement has found satisfactory market in Orissa as well as other States in the country. This factory also caters to the needs of national projects like Farakka, Bokaro Steel Limited, etc. The close proximity of the Dungri Limestone Quarry, which is also managed by IDCOL, assures a steady supply of raw-materials to this factory. The Hir Cement Works is a Member of C. M. A.

Hira Cable Works, Hirakud—The AA & ACSR sections of Hira Cable Work were commissioned in 1967 and the Copp section was commissioned in 1969. A present the Plant produces the following:-

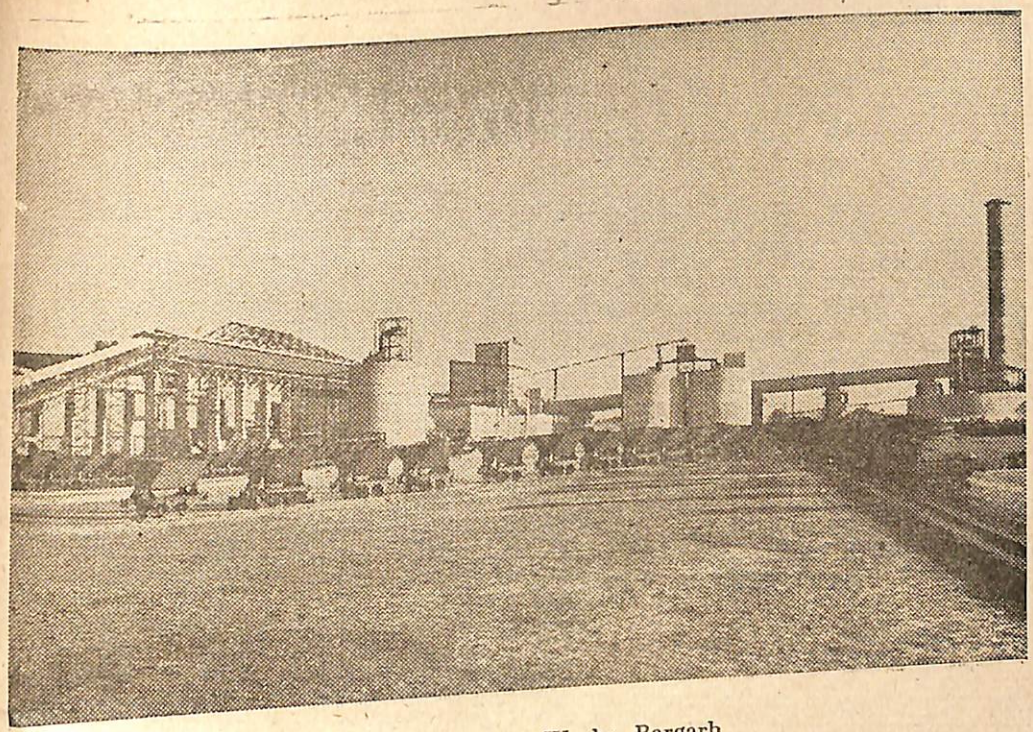
1. AAC & ACSR—capacity—7,500 M per annum.

2. Enamelled wires capacity—750 M per annum (Synthetic enamell copper wires polyvinal, pol urethene and polyster based).

3. Cotton/paper covered wires ar strips—capacity—1200 MT p annum.

The Hira Cable Works has alrea earned about Rs. 13·5 lakhs of foreig exchange through export of its product The plant has been registered with DGS and orders are being received from DGS and various State Electricity Boards of o country to supply its products. Th products have also gained popularity in th countries like Philiphines, Thailand, etc.

Hirakud Industrial Works, Hirakud- This is the oldest unit of IDCOL and manu factures a wide range of light engineerin goods such as transmission line towers an substation structures, Sugar/Rice Mi machinery and components, Pug Mill Trusses, etc. The Unit can also undertak ferrous and non-ferrous castings to spec fication. It has got spare capacity fo turning, boring, shaping, gear cuttin surface grinding and galvanising. It i also equipped with latest machineries which are manned by highly skilled workers and technicians.



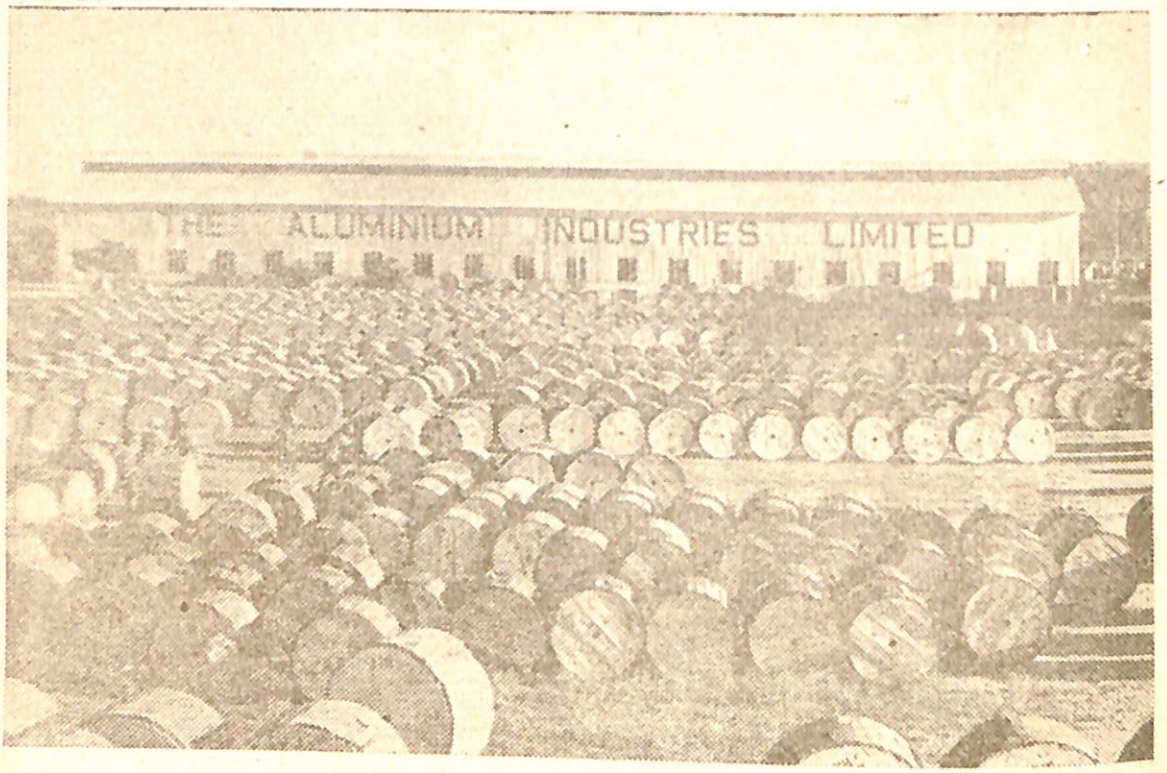
Hira Cement Works, Bargarh

Re-Rolling Mill, Hirakud—The Plant went into production in the middle of 1968 and has the rated capacity of 30,000 MT per annum. It is designed to produce M.S. Rounds, squares, angles of various dimensions, etc. It also produces aluminium and copper rods. Efforts are being made to export some of its products in the Far-East and other European countries.

Tile Factory, Choudwar—The Tile Factory at Choudwar was commissioned in the year 1968 to produce roofing tiles. ridge tiles, dust-packed bricks, dust-packed flooring tiles, common bricks and ceiling tiles. Mangalore pattern roofing tiles produced by this factory are manufactured according to I. S. I. specification. The fine combination of lightness and sturdiness of the tiles is a unique characteristic. During the year 1968-69 the sale of the tiles reached a record figure of 22 lakhs.

Ferro-Chrome Plant, Jajpur Roard—Ferro-chrome, the glamour metal is an indispensible ingredient in the manufacture of stainless steel and certain other alloy steels. The Ferro-Chrome Plant at Jajpur Road, which went into production in the month of November, 1969, has a rated capacity to produce 10,000 MT per annum chrome alloys. It has already produced high carbon ferro-chrome, silico-chrome and low carbon ferro-chrome.

The project has earned, during its one year of production, about Rs. 90·00 lakhs in foreign exchange by exporting high carbon ferro-chrome. Countries like West Germany,



Australia, Japan, Great Britain, United States and Rumania have shown great interest for puchase of the products. It has also been proposed to expand this plan to produce an additional quantity of 15,000 MT of high carbon ferro-chrome per annum.

East Coast Salt & Chemical Industries Limited, Sumandi—This is a subsidiary company of the Industrial Development Corporation of Orissa Limited, located at Sumandi (Ganjam district). It is primarily engaged for the manufacure of both industrial and edible grade salts. The salt is used as the raw material for the caustic soda plants.

PROJECTS UNDER PLANNING

Dichromate Plant at Jajpur Road—

Product: .. Sodium Dichromate—20 MT/day.

Raw-material: .. Chromite ore fines, lime stone rejects, and soda ash.

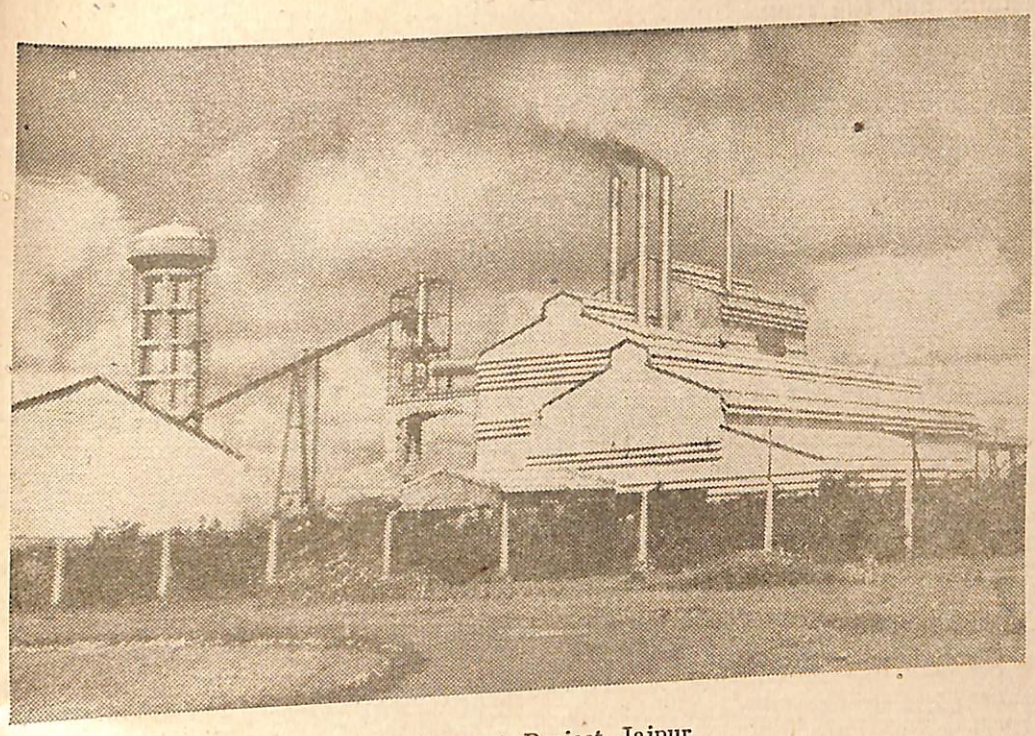
Dichromate is the starting material fo many chromite chemicals. It is used i tanning and Dye Industries to a grea extent.

Expansion of Ferro-Chrome Plant at Jajpur Road—.....

Present production: 10,000 MT of Low Carbon Ferro-Chrome, year.

Expansion programme: In addition to the above action is being taken to expand it to produce 15,000 MT of high carbon ferro-chrome annually.

Raw-materials: .. Chromite ore fiines, coal and coke fines, Quartzite, Limestone, etc.



Ferrochromme Project, Jajpur

Ferro-Vanadium Project near Rairangpur—

Products: *(a)* Ferro-Vanadium 480 MT/ year.

(b) Steel products 30,000 MT/ year.

Detailed exploration work is in progress to establish the quality and quantity of the vanadiferrous ore available in the Kumardhubi area.

Bulk samples have been sent to Norway for conducting smelting test. Preparation of the detailed feasibility report is in progress.

Sponge Iron Plant near Barbil—

Product: .. Sponge Iron 100,000 MT/year.

Raw materials .. Iron-are fines, Coal and coke fimes, line stone fines.

Significance of the plant. This will be the first sponge iron Plant in India. Sponge Iron Ore is used as a substitude to iron scrap.

Carbonisation Plant at Talcher—

Product: .. *(a)* Reactive coke 20,000 -22,000 MT/year.

(b) Tar: 2,400-2,600 MT/ year.

Reactive coke will be used in the ferro-alloy industries.

Formed Coke and Pig Iron Complex at Talcher—

Products :	..	(*a*) Formed coke 100,000 MT/year.
		(*b*) Low Phos. Iron 100,000 MT/year (Phos. below 0·14%).
Raw-materials :	..	(1) Iron-ore fi es from Tomka, Daitari and Gandhamardhan.
		(2) Coal from Talcher Lower Bottom Seam.
Special Significance of the Project :		Completely non-coking coal will be used for the first time in India for use in he blast furnace for the production of pig iron.

Planning & Design Cell—The Planning and Design Cell has been organised to promote various types of industries in the State. For Talcher Industrial Complex and Fertilizer Plant, the Cell has already made a notable contribution. Other projects which are under planning, are also being looked after by the Planning and Design Cell. The Cell is also assisting in the preparation of the Feasibility Report for the proposed Second Steel Plant in Orissa. It is also endeavouring its best to catalyse the industrial activities in the small and heavy industries both in the private and public sectors.

The Industrial Development Corporation of Orissa Limited has also assisted in the formation of some of the vital industries in the private sector. These are (1) M/s Indian Metals and Ferro-Alloys Limited Theruvali (Koraput district), which is engaged in the production of Ferro-Silicon

(2) M/s. Jayshree Chemical Limited Chartapur (Ganjam district) is engaged in the manufacture of caustic soda.

H. P. MISRA

Development of Industrial Belts in Orissa

In a vast country like India, where the population explosion is an acute problem to regulate the national economy, it is extremely important that the tempo of industrialisation should be accelerated in order to achieve the stipulated economic growth of 5-6 per cent per annum. To provide employment to her millions, to develop skills of our talented people and to raise the living standard of common mass, apparatus for planning must be strengthened in all respects to achieve this tempo and to prevent the country from a national catastrophe.

During the last three plan periods, the industrial development in this country has experienced tremendous difficulties due to changes in socio-economic and political structure. The strain and stress has crippled the growth to a great extent during the Third Five-Year Plan. In this context, it may be emphasized that in any developing country, the industrialisation is planned and guided by well-defined criteria, i.e., raw materials, water, power, transport and marketability of finished products. In Orissa although nature has provided raw materials of rare availability, abundant water and power resources, yet the transport inter-link has constituted a major bottleneck in the growth of her infrastructure. With the realisation of Cuttack-Paradip rail link and subsequently, Talcher-Bimlagarh rail link, an industrial belt, which has been conceived by us sometime back, connecting Rourkela-Bonai-Talcher-Cuttack-Paradip can be developed. Similarly, another industrial belt can also be conceived joining Banspani-Nayagarh-Gandhamardan, Tomka-Daitari-Jakhpura-Paradip. In the district of Mayurbhanj, another cross industrial belt can be developed joining Gandhamardan-Keonjhar-garh-Karanjia-Bisoi-Rairangpur, Gorumahisani. In the Koraput district, an industrial belt connecting Malkangiri, Sunki-Balimela, etc., can be developed.

In this background, the concept of

industrial belts will have to be systematically pursued for the purpose of planning of the State since no industry can find its full growth in isolation. If one realises the development of industries in Germany or in U.S.A. or in Japan, the industries always have got a system of growth, in which the final product of one industry constitutes the raw material of another industry so as to maximise the productivity. In Orissa, similar planning has to be conducted to ensure the growth of industries on some rational basis atleast for the coming two decades. In the following paragraphs, we will briefly deal with the industrial potentialities of different industrial belts on the basis of information available with us now.

ROURKELA-BONAI-TALCHER-CUTTACK-PARADIP

(a) Rourkela—Rourkela area, although well-known with the existence of the steel plant, fertilizer plant, Utkal Machinery, and many other small engineering units, has not yet fully developed. Recent survey shows that it is quite feasible to locate chemical equipment manufacturing plant near Rourkela with the plates, sheets, etc., available from the Rourkela Steel Plant.

With the intermediate products of the fertilizer plant (ethylene, ammonia, etc.) and with the bye-products of the coke oven plant (benzene, napthalene, etc.) there is possibility of realising a chain of organic chemical industries, e.g., styrene, aniline, phthalic-anahydride, dye-stuffs, caprolactum, and carbon black,etc.

A Lead Smelter can also be installed with the galena available in the district of Sundargarh.

(b)Bonai—A million tonne integrated iron and steel plant can be set up at Nonipara area, which is about 50 Kms. south of Rourkela. The elevation of the site is about 550 Ft. above mean sea level. The site is accessible by the S. E. Rly. nearest railway station being Patasai on the Bondamunda-Barsua branch of S. E. Rly., from where a branch or a siding of about 10 Kms. can be constructed to connect this site. An all-weather road connecting Rourkela, Tansa and Joda passes through this area. A large acreage of land (about 10,000 acres) is available, which ensures no limitation for its expansion.

The proposed Lodani Dam on the Brahmani river can be the potential source of water with the construction of a gravity canal from this Dam to the site.

The existing Hirakud-Talcher 132 KV grid runs at an aerial distance of 90 Kms. from the site. There are sub-station at Joda and Rourkela at a distance of 60 Kms. and 50 Kms., respectively. The proposed transmission line between Joda and Bonaigarh would pass within a distance of 3-4 Kms. from this site.

Raw materials which can meet the requirements of the steel works are as follows:—

(i) Iron-ore—This complex can use iron-ore from Khandadhar block owned by the Orissa Mining Corporation, which is about 40 Kms. from the site.

(ii) Coal—Jharia coal at a distance of 400 Kms. Ramgarh coal at a distance of 130 Kms. with suitable percentage from each meet the

coal requirement of the plant. The transport of coal from Talcher can materialise after completion of the proposed rail link between Bimlagarh and Talcher.

(iii) Limestone—Birmitrapur at a distance of 90 Kms. can be the source of limestone supply.

(iv) Manganese—Dumaro at a distance within 35 Kms. and Bansapani at a distance of about 150 Kms. will be the source of supply of manganese ore for this complex.

(c) Talcher—As it is well-known, a fer-ilizer plant is being taken up by the Fer ilizer Corporation of India Limited to roduce 1600 tones of urea per day. This ertilizer plant is based on the utilisation of non-coking coal available at a distance of 2 Kms. from the proposed site. Recently, a scheme has been finalised to instal one flushing gas report of 120 tonnes coal throughout per day to produce reactive coke for ferro-alloy industries. Arrange-ment is being made to construct a 'formed coke' unit soon, which will utilise the Talcher coal for production of shaped coke to be used in the small blast furnaces. This coke will be given thorough trial in the small blast furnaces of the Industrial Development Corporation of Orissa Limited (IDCOL) at Barbil.

Eventually, an iron complex is expected o be installed at Talcher utilising iron-ore rom Tomka and Daitari. The river Brahmani flowing nearly 6 Kms. away rom the Plant site will meet the water requirement of this industrial complex and the Talcher Thermal Station, which is close by, will cater to the power require-ment of various industries. Talcher is about 200 Kms. away from Paradip Port. So, the finished products from Talcher can be exported easily to various countries The low phosphorous pig iron produced at Talcher will meet the requirement of engineering industries to be developed in the area between Talcher, Cuttack and Paradip.

(d) Paradip—There are great potentia-lities for development of vairous industries near Paradip. If at a future date, our country needs to have a coastal based steel plant, Paradip may offer the most suitable site for following reasons:—

(i) There is abundant supply of sweet water at Paradip with close proxi-mity of river Mahanadi as well as a perennial sweet water canal. If the existing canal cannot supply sufficient amount of sweet water to the proposed steel plant, a separate pipe line of not more than 20 Kms. can be constructed from river Mahanadi to feed suffi-cient amount of sweet water for the project. This facility is not available in most of the ports of our country.

(ii) The lagoon of the Paradip port has got in its bottom sandy soil and therefore, it can be dredged to any depth to admit bigger ships. At present, the provision is made to get 60,000 tonnes.

(iii) The carrier, which is taking iron-ore to various countries, can easily obtain coking coal from the countries like Australia, etc. The

non-coking coal for blending purpose can be obtained from Talcher, which is not more than 120 miles from Paradip and is being connected by rail link.

(iv) The iron-ore can be obtained from Tomka-Daitari area, which is at a distance of 92 miles from the Port.

(v) At the first stage, the steel plant at Paradip can produce billets. which can be easily despatched to countries like Philippines, Indonesia and Malaysia, etc., where ample rolling capacity is fast developing. In this connection, it may be more advisable to export semi-finished goods than a raw material like iron-ore.

(vi) As the Paradip Port is in the process of development, lot of Government land can be made available for the steel plant without any rehabilitation problem.

Besides the steel plant, the following industries can also be planned at Paradip:

In the chemical side, a phosphatic fertilizer plant has already been planned and it is hoped that some of the private entrepreneures may take it up in the near future. This phosphatic fertilizer plant will import phosphatic rock and naphtha/ ammonia till the refinery is implemented at Paradip. A polyester plant can also be planned at Paradip. Close to Paradip Port, there are areas for development of a salt industry. As and when this salt industry is developed other industries like soda ash. ammonium chloride, caustic soda, etc., can be planned. With the instal tion of a petroleum refinery, petro-che cal complex will also gain ground. It relevant to mention here that Para may provide an excellent base for an refinery since the infrastructure at Para is well developed to realise this proje It may also be examined if it would possible to have a pipe line connecti Haldia-Paradip-Vizag to provide flexibil in the operation of the refinery and supply fuel to the mineral belt for develo ment of chemical and metallurgical indu tries in the eastern coast.

Another industry of national importan which has been planned but has not ga ground for quite some time, is the zi smelter for manufacture of zinc, sulphu acid, etc. There is ample scope for t industry to be developed at Paradip a the sulphuric acid produced will be a ba material for realisation of many oth chemical industries.

In the case of engineering industries, already mentioned above, a heavy pla and vessel unit can be established Paradip. A ship building yard may planned at a future date.

BANSPANI-NAYAGARH-GANDHA-MARDAN-TOMKA-DAITARI-JAKHPURA-PARADIP.

(a) Barbil—The Kalinga Iron Work under the management of the IDCOL ha been designed to produce foundry grade pig iron of nearly 200,000 tonnes pe annum using nutcoke and iron-ore fines.

Recently, a Sponge Iron Plant using high grade iron-ore, coke and iron-ore fines has been planned at Barbil. The Sponge Iron will be used for the production of

eel billets for the Re-rolling Mill of the DCOL at Hirakud. Besides, a Pelletisa- n Plant at Barbil is under active consi- ration of the IDCOL.

In Joda, ferro-manganese plant is in eration and other ferro-alloys industries n be set-up there.

(b) *Jajpur Road*—The IDCOL has eady installed a Ferro-Chrome Plant production of high carbon ferro-chrome, d low carbon ferro-chrome. The IDCOL s also planned to instal a dichromate nt near its Ferro-Chrome plant. Besi- , close to the Ferro-Chrome Plant, vernment of India is planning to instal ickel extraction plant.

(c) *Nayagarh*—A big iron complex can set up at Nayagarh near the village ompra, which is situated at about 1,400 above mean sea level. The proposed ayagarh-Pradip rail link can serve this with the construction of 6/7 Kms ding. The State Highway connecting mshedpur with Keonjhar via Chaibasa ill pass on the eastern boundary of the te.

A large area of 14,000 acres of land is ailable, which can very well take care its expansion together with the establi- ment of an industrial estate around this mplex. About 60 per cent of this area barren.

The proposed Jharpara Dam on the Bai- arani river will meet the water require- ment of 20—25 cusecs.

With the construction of 220 KV Tal- cher-Joda grid through Nayagarh, the transmission line will run nearly 2—3 Kms. away from the proposed site.

Raw materials which can meet the requirements of this complex are as follows:—

(i) *Iron ore*—Malangtoli block at a distance of 25 Kms can supply the iron-ore.

(ii) *Coal*—Jharia and Ramgarh at a distance of 280 and 300 Kms, respectively can meet its coal requirement.

(iii) *Limestone*—Biramitrapur at a distance of 290 Kms or alternatively, Bilaspur at a distance of 510 kms. will supply the required amount of limestone.

(iv) *Manganese*—Bansapani at a distance of 50 Kms. will supply the manganese ore to this complex.

(d) *Tomka-Daitari*—The iron-ore mines at Daitari are being developed for the export of iron-ore of plus 12 mm size. The under-sizes ranging from 6 to 12 mm. have been envisaged to be used in the iron complex at Talcher. The fines below 6 mm. can be utilised efficiently for pig iron production after necessary sintering or pelletisation. Therefore, near Tomka-Daitari, there is great possibility to instal pelletisation unit, ferro-silicon plant, etc., utilising the raw materials available nearby and the coke from Talcher.

GANDHAMARDAN-KEONJHARGARH-KARANJIA-BISOI-RAIRANGPUR-GORUMAHISANI

In this industrial belt, Joshipur has got great scope to develop China clay industry.

From Joshipur to Bisoi, there is potentially rich mineral belt in Similipal mountain range, where valuable minerals like nickel, chromium, etc., are available. This area is under investigation of the Geological Survey of India and it has been reported to be very promising.

Near Rairangpur, there are vanadium bearing titaniferrous magnetite ore deposits in Kumardubi and Betjharan areas and recently IDCOL has planned to set up a ferro-vanadium project near Gorumahisani.

In this area, refractory works, ferro-silicon plants can also be planned with the first class quartizite, clay etc., available from nearby sources.

INDUSTRIAL BELT IN KORAPUT-KALAHANDI AREA

The area near Raygada is now quite well developed with an existing ferro Silicon Plant near Theruvali, Paper Mills, Ferro-Manganese Plant, and Aero-Engine Factory near Sunabeda. Besides this, the following industries can be planned:—

(*i*) Pig Iron Plant at Umarkot

(*ii*) Integrated aluminium plant at Jeypore.

(*iii*) Cement Plant at Sunki

(*iv*) Calcium Carbide and Silicon carbide plant in Koraput District

(*v*) News-print factory at Jeypore

(*vi*) Integrated paper and pulp factory at Jeypore.

(*vii*) Hard board and plyboard factories at Joypore.

(viii) Sugar factory at Nawarangpur.

This industrial belt is not yet fully surveyed since the prospecting work in this area is still going on. In this industrial belt, the transport facility constitutes a major bottleneck and the situation has improved considerably after the construction of the new railway line to Vizag.

INDUSTRIAL BELT CLOSE TO MAHANADI BASIN

Due to the realisation of the Hirakud Dam, the area around Hirakud Dam has developed to a considerable extent with the Aluminium factory at Hirakud besides Re-rolling Mill, Cable Plant and an Industrial Works of the IDCOL. The Cement Plant of the IDCOL at Baragarh is very close to Sambalpur. Besides these, a refractory plant at Belpahar and the paper mill at Brajrajnagar are in operation for a long time. In this area, the following industries can also planned:—

(*i*) Ferro-silicon plant near Belpahar

(*ii*) Ferro-titanium industry near Sambalpur.

(*iii*) Vanaspati industries at Sambalpur

(*iv*) Breweries at Sambalpur

GANJAM AREA

In Ganjam area, a caustic soda plant is already in operation at Chhatrapur. Besides, a salt Factory of the IDCOL is

also in operation at Surla-Sumandi in the district of Ganjam. With the availability of vast costal land suitable for salt manufacturing, salt industries can be developed in large and scientific way to harvest industrial grade salt, which can help the development of some other industries like soda ash, ammonium chloride, etc.

Lastly, those industrial belts if properly planned, will provide ample scope for industrial prosperity of not only Orissa but the entire country. For realising the systematic growth, it is most important to pursue the implementation of important rail links like Talcher-Bimalgarh, Banspani-Nayagarh-Gandhamardan-Jakhpura, and lastly, Gandhamardan-Joshipur-Rairangpur. It may be mentioned here that the area enclosed by the two industrial belts i. e., (i) Rourkela-Bonai-Talcher-Cuttack-Paradip, and (ii) Banspani-Nayagarh-Gandhamardan-Tomka-Daitari-Jakhpura Paradip, can be termed at 'GOLDEN TRIANGLE' of our country from the mineral point of view and if political emotion does not stand in the way, it can provide firm base for the development of metallurgical, electrometallurgical, and chemical industries.

BEST PERFORMANCE AWARDS TO PUBLIC SECTOR

HINDUSTAN ANTIBIOTICS AND ITI WIN SHIELDS

Hindustan Antibiotics Limited and Indian Telephone Industries Limited have been awarded the Presidents' Shield for achiveing the best performance among Central Government Industrial Undertakings in the years 1965-66 and 1966-67 respectively. In addition, they have also been awarded Certificates of Merit (Copper Plate) for outstanding performance in those two years.

The awards were given away by the President, Shri V. V. Giri, at a special function held at Vigyan Bhavan, new Delhi on November 24, 1970.

Hindustan Antibiotics Limited also receved the Certificate of Merit for outstanding performance for the year 1966-67.

Other public sector undertaking which received Certificate of Merit were Hindustan Insecticides Limited and Hindustan Teleprinters Limited for 1965-66 and Manganese Ore (India) Limited for 1966-67.

The system of annual awards by the President was introduced in April 1961 as an incentive to Central Government Industrial Undertakings for better production over and above the annual targets and alround outstanding performance.

SMALL SAVINGS COLLECTION IN SUNDARGARH DISTRICT

The distri t of Sund rgarh has achieved the highest collection under Small Savings among all the distric s n the State d ring the year 1969-70 A target of Rs. 170 lakhs was fixed f r Sma l Sa ings collection and as again t this, the net collection was Rs. 68,91,200·48. The break up of col e tion is:

Head of collectio		Net collection Rs. nP.
1. 12 Years N. D. C.	..	..
12 Years N. P. S. C.		36,12,566·84
10 Years N. P. C.	..	..
2. P. O. S. B.	..	13,53,234·16
3. 7 Years N. S. C. 11 issue	..	6,360·00
4. 10 Years N. S. C. I issue	..	45,398·10
5. C. T. D. 54 Y ars	..	7,82,522·69
6. C. T. D. 10 Years	..	8,27,751·45
7. C. T. D. 15 Years	..	2,58,467 24
8. 54 Years fixed deposit	..	4,900·00
Total	..	68,91,200·48

The target should have been achieved had the Hindhustan Steel Ltd., continued to depos t their provident fund accumulati ns till the end of the year. Hi dhustan St el Ltd,, deposit d Rs. 6 lakhs from th ir provident und accumulation in 12 y ars N. D. C. duri g t e period from April, 1969 to July, 1969. Since the yield from the 12 Years N. D. C. has been less than the rates de lared by the Hindhustan Steel Ltd., under provident fund ru es, cont ibuti n to N. D. C. was discontinued from 1-7-1969.

P. S. SANTHANAKRISHNAN

Your Skill and State Bank's Service

The formation of the State Bank of India in 1955 ushered in a new era in the Indian banking system. Amongst the various priorities laid down, opening of new offices and to aid and assist the growth of Small Scale Industries received the Bank's greatest attention. The State Bank's Scheme, known as the Liberalised Scheme of Advances to Small Scale Industries, started in 1956 and has been modified from time to time, through a process of experimentation, to evolve various facilities to cater to the varied needs of Small Scale Units. It provides for assistance to a unit right from the stage of installation of plant and machinery up to the point of realisation of sale proceeds of its products. The State Bank Group's assistance to Small Scale Units and Transport Operators, as on the last Friday of September 1970, covered 47,091 units with a total limit of Rs. 315·59 crores.

In pursuance of the Bank's pioneering work in the field of financing Small Scale Industry, a new Scheme called the Entrepreneur Scheme was introduced in mid-1967 which provides for the fusion of skill and capital. The object of the Scheme is to assist craftsmen and other qualified entrepreneurs, who have worthwhile projects for setting up and operating small industries, but are unable to do so for lack of sufficient resources to provide even the minimum capital (we call it the "owner's enquity") usually required for securing loan facilities from banks. An eligible entrepreneur is one who has a worthwhile project, experience and technical know-how, integrity and the ability to make the enterprise work successfully. To start with the bank now considers only small projects where the total financial assistance to an entrepreneur can be limited to Rs. 75,000 to Rs. 1 lakh on machinery and the requisite working capital.

In keeping with the national objectives preference will be given for the establishment of (a) defence-oriented industries, (b) industries which are net savers of foreign exchange and are export oriented, (c) industries providing essential consu-

mer goods which have an assured base in domestic raw materials, and (d) industries which provide a basis for agricultural development and further industrialisation. The location of the project should admit of proper control and supervision of the Bank and should, as far as possible be secured on a rental basis to ensure that the investment in fixed assets is kept down to the minimum and in turn, enables the entrepreneur to make the best use of our financial assistance.

On receipt of full copies of the project reports, the Bank calls for reports on the technical feasibility and economic viability of the scheme from the Small Industries Service Institute and/or Director of Industries and/or any other agency, who, in the opinion of the Bank, is qualified to render this service. Once these conditions are satisfied and it is decided to finance the entrepreneur, our assistance will cover the entire range of financial requirements taking into account the meagre owner's equity. Thus, although financial assistance will be considered on a totality basis, the quantum thereof will depend upon the requirements of each project, the governing factors being the total cost of the project and the resources, if any, already available. As the Bank's advance will not be related to the owner's equity, as a reciprocal gesture, all assets available will have to be charged to the Bank.

While this is our scheme for financing of qualified entrepreneurs, there appears to be some misconception in the public mind that the scheme is intended to rehabilitate any educated unemployed. The Bank's scheme, as detailed earlier, is intended to help those qualified and experienced men already working in the industry, who have all the qualities suitable for starting a new enterprise but are unable to do so for lack of adequate risk capital of their own, which would normally be required by a banker for financing a Small Scale Unit. Entrepreneurship includes besides technical knowledge, knowledge of raw materials market, market for the goods proposed to be produced, favourable and unfavourable factors relating to the location of the Unit, personnel management, salesmanship and public relations. It is the combined knowledge of all these matters that makes it possible for an entrepreneur to succeed. It should be admitted that technical graduates just passed out of Colleges, do not have all these traits in adequate measure to make a success of an industrial venture. By providing opportunities for experienced people to establish industries of their own, opportunities are created for freshers not only to fill up the vacancies caused in the existing industries but also to further opportunities in industries started by qualified entrepreneur. The Bank, in this manner, lends its support to the technically educated unemployed youngmen of the country.

It is possible to accelerate the pace of establishment of units by qualified entrepreneurs by providing greater opportunities to technically qualified men to get themselves trained in the mechanics of organising and running an industry. This is a promotional part which the State Government or the Central Government should undertake. The Bank can also render its assistance in a small measure.

The object could be achieved by co-ordinated action on the following lines:—

(i) A survey could be carried out by the Industries Department/Small Industries Service Institute/Engineering Colleges, to identify items of manufacture which could be handled by technically qualified men (i.e., items manufacturing of which involve simple processes using lathes, grinding machines, polishing machines. etc.)

(ii) The department should draw Project Reports based on the survey, which will form guidelines to those who want to take up the production.

(iii) In order to keep down the initial investment costs, the Industries Department may arrange for the lease of the machinery available in the various Technical Training Institutes, Government-owned factories, Panchayat Industries during that part of the day when the machine is not in use, by rearranging working hours on a shift basis.

(iv) Against such approved schemes, the Bank can provide working capital against nominal equity supplied by the technically qualified candidates.

(v) When each such trainee proves his success in the field, the Bank can assist him for the establishment of his own industry on terms applicable to qualified entrepreneurs.

(vi) When each batch of successful trainees establish industries of their own, they will be releasing the leased machinery for training further batches of fresh technically qualified graduates.

Any scheme for assistance should have basic inputs for success. It will be of no service to any technically qulified graduate, or in the larger context, to the Nation, if the already frustrated technically qualified graduates are made to go through another fruitless experience which may not only lead to further frustration but also destroy their confidence in themselves and prolong their agony of an unsettled future at a time when each one of them has also to undertake further personal responsibilites arising out of his own marriage, marriage of his sisters, education of his brothers, or looking after old and ageing parents.

Although the State Bank has so far been able to assist about 500 entrepreneurs to the tune of Rs. 4·88 crores, our assistance in the State of Orissa is now confined to 4 entrepreneurs to the extent of Rs. 2·76 lakhs. With the close co-ordinaton that has been established between the Bank and the Industries Department and Small Industries Service Institute and the various facilities and infrastructure being developed by the State Government, the State Bank hopes to be better equipped to serve the growing generations of Orissa.

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GOPINATH PATNAIK

Samanta Chandrasekhar

Of all the eminent sons of the soil who had any contribution to the development of Hindu astronomy through original research during the last six centuries, Chandrasekhar undoubtedly tops the list.

Samanta Chandrasekhar was born in 1835 at Khandapara, the chief town of the then feudatory State of Khandapara, now merged in the State of Orissa and forming part of Puri district. His full name is Chandrasekhar Simha Harichandan Mohapatra Samanta. The title of 'Harichandan Mohapatra' was bestowed on him by the Raja of Puri whereas 'Simha Samanta' is the usual family surname of a male member of a Raj family other than the Raja. Yet he was familiarly known by the common people throughout Orissa as 'Pathani Samanta' a nick name given to him by his parents. The word 'Pathani' is derived from 'Pathan' meaning a Mohammedan. The reason which weighed with the parents in favour of this nick name was that they had lost their first two children in their infancy and the third (Chandrasekhar) may not meet the wrath of evil Hindu God of death if a non-Hindu name be given. The family in which Chandrasekhar was born was an orthodox one and full of superstitions. Untouchability was being practised at its highest.

At the age of about 5 years, Chandrasekhar was taught Oriya alphabet and arithmetic by a local Brahmin tutor and after few years he studied Sanskrit grammar, Puranas, Smrutis and Kavyas like Raghubansa, Kumar Sambhaba, Naisadha, Abhignana Sakuntalam and the like.

Summer is very hot at Khandapara. The forests in the surrounding area get on fire in the Summer months of April and May and this makes the heat unbearable. It is a common practice there for the people to be under the roof in the Summer mid-days and lie in the open under the canopy of heaven on the nightfall to get rid of heat. Chandrasekhar used to be by his father almost every Summar evening in the open

and recite the multiplication tables and slokas learnt from the tutors. On some such occasions, his father taught him a little of astrology and practically showed Chandrasekhar a few stars to satisfy his curiousity. At the age of ten Chandrasekhar got interested in the matter of gazing the stars and became inquisitive as to how the stars are changing position often. This phenomenon left a lasting impression in the young mind of Chandrasekhar and led him all the more to watch the movements and to discover the mysteries.

Side by side his study of Sanskrit Kabya, Smruti, Puranas was continuing unabated under the Sanskrit Pandit. The method of his study of Sanskrit Kabyas was peculiar. He would himself write out one Sloka, understand the grammatical complications, meaning from his tutor, get the sloka by heart and then proceed to the next. Thus he had a complete mastery over the Sanskrit language when he was about 18 years of age and he could recite almost all the Slokas of all Kabyas read by him. At the age of 15 Chandrasekhar had got a preliminary idea of astrology including that of horoscopy, 'Lagna' and the rules for calculating the ephemerides of planets from his father. And during practical application of these on the field he found some descrepancies which could not be reconciled. This led him to measure the distance of heavenly bodies for himself with the help of a 'manayantra' (measuring instrument) of the shape of T which he himself had devised.

At the age of 22 Chandrasekhar married a beautiful girl named Seeta of 18 years of age of a Kshyatriya family of Angul. Chandrasekhar along with his relatives a attendants proceeded in the marriage par to the bride's house as fixed earlier. soon as the parents and relatives of t bride saw the ugly appearance Chandrasekhar they refused to give th beautiful daughter in marriage to an ugl looking man like Chandrasekhar. At th there arose an alarm in the groom's par as it would be the worst insult for them go back home without the bride. As soo as Chandrasekhar came to know of th position obtaining, he went on recitin Slokas from Naisadha Charita and went o explaining the same in a loud but swe voice. This changed the minds of a assembled including the parent an reluctant relatives who held that literar qualifications are always preferable to mer handsome appearance. Marriage was pe formed and Chandrasekhar returned hom with his bride happily.

It is but natural for any educated ma of the present age to suppose tha Chandrasekhar had a well-equippe observatory at his disposal or else, how could he have proceeded so deep into the very intricate matters concerning the measurement and calculations of distances of planets and stars ? But the readers will be surprised to know that the blue sky over head was his observatory and his equipments consisted of a few spherical wheels and a Manayantra (Tangent Staff) made by the country carpenter according to his instructions. It is important to note that with the help of the crude instruments described above, he could observe and calculate the distance of heavenly bodies and stars and the results obtained were very nearly equal to those obtained by western astronomers with the aid of

modern high-powered telescopes and other precision instruments. Samanta Chandrasekhar had not seen a telescope until he came to Cuttack and saw one with Shri Jogesh Chandra Ray Bidyanidhi, Professor of Science, Government College, Cuttack. When he saw some of the planets through the telescope, his joy knew no bounds and he regretted that he could not get the help of such instruments during his early life.

However, content with his own improvised measuring instrument 'Manayantra' of which he made constant use, Chandrasekhar went on measuring the distance of heavenly bodies and stars night after night and recording systematically the results obtained. He used to spend sleepless nights even cheerfully for the purpose particularly when lunar eclipse occurred. As a result of such strenuous efforts particularly at nights for not less than twenty years and preparing in day time the Slokas carrying the results of observations obtained, his health broke and deseases like dyspepsia and colic were his constant companion.

At the age of 34 however, he completed his famous book 'Siddhanta Darpan' a treatise on astronomy written in Sanskrit language with Oriya script on palm leaves.

The name and fame of Samanta Chandrasekhar spread throughout Orissa at the first instance and ultimately reached the ears of Shri Jogesh Chandra Ray, M.A., Bidyanidhi, Professor of Physical Science, Government College, Cuttack, who in 1895 met and had conversation with Chandrasekhar on astronomical matters. It is not surprising that Shri Ray was highly impressed with Samanta Chandrasekhar's extraordinary merit from the very first meeting and conversation. This ultimately attracted Shri Ray to look into the 'Siddhanta Darpan' which was the result of Chandrasekhar's life long labour in the field of astronomical research.

Shri Jagannath Rajamani Deo, the then Raja of Mandasa, was a relative of Samanta Chandrasekhar. The former had also heard of the latter's astronomical research. The Raja of Mandasa, once accidentally met Samanta Chandrasekhar in a social gathering and from conversation with the latter came to know that he (Chandrasekhar) could predict the exact time of eclipses occurring in London and that he had written an astronomical manuscript on palm leaf which contains a fundamental theory that the earth is stationary and that the Sun is moving round the earth—a theory which runs contrary to that of the English astronomers. Curiously enough the matter was taken up by the Raja of Mandasa to the notice of English people through the Government of Madras.

Instantly came a few questions posed by the English astronomers to Samanta Chandrasekhar to answer. Chandrasekhar who was ignorant of the English language took the same to Shri Ray at Cuttack for translation into Oriya. He answered the questions in Oriya and got the same translated into English for despatch to the questioners. Chandrasekhar also posed a few questions relating to the movement of the earth and despatched them to the English astronomers for answer.

In this way, questions, answers and counter questions went on for sometime but no reconciliation or decision agreeable

to both parties could be reached. And some pressure was put on Samanta Chandrasekhar by the British Government people and material temptations were offered to him for changing his opinion and theory. Shri Ray himself who had by that time become familiar with and an admirer of Samanta Chandrasekhar also made an attempt for a change of opinion but Chandrasekhar did not budge an inch and stuck to his own opinion. He has inserted about one hundred Slokas in the 'Siddhant Darpan' in support of his theory that the earth is stationary.

To a common man it matters little whether sun is moving and the earth stationary or vice versa so long as the predictions of exact date and time of solar and lunar eclipses come true as visible to the whole world. Some of the western astronomers in an attempt at reconciliation, are said to have stated that since the matter concerns about the relative motion of two bodies, the result of calculations of time and date of solar and lunar eclipses would always be the same according to both the theories. However, the matter is yet to be set at rest in future when one of the two theories is conclusively proved to be wrong.

Samanta Chandrasekhar who had firm faith in his own theory that the earth is stationary and the sun moving, has very boldly inserted a Sloka in his 'Siddhant Darpan' on this particular issue, where he has depicted his own theory to be as powerful as a lion over that of the English astronomers which is a tusker only. Samanta Chandrasekhar had not the slightest monetary motive nor had he ever thought of getting his work printed and published. But for Shri Jogesh Chandra Ray, Bidyanidhi, the 'Siddhanta Darpan' would not have seen the light of the day. Siddhanta Darpan was printed at the Girisa Bidyaratna Press, Calcutta and published by the Indian Depository, Calcutta in 1899 with an introduction in English by Shri Jogesh Chandra Ray, M. A., Bidyanidhi.

It is a pity that Siddhanta Darpan lay as a manuscript for about 30 years before going to the Press. Among others, want of funds was not a small hurdle on the way. Shri Natabar Singh Mardaraj, the then feudatory chief of Khandapara, who is nephew (cousion brother's son) of Chandrasekhar could have easily taken up the task on himself but out of sheer animosity he turned a deaf ear. By the sincere efforts of Shri Ray and kind patronage of Shri Sudam Charan Naik, the then Superintendent of Orissa Feudatory states, money could be easily collected from Shri Mahendra Deo, the then Raja of Athamallik and Maharaja Shri Ram Chandra Bhanja Deo of Mayurbhanja.

Samanta Chandrasekhar was an adherent of truth obtained by direct observation. He did not take for granted any result arrived at by the ancient Rishis or Pandits, until and unless he saw it for himself. Thus his Siddhanta Darpan contains no result which he had not himself observed and verified. Thus he has unhesitatingly corrected any figure of ancients he found wrong. He has recorded the relative distances between the planets and stars and has laid down the manner of calculations of eclipses in his book in a lucid way which has made the task of calculation of eclipses by the subsequent astronomers all the more easy.

Few people understand the difference

between astrology and astronomy. All that the common people want is a correct almanac including the date and time of occurrence of eclipses during the year. A correct almanac was being considered in those days as an indispensable possession in every Hindu household. All the Hindu religious observances, social functions, are regulated by almanac. Besides there is horoscope making and fortune telling which depend upon the correct almanac. The general principles and rules for working out almanac are laid down in the Siddhanta Darpan and the astronomers are to work out every year an almanac accordingly. Indeed astrology is practical astronomy. It is in this way that Samanta Chandrasekhar rendered valuable service to the common man inasmuch as correct almanac could be prepared according the principles and calculations recorded in the Siddhanta Darpan. Thus Samanta Chandrasekhar had considerable influence over Hindu Society. Scores of people used to visit Chandrasekhar every day and put questions on their destiny and also on petty matters like matching of horoscopes for marriage, observance of funerals, determination of dates for marriage, thread ceremony, ear boring ceremony, etc., which an ordinary astrologer could easily solve. And Chandrasekhar not only did not refuse anybody, but gladly and ungrudgingly spent his valuable time in solving every problem put forward without any obligation. And the solutions thus given by him were like decrees given by God and unchallangeable. The then Feudatory Chief, RaJa Natabar Mardaraj used to look down upon him as according to him, Chandrasekhar was following a pursuit of a low nature befitting that of a village astrologer. Samanta Chandrasekhar who was well aware of the meanness of the Raja continued his duty unabated as if thinking "Let the dog bark but the caravan must pass".

When the relation was thus strained, the Raja was not expected to extend a helping hand towards the research work of Chandrasekhar. Instead insurmountable hurdles were put on his ways as a consequence of which Chandrasekhar was unable to make both ends meet.

Chandrasekhar was liberal minded and very kind hearted even to those who are inimically disposed towards him.

The Commissioner of Orissa had written letter to Raja of Khandapara asking him to make all necessary arrangements and send Samanta Chandrasekhar to attend a Durbar at Cuttack where the title of 'Mahamahopadhyaya' would be bestowed on him. The Raja did not act according to the orders of the Commissioner. Consequently Chandrasekhar reached Cuttack by the evening after the Durbar was over. Chandrasekhar met the Commissioner in his Bungalow, and expressed regret for his late arrival. The Commissioner ascertained from Chandrasekhar that the Raja of Khandapara was responsible for Samant's late arrival and was going to take severe action against the Raja when Samanta intervened and requested for cancellation of the proposed action against the Raja. It is on this occasion and on the Commissioner's request Chandrasekhar had measured the height of the mountain named Saptasajya in Dhenkanal, as visible from Commissioner's Bungalow with the help of his Manayantra (which he used to carry with him wherever he goes). The

Commissioner was highly impressed and pleased when he found the height determined by Samanta Chandrasekhar almost tallied with the recorded height of the mountain in the Topo maps of Commissioner's office. The proposed action against the Raja of Khandapara was dropped. A special Durbar was however held the next day and the title of Mahamahopadhyaya was conferred on him.

Towards the last part of his life a literary pension of Rs. 50 per mensem was awarded to him.

Chandrasekhar was born with a weak health. From his childhood he had to abide by the dietary restrictions befitting an orthodox family. Due to constant strain on his body resulting from his incessant labour and passing sleepless nights, he became all the more weak and emaciated. He was a staunch Hindu and used to observe the religious rites and observances including fasts very strictly. He had deep veneration for Lord Jagannath and he used to devote not less than two hours daily in worshipping his family Gods. He would not take a drop of water until and unless he finished his daily worship. He was reluctant to stay away from home lest his daily worship would be interfered with. His reverence for Lord Jagannath was so deep rooted that he had once footed the distance of 70 miles from Khandapara to Puri although a Palanqie with bearers, accompanied all the way to Puri. The fact that he has begun and ended his great work 'Siddhanta Darpan' with prayers to the Lord in a few slokas, bears ample testimony of his reverence to Lord Jagannath.

Chandrasekhar had hoped in his heart of hearts to breath his last at Puri. For this, he himself calculated from his horoscope the approximate date of death and accordingly set out for Puri after bidding farewell to his near and dear ones.

A fortnight before the due date of his expiry, he however, stationed himself at Puri and breathed his last there with his eyes fixed on the Lord Jagannath Temple in 1904. His second son Shri Gadadhar Singh Samanta who had accompanied him to Puri performed his funeral rites according to the instructions previously issued to him by Samanta Chandrasekhar.

Orissa's Industrial Policy

The Government of Orissa are committed to a policy of rapid industrialisation of the State. Orissa is endowed, in abundant measure, with valuable industrial raw materials. It has huge deposits of coal, iron and manganese, some of the country's largest deposits of chromite and limestone and vast reserves of dolomite, bauxite, graphite and quartzite etc. The installed capacity of power, which was 429 M. W. has been substantially increased by the end of 1969-70. About forty-two per cent of the State's area is covered with forests rich in commercially valuable wood species, bamboos, etc. It has the advantage of the country's deepest draft port in Paradeep, which can berth 60,000 tonne bulk carriers. The State Government attach great importance to rapid development of communication facilities in their industrial and mineral zones.

Despite these immense potentialities, private industrialists were rather reluctant to set up industries in Orissa, presumably due to an impression that the State Government were intent upon industrialising the State through public sector alone and that the private sector had no place in their scheme of things. The State Government would like to clarify that their policy of industrialisation is based upon a pragmatic approach and not on any doctrinaire consideration. Neither the public sector nor the private sector can, by itself, exploit fully all the natural resources of the State. The potentialities are large enough to eliminate any possibility of conflict between the public and the private sectors. Establishment of industries devolves, in a large mesure, on private entrepreneurs.

To accelerate the pace of industrial growth, to build up and strengthen entrepreneurial activity and to encourage private investment, the State Government have decided to extend certain concessions to industrial units proposed to be set up by the 31st December 1970. Industries proposing to avail of the concessions mentioned in this Resolution will have to undertake to—

(*i*) Fill up all unskilled jobs with local people ;

(*ii*) Give overriding preference for all other jobs to local people possessing the necessary qualifications ;

(*iii*) Provide facilities for training of candidates selected by the State Government.

The following are the concessions offered by the State Government :—

1. *Licence under the Industries (Development and Regulation) Act, 1951*—Applications for industrial licence will be examined with utmost promptitude with reference to availability of land, power etc., and deserving cases will be recommended to the Government of India for grant of licence. The State Government will also give all possible assistance to the party in securing the licence as well as the foreign exchange requirement for setting up the unit.

2. *Preparation of Project Report and Feasibility Study*—The State Government will contribute up to fifty per cent of the cost of preparation of feasibility study or Project Report provided it is done through an agency approved by them. If the Project is not implemented within the period specified in each case on merits, the study report will become the property of the State Government. If the Project is implemented, the Government's contribution towards the preparation of the report will be converted as Government's contribution towards share capital of the Project.

3. *Technical guidance*—There is a Planning & Design Cell to collect and keep information required for different industries. This Cell will supply to intending entrepreneurs necessary data to enable them to plan new industries. The Officers of the Department of Industries and the Directorate of Industries will also render all assistance to entrepreneurs including supply information and data.

A Regional Research Laboratory has been set up at Bhubaneswar by the Council of Scientific and Industrial Research of the Government of India. This organisation renders assistance in the matter of evolving new processes and designing equipment and machinery. Technical guidance is available to small-scale industries from the Small Industries Service Institute of the Government of India located at Cuttack.

4. *Financial assistance*—The State Government will give financial assistance to deserving industries in the form of share capital, loans, Government guarantees etc., under the State-Aid to Industries Act. Loans are also being given to industries by the Orissa State Financial Corporation. The Orissa State Financial Corporation and the Industrial Development Corporation of Orissa, Limited also underwrite issue of equity shares in suitable cases.

5. *Sales Tax*—The Government shall give a cash refund of the Sales Tax/Purchase Tax paid by the Industry on raw materials purchased by it during the initial period of five years of its production.

The State Government are also considering reduction in the rate of sales tax in respect of certain finished products.

6. *Octroi Duty*—All industries will be exempted from payment of Octroi on machinery brought for the purpose of setting up of new industries and expansion and renovation of existing industries. Raw materials will be exempted from payment of Octroi duty in respect of new industries for a period of five years.

7. *Power*—Power will be given to all new industries as well as for expansion of existing industries, involving a capital investment up to twenty-five lakhs of rupees, at rates which will be 12½ per cent less than the usual tariff rates (inclusive of duty) from the date of construction till five years after commissioning of the plant. In regard to expansion of units, the concession will apply to power required for the expanded portion only. For electro-chemical and electro-metallurgical industries, where electric power is used as raw material, concessional rates, including refund of electricity duty will be allowed by negotiation on the merit of each case.

8. *Land*—To attract industries in important industrial areas, Government have decided to charge the following concessional rates of premium for leasing out Government land :

	(Rs. per acre
1. Bhubaneswar area ..	10,000
2. Cuttack area ..	10,000
3. Rourkela area ..	7,500
4. Sambalpur-Hirakud area ..	7,500
5. Jagatpur-Chaudwar area ..	7,500
6. Talcher area ..	5,000
7. Barbil-Joda area ..	5,000
8. Kansbahal-Rajgangpur area ..	5,000
9. Sunabeda area ..	4,000
10. Paradeep area ..	4,000
11. Jajpur Road area ..	3,000

Government lands in other places will be made available at fifty per cent of the market rate. In less developed areas of the State, like the districts of Kalahandi, Phulbani and Bolangir, lands will be made available at one-third of the market rate.

The premium will be realised in five annual equal instalments, the first instalment being payable at the time of taking possession of land.

These concessions will be available only to industries which propose to make capital investment of not less than rupees two lakhs.

The State Government will also take steps to acquire private land at the cost of the industries concerned.

9. *Developed area*—The State Government are going to establish developed areas in Rourkela, Kansbahal-Rajgangpur, Paradeep, Sunabeda, Talcher and Jajpur Road, where developed sites having power, water-supply, etc., will be allotted to industrialists so that industries can be established with minimum loss of time.

10. *Industrial Estate*—A large number of sheds have been constructed in Industrial Estates at important industrial centres of the State like Rourkela, Cuttack and Jharsuguda. These sheds will be made available to the industrialists on different lease terms.

11. *Water*—When water is required by industries from the Public Health Department of the State Government the same will be supplied on no-profit no-loss basis. For supply of water from Irrigation Works, the existing rates are as follows:—

Item	Purpose for which supply is given	Rate Rs. P.	Per—
1.	Bricks or tile-making ..	0·12	1,000 bricks or tiles
2.	(*i*) For water actually used and consumed for industrial purposes.	10·00	100,000 gallons
	(*ii*) For water temporarily used for (industrial purposes and discharged back unpolluted or after purification into Government source from which the same was drawn or any other Government source from which water is supplied for irrigation.	2·00	100,000 gallons
3.	For bulk supply to Municipalities and N. A. Cs. and other local authorities for drinking, washing, etc.	2·50	10,000 Cft.
4.	Construction of building ..	0·10	100 Cft.
5.	For filling tanks ..	2·50	10,000 Cft.

But for filling tanks mainly for drinking purpose, half the rate in item 5 (i. e., Rs. 1·25 P. per 10,000 Cft.) shall be charged.

12. *Housing*—The subsidised Housing Scheme is in operation in the State, under which financial assistance is given to the employers for construction of labour tenements. Some housing colonies are also put up by the State Government directly.

13. *Price Preference and Government Purchases*—In the matter of purchase of store by Government and semi-Government offices, many products of Small-Scale Industries of the State are allowed price preference up to fifteen per cent. The State Purchasing Organisation of the State Government collects industrial intelligence and Government-purchase statistic to enable the manufacturers to plan their production. The Organisation assists the Small-Scale Industries to market their products both inside and outside the State by maintaining liaison with Government and semi-Government offices, Railways and D. G. S. & D. It also ensures quality control through its Testing Laboratory.

The State Government are keenly aware of the paramount need for expeditious action in the matter of processing various cases and taking quick decision. For this purpose, a Steering Committee has been set up with Secretaries of the concerned Departments. This Committee processes all important cases and sorts out difficulties and formulates definite recommendations. These recommendations where necessary are placed before a Sub-Committee of the Cabinet formed under the Chairmanship of the Chief Minister of the State.

The State Government lay great emphasis on maintenance of industrial peace and healthy relationship between the labour and the management.

Industrial Potential of Bolangir District

The district of Bolangir comprising the two former princely States of Patna and Sonepur is the third smallest district of Orissa, the first two being Balasore and Keonjhar. It has a population of 1,068,686 according to 1961 census, nearly 40 per cent of which belong to Scheduled Castes and Tribes.

Like the rest of the State, agriculture is the mainstay of the people in this district. Besides, rice, ragi, grams, groundnuts, sugarcane and oilseeds are cultivated in this area.

This is one of the most undeveloped area of the State. As such, development of industry has not made any appreciable progress in this district although it is rich in mineral and forest resources.

Mineral Resources—The important mineral occurring in this district are graphite, manganese ore, buxite and galena. Manganese is found in Dharmatal, Rengali and Dandapani villages while graphite occurs in Dharkhaman, Chandutara-Lakhanpur, Bakbahal and Simla villages.

So far graphite and manganese ore have been exploited. There is one small-scale unit at Patnagarh for benefication of graphite. There is another unit at Titilagarh for manufacture of graphite crucibles. This unit is also doing benefication of graphite ore.

There is no scope for development of any more unit for processing graphite ore in the district as the mines are fast depleting.

As regards buxite, this has not so far been exploited as the exact extent of deposit has not yet been known. The proposal to set up an aluminium factory in Bolangir-Kalahandi-Koraput area to utilise the rich buxite deposit occurring in this belt is being actively considered.

Forest Resources—Forests in the district cover an area of 1,904 Sq. Kms. The

important varieties of timber found in these forests are teak, sal, biza, sissoo, gambhari, asan, mundi, etc. Kenduleaf, bamboo, sabaigrass, genduligum, myrobalam and sunaribark may be mentioned as principal minor forest products.

There are ten saw mills in the district at Balangir, Titilagarh and Kantabanji. These mills are engaged in sawing and trading of timber. Sawn timbers are sent to Calcutta, Rohtak and Visakhapattanam.

There are also 11 carpentry units in the district. These are mainly engaged on manufacturing wooden furniture. Two of these units are Panchayat Samiti Industrial Units located at Titilagarh and Patnagarh. Excepting these two units, all the other units are non-mechanised.

While there is no scope for further development of saw mills in the district, the scope for carpentry units are bright. With the increasing demand for quality wooden furniture the existing units will do better to be mechanised and try to produce quality goods. Some new units at places like Bolangir and Kantabanji will also pay good dividends.

As regards minor forest products, bamboo and sabaigrass are taken away by M/s. Bengal Paper Mills and M/s. Orient Paper Mills. Kendu leaf is also sent to several other States for preparation of bidi.

Existing Industries—(i) Small-Scale Industries—The following small-scale industries are operating in the district :—

1. General Engineering	...	4 units
2. Wire drawing	...	1 ,,
3. Metal Utensil manufacturing.	...	7 units
4. Tin container	...	1 ,,
5. Auto workshop	...	4 ,,
6. Saw Mills	...	10 ,,
7. Carpentry shops	...	11 ,,
8. Washing soap factory	...	5 ,,
9. Aurvedic Medicine	...	2 ,,
10. Gudakhu making	...	7 ,,
11. Bakery & Confectioneries		9 ,,
12. Tyre valcanising	...	2 ,,
13. Graphite benefication	...	1 ,,
14. Chalk Cryons	...	1 ,,
15. Bricks & tile factory	...	4 ,,
16. Tannery	...	1 ,,
17. Footwear factory	...	4 ,,
18. Shoe making (non-leather)		1 ,,
19. Brush making	...	1 ,,
20. Rope making	...	1 ,,
21. Rice mills & hullers	...	46 ,,
22. Oil Mills	...	17 ,,
23. Printing Press	...	6 ,,
Total		146 units

In these industries nearly 1,400 persons have been employed. The total capital investment in all these units approximately comes to 60 lakhs.

There is only one medium scale industry in the district located at Titilagarh which is manufacturing graphite crucibles and doing graphite benefication. It has capital investment of Rs. 30 lakhs. The number of employees in this unit is 150.

Development Prospects—In the small-scale sector, the following industries have the prospect of further development in the district :—

1. Automobile workshop
2. Manufacture of tin containers

3. Carpentry units
4. Washing Soap
5. Ayurvedic medicine
6. Gudakhu making
7. Tyre valcanising
8. Chalk Cryons
9. Leather Footwear
10. Non-leather Footwear
11. Bushes
12. Ropes

New Industries—The following new industries may be taken up in the district in the small-scale sector :—

(A) *Resource Based Industries*—(1) Manufacture of Ragimalt, (2) Bidi Making, (3) Straw board manufacture, (4) Flush door and Teak Veneers, (5) Wooden electrical Assessories, and (6) Sisal Ropes.

(B) *Need Based Industries*—(1) Mixed Fertilisers, (2) Tyre retreading, (3) Waxed Paper, (4) Ready-made garments, (5) School bags and travel bags, (6) Stationery items like exercise books, file covers and envelopes.

Infrastructure and other facilities—This district enjoys good railway connection. The Vizianagaram-Raipur branch line of the S. E. Railway passes through the western part of the district having two important towns Titilagarh and Kantabanji on its way. The Sambalpur-Titilagarh branch also passes through the Centre of the district connecting Balangir.

As regards road communication, no National Highway passes through this district. Only two State Highways namely Bargarh-Borigumma Road and Titilagarh-Sohela Road pass through the district. A lot of improvement need be made on road transport to make it possible for industries to grow in this district.

This district gets its power supply from the Hirakud Project. But power supply is inadequate and a number of existing industries are suffering for want of power.

Suitable infrastructure should be built up to quicken the pace of industrialisation of this district. The first step in this direction is to improve road transport system and ensure adequate power supply.

This being a very backward area both from economical and industrial point of view, special efforts should be made to attract local entrepreneurs. Special concession in the matter of financial assistance and tax assessment should be given to them and land, power and water should be given at rates cheaper than now available.

Small Scale Sector—
Fair Deal Necessary

The growth of small-scale industries helps in solving the problem of unemployment to a great extent. It creates more employment opportunities with perhaps less investment. It also helps growth of entrepreneurship on wider basis and is, therefore, of vital importance for the prosperity of the people in general. The growth of industries in small-scale sector, therefore, deserves our best attention.

The main objectives of the small-scale industries programme during the 4th Plan appears to be—

(a) to improve progressively the production technique of small industries so as to enable them to manufacture quality goods and bring them to a viable level ;

(b) to encourage decentralisation and dispersal of industries ;

(c) to promote the growth of agro-based industries ; and

(d) to promote the growth of ancillaries.

Achievement of these objectives would require us to closely scrutinise the facilities in various forms available and to evolve a positive approach towards arranging liberal credit facilities enlarging the sector of small-scale industries, developing ancillaries, supply of raw materials, development of technical consultancy services, tax concessions and other related matters.

Amongst the various items which had been suggested for discussion at the 28th meeting of the All-India small-scale Industries Board at Bhubaneswar I would like to highlight just one or two issues for special mention. In the 27th Conference of this Board held at Gauhati, an important

recommendation which was made related to the reservation of a reasonable percentage of indigenous production of scarce raw materials like the flat steel products, billets, etc., for distribution to small-scale industries at fair prices either through the State Small-Scale Industries Corporation or other channels. So far, I find from the actions taken on the proceedings of that meeting that nothing significant has been done and in fact the policy on the distribution of steel items has been made more difficult for the small-scale sector by insisting on pre-requisites like advance against indents, etc. Even the one Re-rolling Mill in our State does not get adequate supply of billets to keep it economically running. The Cable Project, which is also in the State sector, does not get adequate supply of aluminium and copper, and the factory is naturally working to only 1/3rd of its capacity. It may be mentioned here that this is in spite of an aluminium factory located in the close vicinity. Our small-scale industrial units requiring these raw materials are also in similar plight. Bell-metal industrial units and workers are also suffering due to lack of adequate supply of the raw materials they require.

Yet another item on which I would like to lay stress is the special need of backward areas. I find this item has already been included in the agenda at the suggestion of some other State Governments like Jammu & Kashmir and Tripura. Orissa also being a backward State finds it difficult to obtain scarce raw materials even for its small number of existing industries, because of the present policy followed in allocation which appears to be based mainly on past demands. I need not elaborate here on consequences of following such a poli Either separate quotas or a more libe policy in allocation of scarce raw ma rials for backward areas appears called f It appears ironical that while Orissa h the Rourkela Steel Plant producing f products, its small-scale industries requiri flat products and the re-rolling mills a unable to work to capacities for want this item.

It also seems necessary to lay mo emphasis than at present on the develo ment of industries which belong traditi nally to the rural sector, and integrate ou approach to industrial development wit the pace of the agricultural developmen now taking place in the country. In m opinion, special incentives for setting u agro-based industries which would suppor the growth of agriculture in our countr and provide sustenance to industry in gene ral is essential and the States may have to develop their own strategy for the same. The artisans of the villages require our specific attention and some of the industries which cater to the traditional needs of the rural economy will have to be given fresh impetus. Improvement of skill, supply of technical advice, supply of improved implements and credit, removal of subsidy in a graduated scale and organisation of artisans and craftsmen into viable groups, will be absolutely essential for achieving reasonable rate of growth.

(Based on the welcome address of Shri Harihar Patel, Minister for Industries, Orissa delivered at the 28th meeting of All-India Small-Scale Industries Board)

Large and Medium Industries in Orissa

Location (1)	Annual Capacity (2)
TEXTILES	
Bhaskar Textile Mills Ltd., Jharsuguda ..	2,500 tonnes of cotton yarn
Orissa Textile Mills Ltd., Choudwar, Cuttack.	Yarn 5,732,741 Kgs., cloth 36,072,594 Mtrs.
Berhampur Power-loom Weavers' Co-operative Society, Berhampur, Ganjam.	21 lakhs metres of cloth
CAST IRON	
Re-rolling Mill, Hirakud, Sambalpur ..	15,000 tonnes of re-rolled products
National Foundry and Rolling Mills, Ltd. Cuttack-4.	33,000 tonnes of Metallorigical (Ferrous) M. S Rods, C. I. Pipes, C. I. Pans, Mechinery parts and other cast iron goods.
CABLE	
Hira Cables Works (I. D. C.) Hirakud, Sambalpur.	1. All aluminium conductors and aluminium conductors, steel reinfored-3,000 tonnes. 2. Paper/cotton covered wires and strips 300 tonnes.

	3. Synthetic and super enamelled copper wi 360 tonnes.
MACHINERIES	
Utkal Machineries Ltd., Kansbahal Sundargarh.	12,000 tonnes of Steel Plant equip ents, chemi plants, crushing plant equipments and hydro equipments, structural plate works, pulp a paper mechi ery etc.
Hirakud Industrial Works, Hirakud ..	300 tonnes on sin le shift basis fabricatio jobs—50 tons a day.
STEEL	
Hiad stan Steel Ltd., Rourk la Regd. Office, P. O. Hinoo, Ranchi.	1. Wide and Heavy Plates—200,000 tonnes
	2. Hot dipped tin plates—50,000 tonnes
	3. Hot rolled strips sheets and narrow plates— 300,000 tonnes.
	4. Cold rolled sheets and strips—170,000 tonnes
PIPES	
Kalinga Tubes Ltd. Choudwar, Cuttack ..	90,000 M. Tonnes of Black and galvanised pipes and step-drawn steel tubular roles.
REFRACTORIES, CERAMIC AND GLASS	
Tile Factory (I. D. C.)), Choudwar, Cuttack	4,800,000 nos. of roofing tiles.
Belpahar Refractories, Belpahar, Sambalpur.	Fire bricks 45,000 tonnes. Basic bricks 12,000 tonnes. Silica bricks 457,000 tonnes. Mortars 20,000 tonnes.
Orissa Cement Ltd. Rajgangpur ..	Fire bricks-39,616 tonnes. Silica bricks-22,350 tonnes. Basic bricks-38,610 tonnes. Chemically banded bricks-10,160 tonnes. Mortars for above-10,160 tonnes.
Orissa Industries Ltd., Barang ..	Sanitary wares-1,320 tonnes. Refractories-36,000 tonnes. Stone ware pipes-12,000 tonnes.
Shri Durga Glass Works Ltd., Barang, Cuttack	1,800 M. T. of Glass ware, bottles and chimney
The Bisra Stone Lime Co., Ltd. Biramitrapur, Sundargarh.	1,920,000 tonnes of Limestone Dolomite.

SUGAR

pore Sugar Co., Ltd. Rayagada	..	45,000 bags of sugar.
a Co-operative Sugar Industries	..	Crushing capacity 1,000/1,200 M. T. of sugar-cane per day of 22 hours.

PIG IRON FERRO ALLOYS

ali ga Industries Ltd. (Spo sored by I. D. C.) Barbil, Keonjhar.	30,000 M. Tonnes of Pig iron.
ypore Sugar Co. Ltd. (Ferro-manganese) Rayagada.	24,000 tonnes of ferro-manganese.
erro chrome Plant, Ja pur Road, Cuttack ..	10,000 M. Tonnes of Low carbon ferro chromes
he Tata Iron and Steel Co. Ltd. Joda, Keonjhar.	30,000 tonnes of Ferro-manganese.
dian Me al and Ferro-alloys Ltd., Theruvali (Rayagada) Koraput.	7,200 tonnes of 75 per cent grade Ferro silicon.

PAPER

aw Products Ltd., Rayagada	..	18,000 tonnes of paper.
aghur Paper Mills Ltd. Choudwar, Cuttack		18,000 tonnes of pulp and paper.
ient Paper Mills Ltd. Brajarajnagar, Sambalpur.		60,000 M. T. of paper boards and paper conversion.

CEMENT

rissa Cement Ltd., Rajgangpur	..	4,01,000 tonnes of ordinary Port land and por land Pozzolana cement.
Hira Cement Works (I. D. C.), Bargarh, Sambalpur.		396,000 M. Tonnes of Ordinary Port land cement.

ALUMINIUM

Aluminium Industries Ltd., Hirakud, Sambalpur.	9,600 tonnes of aluminium rod and conductors
India Aluminium Co. Ltd., Hirakud, Sambalpur.	44,600 tonnes of aluminium ingot., Soderberg paste Electrokesmisk plate.

FERTILIZER

Hindusthan Steel Ltd., Rourkela (Fertilizer Plant).	..	(N. A.)

REFRIGERATOR

Kalinga Sevenska Ltd., Choudwar, Cuttack..	4,800 Cooling units.
Kalinga Industries Ltd., Mahanadi Road, Cuttack-1.	2,400 refrigerators.

CHEMICAL

Salt Project, Ganjam . .	1,50,000 tonnes Chemical and Industrial Gra Salt.
Jayshree Chemicals Ltd., Chatrapur, Ganjam	Caustic soda—16,500 tonnes.
	Chlorine—14,850 tonnes.
	Hydrochloric Acid 14.650.

Based on the Directory of Industries compiled by Industries Directorate

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SCHEME OF FAMILY PENSION-*CUM*-LIFE ASSURANCE FOR INDUSTRIAL WORKERS

The Scheme of Family Pension-*cum*-Life Assurance, as anounced by Government of India at the time of presenting the Budget for 1970-71, was applicable to workers who were contributing to the Employees' Provident Fund at the rate of 8 per cent of their pay. At its last meeting, the Standing Labour Committee of the Indian Labour Conference recommended adoption of the Scheme with the modification that the following categories of workers should also be covered—

(i) The workers who are contributing at the rate of 6¼ per cent under the Employees' Provident Funds Act, 1952.

(ii) Members of the Coal Mines Provident Fund who are already paying contribution at the rate of 8 per cent.

The above suggestions have been accepted by Government and action is being taken to introduce necessary Bill for amendment of the Employees' Provident Funds Act, 1952 and the Coal Mines Provident Fund and Bonous Schemes Act, 1948 for this purpose. The Scheme of Family Pension-*cum*-Life Assurance, when it comes into force, will apply to all workers covered under the Employees' Provident Funds Scheme and also the members of the Coal Mines Provident Fund Scheme.

DEVELOPMENT OF INLAND WATERWAYS

The 12-member Committee on Inland Water Transport headed by Shri B. Bhagwati in its report has urged that Government of India should formulate a national transportation policy envisaging development of all modes of transport, viz., road, rail and inland waterways. The Committee also has recommended in respect of 12 States & Union Territory of Goa various schemes pertaining to inland water transport costing about Rs. 28 crores phased over next ten years. The Committee has suggested that a Central Technical Organisation should be set up to evolve designs for construction of simple unsophisticated craft with outboard motors and mechanisation of country craft. The Committee has stressed need of a permanent high powered Board for implementation of inland waterway schemes. Some of the important recommendations of the Bhagwati Committee are reproduced below for our readers.

Declaration of certain water ways as "National Waterways" will boost up the development of inland water transport in the country.

The criteria for considering any waterway to be declared as "National Waterway" should be its importance to the nation as a means of communication and its contribution to the economic development of the area and the country at large. Such waterways should either carry substantial traffic or must hold promise of development of traffic.

Important waterways such as the Ganga-Bhagirathi-Hooghly, the Brahmaputra, the Mandovi and the Zuari rivers and the Gumbarjua Canal, the Mahanadi, the Godavari and the Narmada should be considered for declaration as National Waterways.

HYDROGRAPHIC SURVEY

There is an urgent need to undertake hydrographic surveys of the waterways in

order to exploit them fully for commercial navigation. These are essential for designing and planning of inland ports. In the absence of hydrographic survey data, the development projects would not be well conceived and may lead to infructuous expenditure.

It is necessary to provide facilities for training officers in hydrographic survey work. Such training could be made available either under the Indian Navy or the Commissioners for the Port of Calcutta.

In the larger interests of the country as a whole, it is necessary that the waterways should be properly maintained and improved to meet the growing transport requirements in the wake of rapid industrialisation. The Central Government should assume full responsibility for maintaining navigability of all important waterways by taking such measures as may be necessary.

TECHNICAL ORGANISATION

A major factor holding up development of inland water transport has been the absence of suitable Technical Organisations both at the Centre and in the States.

The Head of the Inland Water Transport Organisation at the Centre should be designated as Director General with the status of Joint Secretary to the Government of India. This officer should be *au-fait* with the problems relating to inland water transport, such as river navigation, operation of crafts, conservancy of channels and combine in himself technical knowledge and practical experience to guide the development of this mode of transport.

The Technical Organisation at the Cent should be in overall charge of developme of inland water transport in the count and should guide and advise the Technic Organisations in the States and co-ordina their activities.

The Technical Organisations both at th Centre and in the States should have pro perly trained officers with up-to-date know ledge of inland water transport technology In order to ensure this, full benefit shoul be taken of the facilities provided by deve loped countries for training of officers i the field of inland water transport.

HIGH POWER BOARD

To ensure that the recommendations o this Committee are fully implemented and schemes for development of inland wate transport properly pursued, it is necessary to have a high powered Board on a permanent footing to review the progress made in the execution of various schemes and suggest such steps as may be necessary for their speedy completion and proper growth of inland water transport.

The production of certain ship building yards should be improved by installing modern equipment. Such facilities are specially necessary at Government Workshops in Alleppey and Panaji.

In the interest of economic operation of inland water transport, replacement of old crafts is necessary. It is also necessary to evolve standard designs of hull and propelling machinery. While standardising the crafts best suited to the Indian conditions, it is necessary to ensure that special

features of old construction which are disadvantageous to local conditions are not lost sight.

An Inland Vessels Development Fund may be established on the lines of Shipping Development Fund for giving financial assistance to the owners for acquisition of new craft, modernisation of existing vessels and mechanisation of country boats.

TECHNICAL ORGANISATION FOR DESIGNS

The Technical Organisation at the Centre should evolve standard designs for construction of simple unsophisticated craft with outboard motors and for mechanisation of country craft. This Organisation should also render free technical advice to boat owners interested in mechanisation of their craft.

Government should devise some means of financial assistance to country boat owners and induce them otherwise to form themselves into Co-operative Societies to enable them to secure financial help from nationalised banks. A system of documentation should be introduced as is the case with the railways and road transport operators whose documents are negotiable through the banks. Insurance against loss of or damage to the boats and the cargo is also necessary.

WATER TRANSPORT IN BHAGIRATHI

The completion of the Farakka Project and the connected development of the Bhagirathi would provide an excellent perspective for the development of inland water transport in the eastern region, in so far as these works will make it possible to link the Ganga with Hooghly through the Bhagirathi by a perennially navigable route falling entirely within the Indian territory. Farakka is likely to become an inportant rail and road-*cum*-river transhipment point and should be developed into a modern inland port. Facilities for transhipment of cargo and berthing of inland craft should be provided on a priority basis.

Schemes estimated to cost Rs. 28 crores phased over a period of 10 years have been recommended. It will not be possible for the State Governments to undertake the development projects on their own. To make a break-through from the present neglected State, it is essential that the Central Government should meet the cost of these schemes. The minimum outlay which ought to be allotted for the development of inland water transport in the Fourth Five-Year Plan should be of the order of Rs. 12·5 crores, excluding the expenditure on Central Inland Water Transport Corporation Limited. In the interest of co-ordinated development of transport in the country, the allocation for inland water transport in the Fourth Plan should be suitably augmented in order to enable this mode of transport to play its legitimate role.

The Committee was set up in August 1968 by the Ministry of Shipping and Transport with Shri B. Bhagwati as Chairman and Shri H. C. Malhotra as its Secretary.

Coal-based Fertiliser Plant at Talcher

The foundation stone of the World's biggest coal-based fertilizer plant has been laid at Talcher on February 3, 1970 by Dr. Triguna Sen, Union Minister for Petroleum & Chemicals and Mines and Metals. The plant when completed will produce 49,500 tonnes of Urea per year. Its daily rated capacity will be 900 tonnes of Ammonia and 1,500 tonnes of Urea. Estimated to cost Rs. 70 crore, it will be the first coal-based plant set up on modern lines. The foreign exchange component included in the estimated cost is Rs. 20 crore. The plant will utilise a million tonne of coal per year. Supply of coal will be from the South Balanda Colliery of the National Coal Development Corporation. It will consume 42 Mega-Watts of electric power from the Talcher Thermal Power Station; and 12 million gallons of water per year from the river Brahmani. The plant along with its colony, etc., will cover an area of 120 acres and will employ 1,200 skilled workers. The decision of the Government of India to set up a coal-based fertiliser plant at Talcher in Orissa and at Ramagundam in Andhra Pradesh is an important landmark in the mechanics of fertiliser production in the country. This not only justifies the use of coal for fertilizer production, but also marks the end of Naphtha's domination of the field.

The story of coal based fertiliser projects dates back to the year 1960, when the Kane Committee recommended setting up such projects in Madhya Pradesh and Andhra Pradesh which would have utilised the coal available in the regions. But for some reason or the other the projects did not see the light of the day. In the subsequent years, the nation was committed to Naphtha in imitation of world trends, as a result, the fate of coal, of which the country has got an abundant reserve, seemed doomed. But suddenly India found that in the Fourth Plan period she would be very short of Naphtha. This realisation made the Central Government think of coal, which was ignored so far. Hence is the Talcher Fertiliser Project.

But it would be wrong to presume that the idea of setting up a coal based fertiliser plant at Talcher originated only recently. Rather it would be correct to say that the idea developed as a corrollary to the plan of integrated industrial development of the area. To cut the story short, the National Coal Development Corporation discovered in 1961 considerable reserves of good quality coal in Talcher area and brought it to the notice of the State Government. The State Government referred the problem to the Central Fuel Research Institute, Jealogora whose considered recommendation was for the establishment of an industrial complex based on Talcher coal. This recommendation was vigorously pursued by the State Government and a plan for a coal based industrial complex at Talcher was formulated.

The plan envisaged an L. T. C. Plant, the coke being utilised for pig-iron manufacture and the L. T. C. gas for production of fertiliser. A detailed project report on the scheme was submitted in January 1966 by the Industrial Development Corporation of the State Government. The Planing and Development Division of Fertiliser Corporation India Limited, at the request of the State Government was associated with the preparation of the report. The project was examined and approved in principle by the Central Government.

In February 1968, the State Government approached the Planning & Development Division of F. C. I. for preparing a feasibility report for the establishment of a large fertilizer plant based on Talcher coal as an alternative to the above project. Accordingly the first report was prepared in july, 1968 and submitted to Government of India by the Orissa Government.

It was at this stage the Government of India realised the problem arising out of shortage of Naphtha during the Fourth Plan period and thought of an alternative. Accordingly, a bold decision in favour of the coal based fertiliser plant was taken and Orissa Government's report was given due consideration. The Fertiliser Corporation of India was asked to go ahead with two coal based fertiliser plants. Talcher plant is one of them.

SANUJIT GHOSE

Aska Sugar Industries— Promise and Performance

When I took over charge here, in a rainy day in June last, I was told that sugar-cane grew in the field, not in the factory. It is a simple statement, rather funny at first sight, as it does not elicit an argument. But, after brooding over it, with the passing of time, I realise the serious side of the whole picture. It is a picture of simplicity yet confusion. There is a sugar factory here, as every body knows, and the sugar-cane grows in the field. When it would be ripe sometime in winter, it would be brought to the factory for crushing in the machines, and the sugar crystals would flow out at the end of the process. What are the difficulties then? Why it requires so many sides of the organisation, so many officers to look after, so much of running around ?

Coming from the general administration in the district, as I look around, I find the place and the people are the same. The smell of dust thirstily drinking the first rain, the crowd in the mango groves at the village when they see a jeep approaching lazily through the uneven road, lush vegetation and sugar-cane, the look on a villager's face when he is found guilty, a peasant's emotion when a wrong has been put right. There has been no change here. As a district officer as I found them at that time, even now they are the same. The sugar-cane stood in bunches beneath the blue sky, in the moist wind of early June, the bullocks chewing the cud, the carts tilted up with the single shaft pointing to heaven. Only my role has changed. From Administration, I have come down to be one amongst them, in deed and in need, as a running unit of an agro-industry.

Sitting behind my desk at office, I receive two sets of persons. One represents the various shades of the people in the field. The tillers who would like to get the assurance that sugar-cane would be more paying than paddy, the flow of fertilisers, seed, insecticide, pesticide, guidance at various stages of growth of the sugar-cane from our staff in agriculture department. And, ultimately,

quick drawal of sugar-cane from the field to factory so that ready payment for the toils and troubles taken up in the year left behind.

It is a simple transition from one stage to the next. But there are many ways of looking at it. Only a few days ago, a unit of All-India Radio, Cuttack, visited the industry and interviewed number of persons connected with the sugar-cane at various stages in and around the industry. The persons interviewed represented different shades of opinion and came from every walk of life. There was a cane grower from the white collar group, who opined that by random plantation of cane, his harvest was far more than in another patch of land where he got less yield of cane by following all the improved methods of plantation as suggested by the officers and the staff of the Cane Development Department of the Industry. There were three other ordinary cane growers who told at the radio interview that the present yield of cane was quite enough for them to get a handsome margin, net in hand, after meeting all the expenses from the field to the factory. They followed their own method of plantation and, at times, listened to the Cane Development Staff also.

A common reader of this article might conclude that in between these widely varied opinion either there is something wrong with the improved methods of growth, up-bringing and maturity of cane, or, somebody is trying to make a tall story out of his own inhibitions. Fact is, the plantation of cane should begin by October-Novmber every year and should be in the field for atleast eleven to twelve months before attaining full maturity. But, in our area of operation, spreading over 14 blocks in three subdivisions in Ganjam district, we find most of the cane growers wait till the end of *Chaitra* and, then, go for plantation. In other words, from middle of April to December, a little over eight months is the length of life of a cane, by the time it comes for crushing at the factory. Only an enlightened few go for plantation by January or February. There is none to blame. Because of acute shortage of water during the summer months, the plantation of cane begins late and depends only on the setting in of the monsoon by the middle of June. The Rushikulya River irrigation system, more than a hundred years old, can hardly ensure irrigation of 1,000 acres under sugar-cane. Of late, another M.I. Project, called Dhanei M.I. Project, has come up with the promise of irrigating about 1,200 acres, under sugar-cane. But, this project is well over 30 miles from the factory and the cost of transportation of cane to the factory is rather uneconomical. Next in the line are the lift irrigation points around Aska, which serves about 1,000 acres under sugar-cane. In 1969-70, we had about 6,500 acres under sugar-cane in the area of operation. Looking at above, dear reader may conclude how our dependence on early arrival of monsoon is total and complete !

In passing, one interesting point may be mentioned that though our area of operation extends up to forty-four miles, by twenty-fifth mile, we are getting a little over eighty per cent of the total quantity of cane during the last seven seasons. With a systematic drive for lift irrigation as well as flow irrigation, we may in no time

stabilise the area around 10,000 acres under cane within 25 miles.

To ensure the flow of fertiliser is another hard task, as the papers have to pass through many agencies. The preparation for adequate stock of fertiliser at village points centrally located must begin by about November onwards, so as to reach the field by January. Then the tiller of the soil must get the right type of seed cane--healthy, disease-free, treated properly in medicine. Plant protection squad is to get ready, with the insecticides and pesticides stored well in advance to move to particularly vulnerable pockets in case of any attack of pest or appearance of disease.

In spite of all these, almost daily a section of the growers make an appearance at the office and seek many answers to the few questions hovoring around them every type of fear in approaching the sugar-cane field. It is but natural on their part. They are leaving behind their old friend-paddy which stood by them for centuries, and trying their hands in a new cash crop sugar-cane.

I with my colleagues at office repeat the same replies, the same assurance to them—like a pin stuck in a gramophone record—untiringly. The simple idea is we do not like to take the role of indigo planters of the last century in this part of the country. There is no compulsion for a paddy grower to shift to sugar-cane cultivation. The man in the field should understand that the sugar factory is there, to assist as well as to guide them in every phase of sugar-cane cultivation, and to accept the total yield in exchange of ready cash, when it would be ripe, for crushing. There is no responsibility on the part of the sugar-cane grower to carry the sugar-cane after crushing and processing into gur to a merchant or for crushing. for Khandasari, there is no necessity for him to wait by the side of a school or a playground for the children to buy the sweet sticks for chewing. The production, storing and marketing of sugar are the responsibilities of the factory.

What is, then, the fear of the cane grower? What he wants to be assured of? Here is the million doller questions. What price the sugar factory will pay for his produce of the year? True, sugar-cane is an annual crop, whereas paddy can be grown twice a year. With the improved high yielding varieties of paddy, in between two crops, an enterprising grower might grow some vegetables also for ready market. Yet, as I narrated above, sugar-cane still retains the allurement—the price paid is still more than paying—of course, taking all the factors into accounts. Of late, inter cropping in sugar-cane field has been taken up successfully. In the space between the two rows of cane, vegetables like cabbage, cauliflowers, mung even high yielding varieties of paddy may be grown as the recent experiments suggest. If these succeed in a high way, then, of course, there would be no more dark fears, and repetition of the few questions many a time.

The other set of persons who approach me often are a closers set—the labourers in the factory. They do not, possibly, know much about the growth of the sugar-cane, but they do know the shifts in duty, the working hours, the overtime and, of course, the payment of bonus. Here, they argue

through their Union, organise meetings to ventilate any demand to the management. They are conscious of the privileges they are entitled to, according to law and the legal guarantees they enjoy. The relationship between the management and labour must not be tilted to a side, as it leads to loss of man-days and affects production cost adversely. We are trying our best to ensure the ideal conditions at the factory, by opening subsidised canteen, giving rest room for those coming on duty at the night shift, houses at subsidised rates, etc., etc. A lot is yet ta be done—a hospital, children's play-ground, a school, a well-laid park.

But the greatest problem of all is where to sell sugar and at what price. The elementary laws of economics—demand and supply—pay a very important role. The cost of production per bag of sugar is often left in the lurch as the market falls sharply without any rhyme or reason. At times, information comes that some big charity trust with two big sugar mills has arrived at the market and marketing quarter of a lakh tonnes of sugar at throw away price. They are interested in ready money to run some colleges or schools, in the other part of the country. We, as businessmen, do not stand a chance there. The quality gets mixed up at times—a grade of sugar inferior to another grade passes on with the same rate of sale, as the layman does not know how to distinguish between two types of crystals in sugar and what price to offer for each. As the Government controls the price and the quota of sugar month by month for the market, and as the growth of sugar cane depends mostly on the vagaries of nature, it is a popular belief that fixation of cane price by the factory is akin to horse-trading. The relationship between the quality of the sugar-cane, the expected production of sugar, the steady market and the running of a regular establishment combining agriculture, engineering, labour and commercial sides is soon lost sight of, and the idea develops that the tiller of the soil does not get his well-deserved dues! Well, had there been a system where the tiller of the soil could have taken over the responsibility of running the show the colourful look of the factory appeared before his eyes in grey shades alone. When the cane grower goes home with his money, when the labourer feels partly happy for whatever fringe benefits he could manage to get, the management continues to worry about the sugar bags sent to a distant place, what price they would fetch at a time. In plain words, all India price rules the market, but the cane growers stand in isolation from their counterpart in other corner of the country before the factory to pay off their dues. If the cane price was linked in a ratio with the up and down trend of the selling price of sugar, the cane growers could have been tagged to a percentage in the profit earned or the loss sustained, there would have been some semblence of linking the production with the sale, some gesture of mutual faith between the cane grower and the factory. Instead, the tussle is still there, scared by the sharp rise and fall in cultivation and production of this age-old cash crop. The realisation is yet to come in many shades of the people that the sugarcane grows in the field, not in the factory and it should be the constant effort for both to stabilise the crop, so that the production of sugar can be made steady along with a predictable demand and supply in the market.

To sum up, this factory at Aska spends between twenty-five to thirty thousand rupees a day through various stages—every day in a year—taking into account the annual turn over. This factory gives work to about 20,000 to 25,000 families—either in the field or at the site of the industry—throughout the year. So far, a little over two hundred miles of road ways, popularly known as sugar-cane roads, have been completed at the instance of the factory. Electricity has been drawn wherever possible for lift irrigation as well as under rural electrification programmes. But, we have to do much more, it is a long way to go.

The role of the Managing Director appears to be like a wise bee-master, who realizes that it is impolitic to try to take all the honey from either end of the bee-hive. Whether behind the desk in his room or out in the field, he cannot be frank in respect of his past experiences or future programmes as in either case, the people may feel frustrated leading to a sudden shrink in the acreage, or they might feel over-allured about the price to be paid for the coming yield. In both ways, the position of the Managing Director becomes embarassing—as he can neither allay fears nor raise false hopes. With the fingers crossed, he waits for a turn of luck, as in a game, hoping very best of every thing at the journey's end.

Export Potential of Orissa

In consonance with the effort which is being mobilised at the all-India level for expanding the exports of the country, the Orissa Government commissioned the Indian Institute of Foreign Trade to conduct a comprehensive Export Potential Survey of the State. The main objectives of the survey were to suggest suitable measures for fuller exploitation of the export potential of the State and to provide suitable guidelines for instituting a dynamic export marketing system for widening export base. The summary of the finding of the institute is reproduced below for our readers.

The Survey comprised in depth study of about 70 selected commodities and products. The selection of these commodities/products was made in consultation with the various Heads of Departments of the State Government. A list of commodities/products surveyed is attached. In addition to these specific items, scope for establishing chain of export and/or import substitution oriented industries, aspects relating to promotion of tourism in Orissa and organisational set-up for export promotion at the Government level, formed part of the Survey.

The Survey estimates that exports from the State can be stepped up nearly three-fold from the present level of about Rs. 17 crores to about Rs. 48 crores by 1973-74. Besides, the Survey visualises that if adequate investments are made in the State in certain electro-metallurgical and agro-based industries, it should be possible to save by way of import substitution about Rs. 22 crores of foreign exchange over the Fourth and Fifth Plan periods.

The Survey discerns that the dominant component of the State's exports will continue to be mineral and metallurgical sector. Exports from this group alone are envisaged to increase from the present level of Rs. 14.7 crores to Rs. 33.7 crores by 1973-74. Realisation of exports of this magnitude would depend on a number of factors. For instance, Orissa's iron ore exports could be stepped up three-fold if certain infrastructural developments, such as creation of additional rail/road links, equipping adequate ore handling facilities and modernisation of Paradeep port to handle bulk ore carriers etc., are expeditiously undertaken. The survey stresses in this connection that top priority should be accorded for implementation of the

proposed Banspani-Bimlagarh-Talcher Paradeep rail link.

The Survey recommends the expansion of production capacities for Pig-iron, ferro-silicon, low carbon ferro-chrome and creation of new capacities in certain electro-metallurgical industries such as silicon carbide and silicon metal, high carbon ferro-chrome, ferro-nickle, ferro-vanadium etc. These industries are important for export promotion and/or import substitution. Rourkela, Talcher-Jajpur Road and the vast coastal land around Paradeep constitute potential sites for developing export/import substitution oriented industrial complexes in the State.

Sizeable export potential is also envisaged for some of the engineering, chemicals and allied products. Exports from this group are expected to rise from the present level of Rs. 1·9 crores to Rs. 7.5 crores by 1973-74. Some of the items evincing considerable promise in this field comprise steel pipes and tubes, re-rolled products, wires and cables, cast iron products and paper & paper board. Fuller exploitation of the export potential of these industries would, *inter alia,* depend on the continuous availability of adequate quantities of raw materials, greater utilisation of capacities towards realising economies of scale, provision of quality control and testing facilities etc.

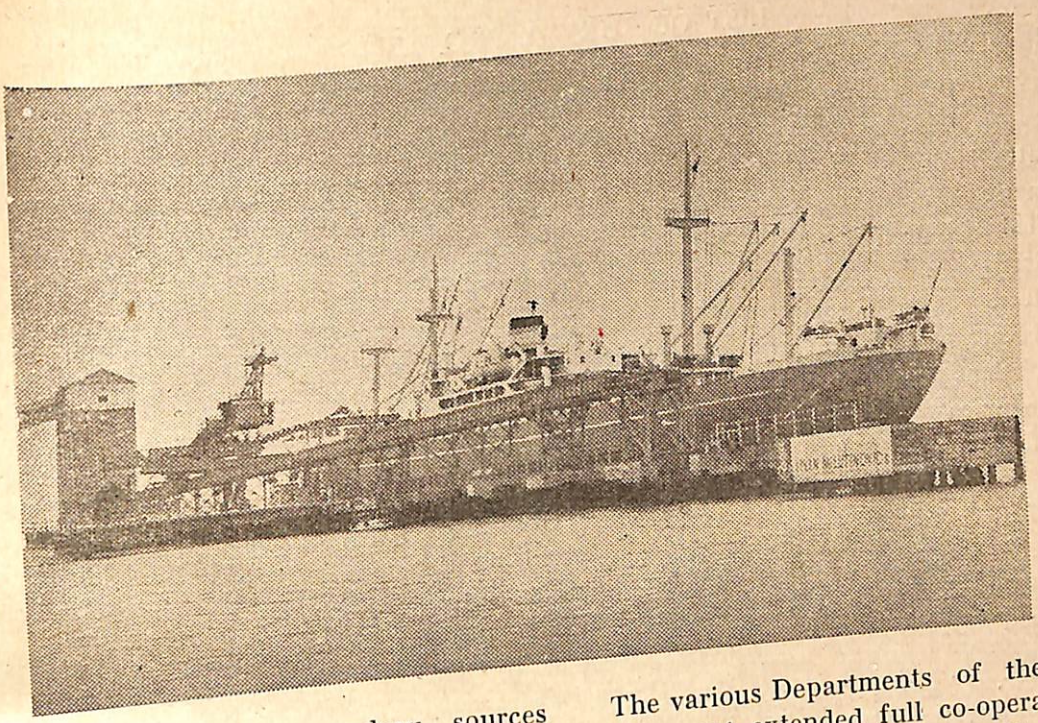
Contribution of agricultural sector to the State's exports has hitherto been insignificant. Setting up of processing plants for cashew and rice bran and development of infrastructure and processing facilities for the exploitation of the State's marine fishery resources are likely to generate exports worth Rs. 5 crores by 1973-74.

With a view to augmenting the exports of handicrafts and handloom products of the State, the production base has to be strengthened by providing additional trained hands. Besides suitable product improvements and innovations will have to be made and marketing assistance extended both for domestic and export sales. From the present level of Rs. 21 lakhs exports of these items could be raised to Rs. 55 lakhs by 1973-74.

In the context of numerous tourist attractions in Orissa and the vast potential that exists in this field, greater efforts for achieving a breakthrough in the development and promotion of tourism in the State are needed.

The survey has examined in detail the adequacy of entrepreneurship available for export in the State. The State Government machinery for aiding export promotion has also been scrutinised for aligning its structure and operational procedures to the dynamic programme of exports envisaged for the State. In this connection, the survey stresses the need for establishment of an Export Corporation in the State.

The Survey's assessment of the export potential of Orissa has been made through a comprehensive desk and field research programme. In relation to most of the survey items practically all the manufacturing/exporting units were interviewed. Suitably designed questionnaires/check lists were used to record the results of the interviews. Discussions were held with the concerned Associations, Chambers of Commerce, Research Institutions, Export Promotion Councils, Government Trading Corporations and the Ministries/Departments of the Central and State Governments. Requisite research material was



collected from various secondary sources as well as from India's Commercial Representatives abroad. The entire work relating to the planning of the Survey, conducting field work and writing the Report was carried by a team of 14 Officers under the supervision of a Project Leader and a Deputy Project Leader.

On the basis of the information and data collected both during the desk research and the field Survey, a draft Report was prepared and discussed at length with the concerned representatives of the Government, trade and industry in the State. Comments and suggestions on the draft Report were also invited from the Export Promotion Councils, specialised agencies, research institutions, etc. These were kept in view while finalising the Survey Report.

The various Departments of the State Government extended full co-operation to the Survey Team. The State Directorate of Export Promotion and Marketing constituted the nucleus for providing direct assistance to the Survey Team.

The Indian Institute of Foreign Trade has already conducted similar surveys in Andhra Pradesh, Mysore, Tamil Nadu, Maharashtra, Bihar and Haryana and has been approched by some other State Governments for undertaking similar comprehensive export potential surveys. This trend is obviously very welcome because of the important role which can directly be played by the State Governments in expanding the export potential of their States. It is also indicative of the greater interest that is being increasingly taken by the State Governments in the export effort of the country.

LIST OF SURVEY PRODUCTS

Agricultural and Allied Products

Cashew
Sisal
Annatto Seeds
Turmeric
Deoiled Rice Bran
Sal Seeds
Mahua Seeds & Flowers
Gum Karaya
Myrobalans
Nux Vomica
Bidi Leaves
Hill Brooms
Wild Life & Birds
Timber
Eucalyptus Citriodora & Red Sanders
Marine Products

Minerals/Ores/Metallurgical Products

Iron Ore
Iron Ore Pellets
Sponge Iron/Pig Iron
Steel
Manganese Ore
Electrolytic Manganese
Ferro-Manganese
Chromite Ore
Ferro-chrome
Titanium Products
Vanadium and Ferro Vanadium
Nickel and Ferro Nickel
Silicon Metal and Ferro Silicon
Graphite
China Clay

Engineering, Chemical & Allied Products and Leather Manufactures

Wires and Cables
Re-rolled Products
Transmission Line Towers
Cast Iron Products
Steel Pipes and Tubes
Steel Furniture
Storage Batteries
Pawer Driven Pumps
Bichromates
Paints and Varnishes
Pesticides
Paper and Paper Board
Plastic Products
Insulators
Refractories
Silican Carbide
Cement
Leather Footwear

Handicrafts and Handloom Products

Applique Work
Silver Filigree & Traditional Jewellery
Lacquerware
Pattachitra and Ganjappa
Wood Carvings
Palm Leaf Carvings
Stone Carvings
Flexible Brass Fish
Dhokra Castings
Horn Articles
Gloden Grass Articles
Sabai Grass Products
Papier Mache Marks
Mulberry & Tassar Silk Fabrics
Cotton Handloom Fabrics

'ARAKANTA MOHANTY

C. V. RAMAN : THE SCIENTIST

The highest meritorious honour, the Nobel Prize, conferred upon late C. V. Raman in 1930, was perhaps the first real refutation of the myth which Rudyard Kipling, the inventor of the phrase "White Man's Burden", epitomised with galla erudition, in "The Ballat of the East and West".

" On, East is East, and
West is West, and
never the twain shall ever meet,
Till Earth and Sky stand
Presently at God's great
Judgement seat".

Was not Kipling mislead by the sway of time ? Perhaps Kipling had that purochial conviction that East has or had no aptitude for science in any ages, except being the lands of phophets, saints and poets and as if, it was his superb vanity, to conclude that western nations have exclusive monopoly on the business of science.

But this glorious golden land, whose soil is not only fertile in fostering and fondling in her own lap the phophets, saints and poets from days of yore, like Veda Vyasa, Panini, Valmiki, Lord Krishna, Goutama Budha, Kavir, Shankar, Ashok, Tulsidas, Kalidasa, Magha, Bharabi, Ghanakya, Manu, Vartruhari, Banavatta, Asvaghosh, Kalhana, Nanak, Chaitanya, Kabir, Surdas, Mirabai and Nobel prize winner Rabindranath Tagore, but also a galaxy of luminous Indian scientists; from time immemorial, experts in different branches of science like Vrugu, Varahamihira and Parasara in astronomy and Lilavati, Ramanujan and Viseswarya in the field of mathematics and Charaka, Shushruta and Dhanwantari, in the field of medical science and most illuminating of Nineteenth and Twentieth century scientists like J. C. Bose, R. C. Bose, S. N. Bose, S. Chandrasekhar, H. J. Bhabha, D. S. Kothari, K. S. Krishnan, M. N. Shah, J. V. Narlikar, P. C. Mahalnobis and the present living pride of India, Hargobind Khoranna, the Nobel winner of 1968.

C. V. Raman's sad demise, is an irreparable loss to India in the field of science.

Whatsoever may be the fame of C. V. Raman abroad, but his life span of eighty-two years presents before the Indian scholars a scholastic and research career.

C. V. Raman, the second child of his parents was born on 7th November 1888 at Trichinapalli. During his High School career, he was deeply interested in science. But the religious surroundings of his family had infused some trends of religious thought, so that he became too much interested in reading epics like Ramayana and Mahabharata. But, science in no way was his favourite subject.

While he was a B. A. student, he got opportunities to publish some of his articles in the Philosophical magazine, published by British Philosophical Association and in important magazines like 'Nature'. His Professor Jones was impressed to read such articles of first rate standard.

In the year 1907, he passed his M. A. Examination in Physics. After that he appeared the competitive examination, and stood first and was appointed as Deputy Accountant-General of Post and Telegraph at Calcutta. After his appointment he was married to Trilok Sundari at Madras. As Deputy Accountant-General, Post and Telegraph he proved to be very competant and his immediate authorities were extremely pleased to recommend his name to to be the Finance Secretary of the Government of India. But for his research mind he did not like the assignment.

While at Calcutta, he was deeply interested, in the work of "Indian Association for the Cultivation of Science", which was established by Mahendra Lal Sarkar. Once the Honorary Secretary of I. A. C. S. Amrit Lal Sarkar was so much impressed upon reading some of his articles so that he enlisted his name as a member of that association. Daily morning and evening, he was engaged himself in the laboratory. There Raman had to publish some research papers on the theory of sound. But Raman's research career was put to a temporary halt as he was transferred to Rangoon and from Rangoon to Nagpur. In the year 1911, he was again transferred to Calcutta. In the year 1914, a conference of All-India Science Congress was held at Calcutta. There, one of the research papers of Raman, caught the sight of eminent educationists like Sir Ashutosh Mukherji, the Vice-Chancellor of Calcutta University. Sir Ashutosh made up his mind to appoint him as Lecturer in Calcutta University. The minimum requisites to be a Lecturer there was that he or she, should have obtained a degree from the Foreign University. But Raman had no such degree. Ashutosh induced him to go abroad. Ultimately Raman had to resign from the service in 1917 and was appointed as a Lecturer, there. From 1917 to 1933 he was the Palit Professor of Physics at Calcutta University.

In the year 1919, he became the Secretary, Indian Science Congress, owing to the death of Shri Amrit Lal Sarkar.

In 1921, he was selected to represent India at a conference of the British Universities, held at London. Raman attended the conference and delivered lectures in different places. His theories was acclaimed by the Foreign scientists. Royal Society of London included his name as a member there. In Devis Farrade

Laboratory at London, he worked for some time. Then he proceeded to Toranto, attend to International Congress for Mathematics.

From Toranto, he went to Canada, to attend a Science Congress. There he had to make fundamental experiments on light. In the Institute of Californian technology he was appointed as the visiting Professor. From Canada, he returned to England and in 1925 came back to India. In India, he did not refrain from his research work and ultimately invented the famous Raman Effect. He had visited U. S. S. R., Italy, Germany and Switzerland. After returning from Europe he published the Indian Journal of Physics.

In 1929, he became the President of Indian Science Congress. The same year, he was conferred upon knighthood by the British Government. The year 1930 was an important land mark in his career, as he was awarded the Nobel Prize in Physics.

In 1933 he came back to Bangalore. There he established 'The Indian Institute of 'Science' and became its Principal.

In 1934, he established the Indian Academy of Sciences at Bangalore and became its first President. This academy was entrusted with publication of research papers on experimental science. Between 1922-1931, he had published 330 papers on different aspects of science.

From 1933 to 1943, he was the Director, Indian Institute of Science, Bangalore.

In 1943, he founded Raman Reserch Institute at Bangalore. Up to his death he was engaged in conducting experiments on atoms of diamond.

C. V. Raman, was the first scientist not only of India, but also of Asia to win the Nobel Prize. Besides, in 1929, he was awarded Mateuchi Medal of Rome. In 1930, he was awarded Hughes Medal of Royal Society. In 1947, he became the corresponding member of the Soviet Academy of Science. In 1949, he was proclaimed as National Professor and in 1949 he became the Fellow of Foreign Associate of Paris Academy. In 1951, he was awarded Franklin Medal from Philadelphia Institute.

In 1954, he was awarded Bharat Ratna and in 1957 he received the International Lenil Prize.

Besides, he was the Honorary Fellow of several Scientific Academics and had received Honorary Ph. D. degree from Freiburg University and Hon. D. Sc. from several Universities in India and abroad.

Scholars remember him and will remember for generation to come as the author of Molecular Diffraction of light, Mechanical Theory of Bowed Strings and Diffraction of X-Rays, Theory of Musical Instruments and Physics of Crystals.

The importance of the Raman Effect springs from the fact that the associated colour shift in an incident beam of light in a measure of the energy lost by the incoming light protons. But as the loss of light photos in the gain of molecules with which they have had a close brush or collision, it also provides a measure of the increase of internal energy gained by

the molecules. A study of Raman effect thus makes it possible to map out the levels of possible energy gains of the molecules and atoms of the substance, from which it is but a step to infer the details of its molecular and atomic structure. In other words, here is a technique for exploring the interiors of molecules and atoms.

One consequence of the use of such molecular and atomic probing machines as the Raman spectroscope, electron microscope and Ultra-Centrifuge is that the knowledge acquired through them has shown the way to synthesise. More and more artificial molecules, many of them vital to industries such as colour photography, plastics and synthetic rubber has sprouted during the past few decades from our deepler understanding of the interior structure of molecules and atoms. Today, not only many of the fabrics, we wear but many of the colours we enjoy, the fuels we use and drugs we consume have been developed in this way.

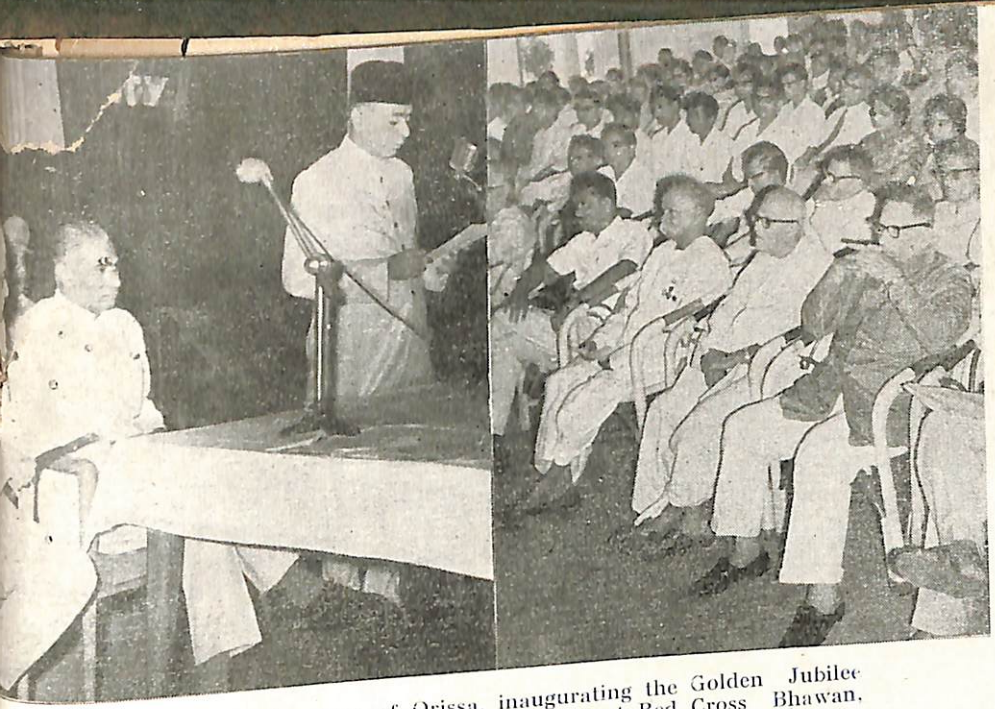
Raman had fascination to know the mathematics of the vibration of Indian musical instruments like Veena, Tanpuru and Mridangum. Perhaps he was the first non-German Scholar, who was requested by the Board of German Encyclopaedia of Cantemporary of Physics, to contribute an article in the theory of Musical Instruments. Raman's experimental essay on this topic was highly appreciated there.

Raman till his death was more interested in Synthetic diamonds than in Synthetic drugs. For Raman was also an artist in the appreciation of light, Colour and form. His aesthetic description was par excellence.

What is famous as Raman effect can be demonstrated on a number of liquids like alchohol. After his Nobel prize winning, when in a banquent held in his honour, drinks were offered to Raman who was a strict vegetarian. The hosts said "You delighted us in the morning with a demonstration of Raman effect on alchohol. Why not continue the pleasure by a reciprocal exhibition of alcoholic effect on Raman ? To this Raman replied that the alchohol had no effect upon Raman, rather Raman effect has more effect on alchohol.

CHRONOLOGY IN C. V. RAMAN'S CAREER

November 7, 1888	..	C. V. Raman was born.
1907	..	Passed M. A. in Physics from Madras University.
1917—1933	..	Palit Professor of Physics, Calcutta University.
1919	—	Secretary, Indian Science Congress.
1921	..	Sir Asutosh Mookherji, the V. C. of Calcutta University, became benign Patron to send him England.
1925	..	Theory of Raman Effect came to light.



Dr. S. S. Ansari, Governor of Orissa, inaugurating the Golden Jubilee Celebrations of the Indian Red Cross Society at Red Cross Bhawan, Bhubaneswar on November 15, 1970

NEWS IN PICTURES

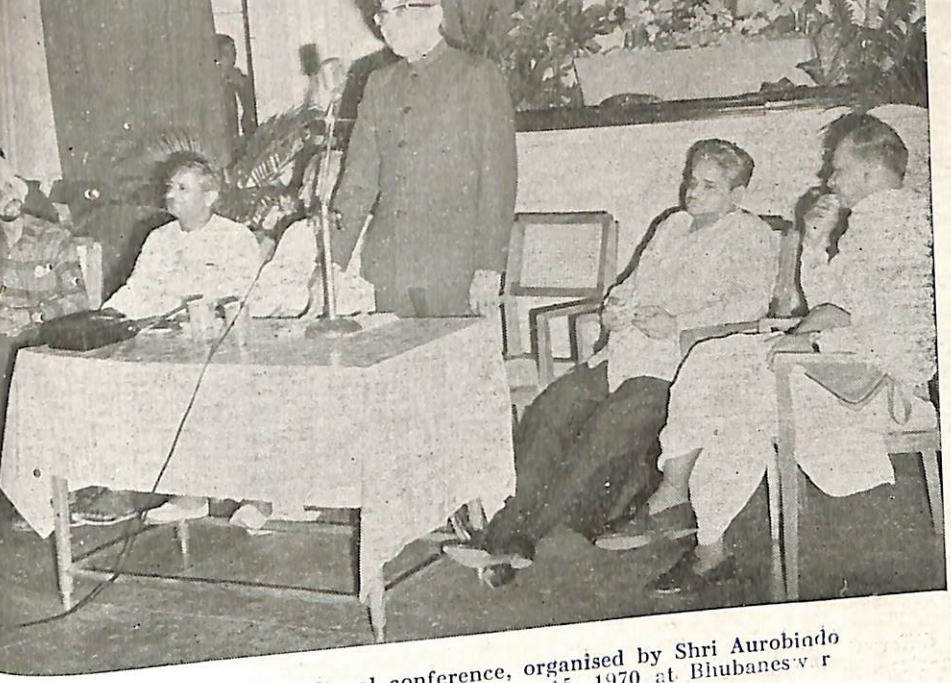
Chief Minister Shri R. N. Singh Deo, inaugurating the Health Home for the children of leprosy patients at Saheed Nagar, Bhubaneswar on November 16, 1970 as a part of the Golden Jubilee celebrations of the Indian Red Cross Society in Orissa

Chief Minister Shri R. N. Singh Deo laying the foundation of the Zira Bridge on the National Highway No. 6 on November 21, 1970

NEWS IN PICTURES

Rt. Hon. Sir Morrice James, High Commissioner for U. K. in India called on the Chief Minister Shri R. N. Singh Deo, on November 25, 1970 at Bhubaneswar

Chief Minister, Sir James and Shrimati Singh Deo are seen in the picture

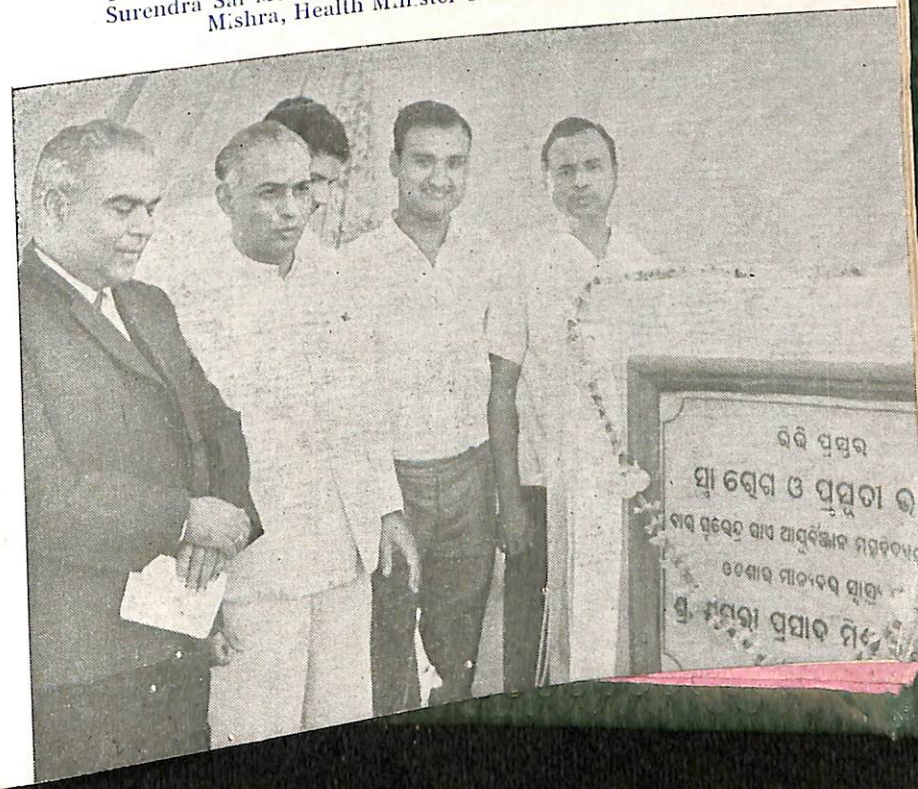


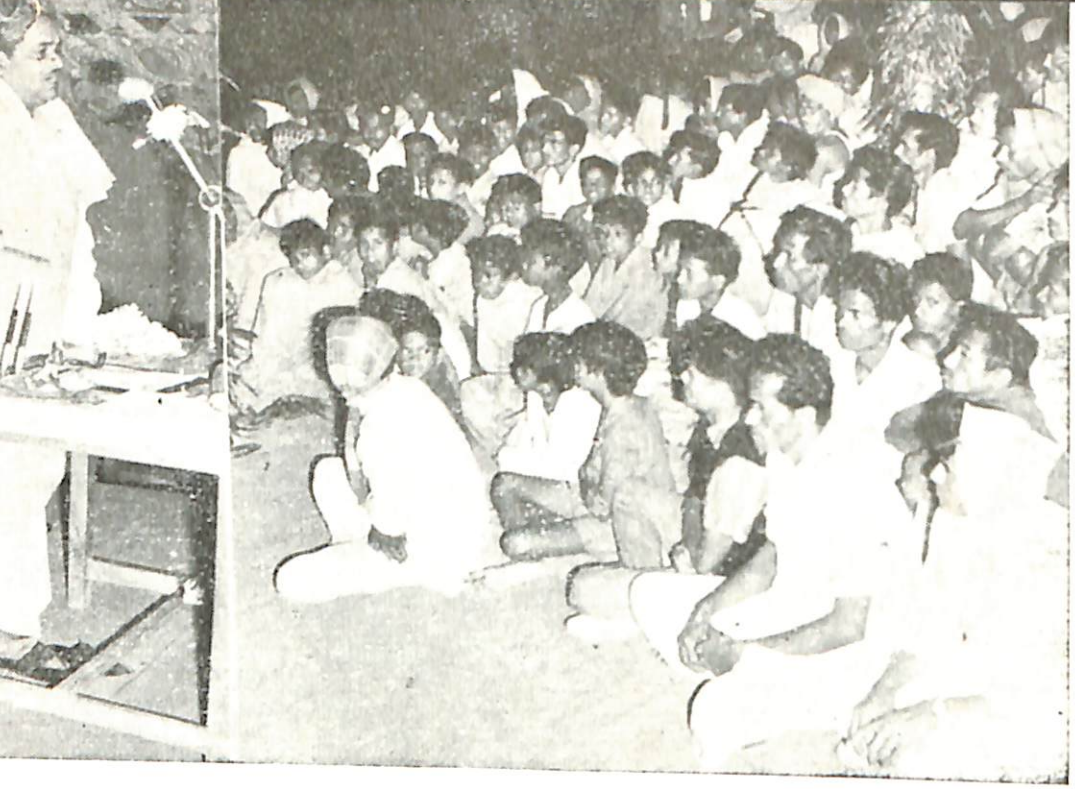
The three-day annual cultural conference, organised by Shri Aurobindo Sanskruti Sansad Concluded on November 15, 1970 at Bhubaneswar

Picture shows—Shri R. N. Singh Deo, Chief Minister, Orissa, delivering the presidential address at the concluding function

NEWS IN PICTURES

The foundation stone for Gynaecology and Maternity Ward of Veer Surendra Sai Medical College, Burla was laid by Shri Murari Prasad Mishra, Health Minister of Orissa, on November 6, 1970





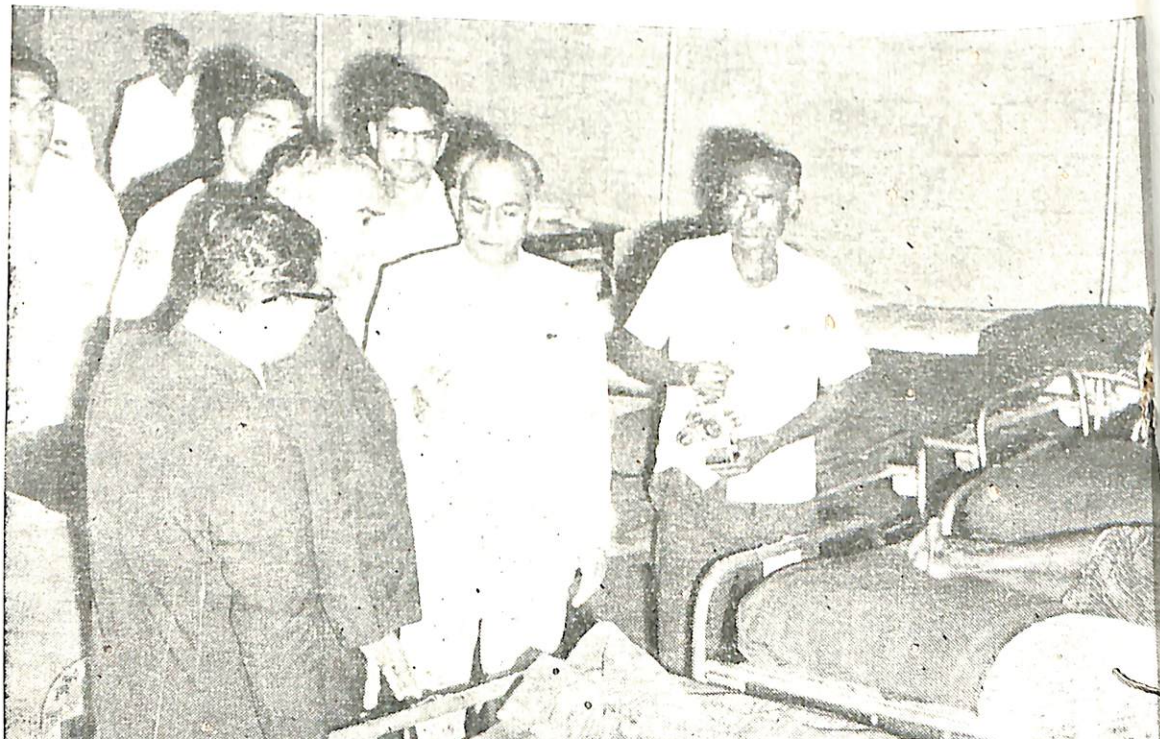
Seminars were held in different Radio Rural Forum Villages of Orissa to mark the eleventh anniversary of the scheme

Picture shows Shri H. Patel, Minister for Industries and Public Relations, *addressing* a seminar in Ghumsarpadar village in Chahka Block of Puri district

NEWS IN PICTURES

The first camp of the Chittaranjan Mobile Hospital attached to V. S. S. Medical College, Burla, was inaugurated at Gudbhaga in Sambalpur district on November 5, 1970 by Shri Murari Prasad Mishra Minister for Health and Family Planning, Orissa

Picture shows Shri Mishra going round the hospital after inauguration

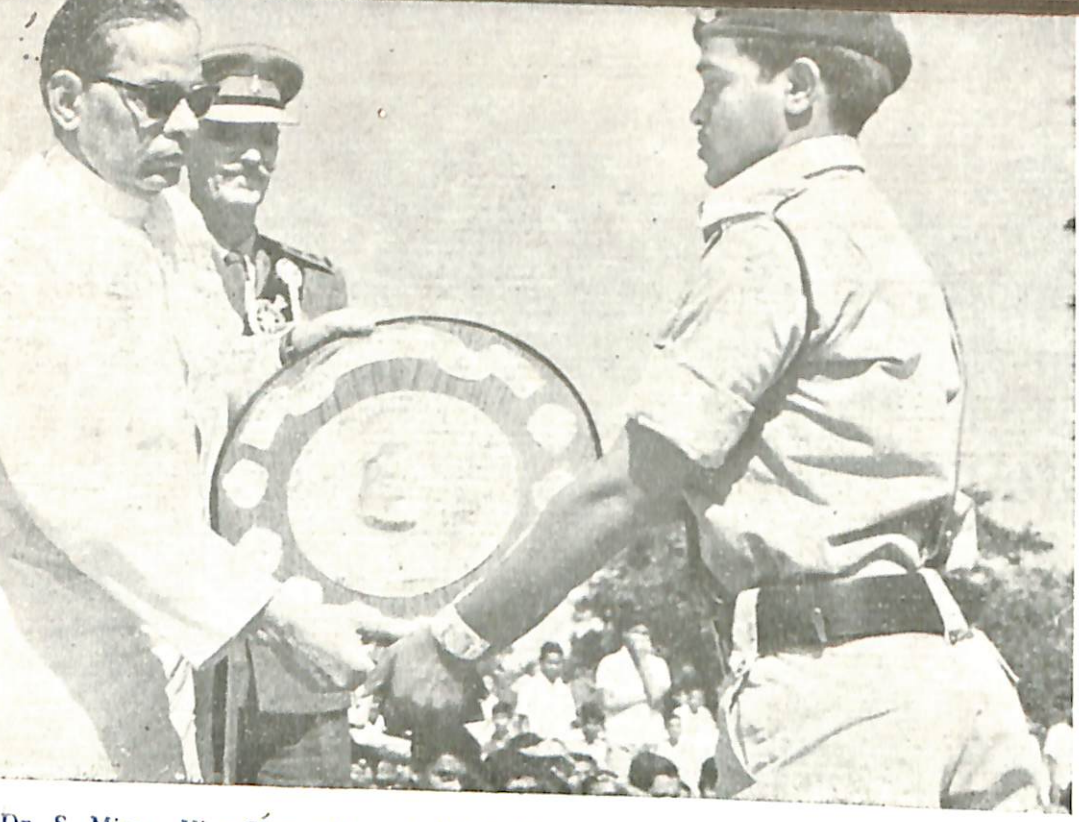


The Head Mistress of St. Mary Girls' High School, Rajgangpur receiving a Small Savings Shield from Shri R. B. Mishra, Minister for Agriculture at a function at Sundargarh on November 14, 1970

NEWS IN PICTURES

A special feeding programme for the children of urban slum dwelle of Cuttack city was inaugurated at Muradkhan Patna on November 1 1970

Picture shows—Deputy Minister for Community Development & Gran Panchayat Shri A. N. Singh Deo, distributing vitaminised milk brea to children



Dr. S. Misra, Vice-Chancellor of Utkal University, who was the Chief Guest at the N. C. C. Day Parade at Bhubaneswar on November 22, 1970 is seen presenting a running Shield to the Senior Division Unit of the Regional College of Education for their best performance at the N. C. C. Day Parade

NEWS IN PICTURES

Children's day celebrations at Cuttack
Shrimati Chakravarty distributing prizes to the winners in various competitions

Mr. Olivier Long, Director-General, GATT and Madam Long arrived at Bhubaneswar on November 15, 1970 on a three-day visit to Orissa. They were received at the Airport by the State Home Secretary Shri B. B. Rath, I. A. S.

(From left to right—Mr. Long, Madam Long, Shri B. B. Rath and Shri B. N. Swarup, Joint Secretary, Ministry of Foreign Trade, Government of India)

NEWS IN PICTURES

Children's Day celebrations at Balasore. Shri Debasis Chattergee of Mission U. P. School, who was awarded the first prize in Fancy Dress competition is seen in the picture

A Kalinga Silver Filigree Casket is being presented to H. E. Mr. J. de Lagarde, the Ambassador of France in India by Mr. S. P. Godrej President, Indo French Technical Association, Bombay

NEWS IN PICTURES

A scene from Sanskruti Vihar's panoramic Amphi-theatre production "Bali Jatra" written and directed by Dhiren Dash at the Killa Maidan Cuttack during Bali Jatra Festival on November 11, 1970

1928	..	President, Indian Science Congress.
1929	..	Knighthood awarded by British Government.
1929	..	Awarded Matteuchi Medal, Rome.
1930	..	Awarded Hughes Medal, Royal Society.
1930	..	Nobel prize in Physics.
1934	..	Established Indian Academy of Science and became its president
1933—1943	..	Director, Indian Institute of Science, Bangalore.
1943	..	Founder—Director, Raman Research Institute, Bangalore.
1947	..	Became, Corresponding member, Soviet Academy of Sciences.
1948	..	Acclaimed as National Professor.
1949	..	Fellow, Foreign Associate, Paris Academy.
1951	..	Awarded, Franklin Medal, Philadelphia Institute.
1954	..	Awarded *Bharata Ratna*.
1957	..	International Lenin Prize.
November 21, 1970	..	Lamp of his life extinguished.

CALENDAR OF EVENTS (ORISSA) NOVEMBER, 1970

1-11-1970 ... The Supply Minister of Orissa Shri Nityananda Mahapatra announced food policy of Orissa for the year 1970-71 (Khariff).

28th meeting of the Small-Scale Industries Board began at Bhubaneswar.

5-11-1970 ... 24 passangers were hurt when a freight train ran into a stationary express train near the outer singnal of the Bhubaneswar Rly. Station.

Shri Dinesh Singh, Union Minister for Industrial Development and Internal trade inaugurated "Orissa—70" Exhibition at Bhubaneswar.

6-11-1970 ... Foundation stone of the Gynaecology and Maternity ward of Veera Surendra Sai Medical College, Burla was laid by Shri Murari Prasad Misra, Minister Health, Orissa.

9-11-1970 .. 62 Orissa leaders, 19 M. Ps. and 43 M. L. As. belonging to various political parties began 24 hour Dharana in front of the Prime Minister's residence to press the demand for second Steel Plant in the State. Permanent electrification at Dhabaleswar Siva Temple near Cuttack was inaugurated by the Dy. Chief Minister Shri P. M. Pradhan.

18-11-1970 ... The target for food procurement in Orissa fixed at 3 lakh tonnes for the kharif year ending October 31st, was exceeded.

19-11-1970 ... Decision to constitute District Development Advisery Boards for each district announced.

21-11-1970 ... The Chief Minister laid the foundation stone of a Rs. 18·76 lakh-bridge accross the Jeera River on the Calcutta-Bombay National Highway.

22-11-1970 ... Shri R. N. Singh Deo, Chief Minister, Orissa laid the foundation stone of the Aung bridge neer Agalpur, (in Bolangir district).

24-11-1970 ... The British High Commissioner Sir Morrice James and lady James arrived Bhubaneswar on a 5-day visit to Orissa.

OVER Rs. 5.5 CRORE NEW BUSINESS BY L.I.C., CUTTACK DIVISION

The total new business secured by the Cuttack Division of Life Insurance Corporation of India during the first seven and half months (from April 1 to November 15) of the current financial year amounted to Rs. 5,06,01,300. It involved 7,872 policies. The sum thus assured is 32·9 per cent of the target Rs. 15,35,00,000 fixed for the year. It is also 18 per cent more than the sum assured during the corresponding period of 1969-70.

Rourkela Branch Office of L. I. C. secured the maximum new business during the period. For 1,235 new policies issued by it, the sum assured was Rs. 92,63,500. Cuttack Branch Office came next. Its new business involving 1,344 policies amounted to Rs. 91,05,250. Bhubaneswar Branch Office came third—sum assured being Rs. 62,17,250 and policies involved 1,222.

It may be mentioned that the Cuttack Division of L. I. C. has under it six branch offices at Rourkela, Sambalpur, Balasore, Berhampur, Cuttack and Bhubaneswar, three sub-offices at Bolangir, Jeypore and Dhenkanal and two district centres at Jharsuguda and Keonjhar.

E. S. I. SCHEME INTRODUCED IN JAYKAYPUR CENTRE OF KORAPUT DISTRICT

The Employees State Insurance Corpo tion, Orissa region in September last made yments to the tune of about Rs. 96,500 3,349 insured workers of the State for roviding several benefits. Out of the sum entioned above more than Rs. 53,005 was aid as Sickness Benefit, Rs. 2,324 as xtended Sickness Benefit, Rs. 1,791 as aternity Benefit, Rs. 15,436 as Permanent isablement Benefit, Rs. 21,521 as Tempo ry Disablement Benefit and Rs. 1,739 as ependents' Benefit.

46,720 patients out of which 24,398 ere insured persons and the rest their family members were treated in the Scheme-run Dispensaries. The doctors working under the Scheme made 618 home visits during the month under report. The insured persons were reimbursed about Rs. 3,755 towards the cost of medicines they had purchased.

During the month the Employment State Insurance Scheme was implemented for the first time in Jaykaypur Centre in Koraput district.

ASSISTANCE TO ENTREPRENEURS

The Small Industries Service Institute, Cuttack contacted 435 entrepreneurs on various matters during September, 1970 and provided technical advice to 95 of hem. Export assistance was given to 114 entrepreneurs and 41 were furnished with informations to start new industries. Economic informations were supplied to seven entreprenuers and management advice to 22 others. Other kinds of informations were given to 156 entrepreneuers during the month under report.

During September, the mobile workshop of the Institute imparted training to 92 artisans, paid visits to 14 centres in urban and rural areas and held 15 demonstrations. The Institute's workshop at Cuttack and the Extension Centre, Jharsuguda also assisted 46 and 4 entrepreneurs respectively.

AMENDMENT OF THE ORISSA RICE AND PADDY CONTROL ORDER, 1965

In modification of paragraph 3 of Supply Department Press Note No. 90, dated November 4, 1970, Government have amended the Orissa Rice and Paddy Control Order, 1965, vide their notification No. 20494, dated the 12th November 1970 which shall be given effect to from the 13th November 1970.

As a result of this amendment the quantity for purchase and sale of rice or paddy or rice and paddy taken together, by any person either on his own behalf or on behalf of another or as a commission agent or as an Arhatiya, on any calender day has been restricted to five quintals and the quantity for the storage of the above foodgrains at any time to ten quintals, inside the State of Orissa other than the border area. Border area has been defined in the said control order as a sixteen kilometer or ten mile belt inside the State in respect of all its border districts.

The above restriction shall not apply to a licensed dealer or a cultivator or a landlord or a person specially exempted under proviso to sub-clause (1) of clause 3 of the said Control Order.

DISTRICT DEVELOPMENT ADVISORY BOARD CONSTITUTED

Government of Orissa have decided to constitute District Development Advisory Boards at the district level in order to have the reflection and advice of the public opinion in formulating the development policy and scheme for each district.

The Advisory Boards which would be set up in addition to the District Development Committees already constituted since August last with officials only, will consist of the following members.

Collector of the district (Chairman), M. L. As. and M. Ps. (Lok Sabha) whose jurisdiction comes under the district and M. Ps. (Rajya Sabha) whose place of residence is in the district; All the Chairmen of the Panchayat Samitis of the District; All Chairmen of the Municipal Councils; Presidents of the Central Co-operative Banks; Presidents of the District Land Mortgage Banks, All Members of the District Development Committee. Besides, any representative of the public to be notified by Government from time to time shall also become member of the board.

The Ministers and Deputy Ministers, the Speaker and the Deputy Speaker may nominate any person from their constituency to represent them in the District Advisory Boards.

The District Advisory Board shall meet normally not less than three times in a year at suitable quarterly intervals. Its main function will be to advise Government regarding the formulation of activities at the district level.

It shall also consider and advice as to how best the developmental activities can be expeditiously and efficiently executed

in the districts and suggest ways and means to remove bottle-necks.

In order to enlist the people's participation for implementation of schemes like High Yielding Varieties Programme, Multiple Cropping, Fertilizer use, Water resources management etc., the Board will also help the district authorities where such co-operation and participation is essential for smooth working of the schemes.

NEW SUB-REGISTRATION OFFICE AT BASUDEVPUR

In pursuance of the recommendation of the Orissa Taxation Enquiry Committee, Government have decided that a new Sub-Registration Office will be established at Basudevpur comprising of the Basudevpur P. S. in Balasore district after bifurcating the existing Sub-Registration Office at Bhadrak and Chandbali with effect from the 2nd December 1970 with a view to reduce the volume of excess work-load of the existing Sub-Registration Office at Bhadrak and to afford convenience to the public of the area concerned in getting their work in time.

It is, therefore, published for general information that all documents requiring registration with effect from the 2nd December 1970 in Basudevpur P. S. area will have to be presented for Registration in the new Sub-Registration Office at Basudevpur under the Indian Registration Act, 1908.

NEW SUB-REGISTRATION OFFICE AT CUTTACK AND AUL

In pursuance of the recommendation of the Orissa Taxation Enquiry Committee, Government have decided that a new Sub-Registration Office will be established in Cuttack Town called as 'Cuttack-II' comprising of the Chowdwar P.S. and Tangi P. S. and at Aul comprising of Aul P. S. in Cuttack district after bifurcating the existing Sub-Registration Office of Cuttack Sadar and Pattamundai respectively with effect from the 2nd December 1970 with a view to reduce the volume of excess work-load of the existing Sub-Registration Offices at Cuttack and at Pattamundai and to afford convenience to the public of the concerned areas in getting their work done in time.

It is, therefore, published for general information that all documents requiring registration with effect from the 2nd December 1970 in Chowdwar P. S. and Tangi P. S. area/Aul P. S. area will have to be presented for Registration in the new Sub-Registration Office of Cuttack II/Aul respectively under the Indian Registration Act, 1908.

NEW SUB-REGISTRATION OFFICE AT JATNI AND KAKATPUR

In pursuance of the recommendation of the Orissa Taxation Enquiry Committee, Government have decided that a new Sub-Registration Office will be established at Jatni comprising of the Jatni P. S., Chandka P. S. and 44 villages of Bhubaneswar P. S. (list enclosed) and at Kakatpur comprising of the Kakatpur P. S. in Puri District after bifurcating the existing Sub-Registration Office at Bhubaneswar and Gop respectively with effect from the 2nd December 1970 with a view to reduce the volume of excess work-load of the existing Sub-Registration Office at Bhubaneswar and at Gop and to afford convenience to the public of the concerned areas in getting their work done in time.

It is, therefore, published for general information that all documents requiring registration with effect from the 2nd December 1970 in Jatni P. S., Chandka P. S. and 44 villeges of Bhubaneswar P.S. area/ Kakatpur P. S. area will have to be presented for Registration in the new Sub-Registration Office at Jatni/Kakatpur respectively under the Indian Registration Act, 1908.

LIST OF 44 VILLAGES OF BHUBANESWAR P.S. TRANSFERRED TO THE NEW SUB-REGISTRAR OFFICE, JATNI

1. Padhan Sahi, 2. Betanda, 3. Orakul, 4. Madhipur, 5. Balbhadrapur, 6. Kantilo, 7. Kupo, 8. Khetrapal, 9. Panchagaon, 10. Subranpur, 11. Nadipur, 12. Panchupali, 13. Brahmakundal, 14. Jhinkherda Satrusal, 15. Tenyuliapada, 16. Jamukhol, 17. Sana Nuagaon, 18. Ashrayapur, 19. Barapada, 20. Nabinpur, 21. Mundal, 22. Juanga, 23. Damodarpur, 24. Chatrapur, 25. Srinibashpur, 26. Sijua, 27. Patrapada, 28. Bhagabanpur, 29. Sijuput, 30. Sahajapur, 31. Naragoda, 32. Subudhipur, 33. Tanando. 34. Bijipur, 35. Balipada, 36. Kashipur, 37. Mahura, 38. Nanapur, 39. Nandapur, 40. Narasinghpur, 41. Pandiapada, 42 Retanga, 43. Dasabatia, 44. Beguniabarehi.

FINANCIAL ASSISTANCE FOR HOTEL INDUSTRY

Government of India have liberalised the terms and conditions for sanction of loan from Hotel Development Loan Scheme with a view to attract entrepreneurs for undertaking hotel construction programme in the country.

According to the revised scheme drawn up by the Government of India, Co-operative institutions, trusts including charitable trusts are now eligible to secure loan facilities, besides, the Public and Private Ltd., Companies.

The scheme implemented by the Ministry of Tourism and Civil Aviation, Department of Tourism 2 years ago was intended to provide a specialised source of finance for development of hotel industry at the places of tourist importance. Under the scheme, loan assistance is available both for construction of new hotels in all categories and hotels as well as expansion or rennovation of existing

Another change in the revised s announced by Government of Ind that the maximum amount of loan granted has been raised from 66 pe to 75 per cent of the value of the assets of the hotel projects, viz, Buildings, Fixed Plant and Machine The total period of repayment of lo also been extended from 12 years years for new construction and 8½ years to 10 years in the case of re tion and expansion.

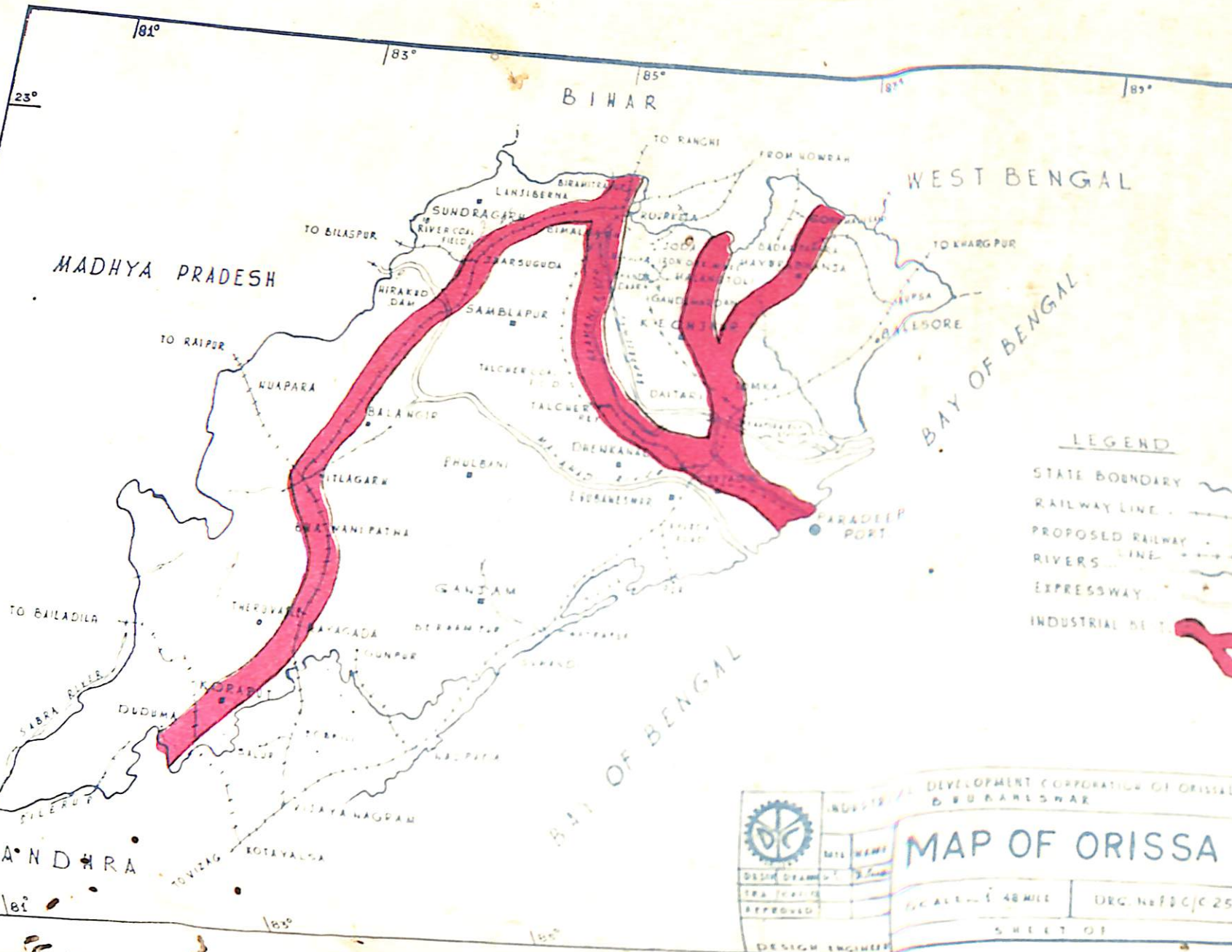
Other details of the scheme can from the Director of Tourism, Gov of Orissa, Bhubaneswar or from Director General of Touris Secretary, Hotel Development Loan Department of Tourism, Transport Parliament Street, New Delhi.

OGP—MP-III [Home (P.R.)] 157——1200

The sacred relics of Shri Aurobindo were installed at Jagatsinghpur in uttack district and at Jeypore in Koraput district with full state honour on December 9, 1970

Picture shows : The Chiief Minister Shri R. N. Singh Deo receiving the rns containing the relics at Bhubaneswar Airport on December 6, 1970

Dr. H. Mahatab is receiving the sacred relics of Shri A from Deputy Chief Minister Shri Pabitra Mohan Pr Shri Aurobindo Bhawan, Unit-3, Bhubaneswar, on December


81°
83°
85°
87°
89°
23°
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA
BAY OF BENGAL
BAY OF BENGAL
TO RANCHI
FROM HOWRAH
TO BILASPUR
TO RAIPUR
TO KHARAGPUR
TO BAILADILA
SUNDARGARH
RIVER COAL FIELD
BIRMITRAPUR
LANJIBERNA
KUJPETA
JODA
BARSUGUDA
HIRAKUD DAM
SAMBLAPUR
BALASORE
KUARA
BALANGIR
TALCHER COAL FIELD
TALCHER
DAITARI
DHENKANAL
BHULBANI
BHUBANESWAR
PARADEEP PORT
PURI
KHURDA
GANJAM
BERHAMPUR
KORAPUT
JEYPORE
SILERU
VISAKHAPATNAM
KOTAVALSA
LEGEND
STATE BOUNDARY
RAILWAY LINE
PROPOSED RAILWAY
RIVERS
EXPRESSWAY
INDUSTRIAL
DEVELOPMENT CORPORATION OF ORISSA
BHUBANESWAR
MAP OF ORISSA
SCALE 1" = 48 MILE
DRG. No. DC/C 25
SHEET 01
DESIGN ENGINEER