

# Place of Science in a People's Movement—II

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BESIDES the matter of scientific observation which I have discussed, the second dimension of the method of science is concerned with analytical thinking, or the logical process. Let us examine its role in social sciences. Once again I would like to share one of our experiences with you. Along with our cattle development programme in 1972, we introduced a new technology of digging irrigation wells in our area. These wells, called ring wells, are made up of prefabricated concrete rings which are sunk in the ground and are able to tap the aquifer in the same way as tube-wells. Inexpensive, technologically within the means of a rural community and constructed within two weeks, ring wells are a text-book example of appropriate technology. Ring wells have spread in more than 100 villages and about 500 such wells are already irrigating approximately 5000 acres of land, generating new employment and changing one-crop zones to two or three-crop zones.

Despite these optimistic observations, our group subjected the data to further analysis. This revealed in 1977 that the wells had then increased the annual agricultural production of the area by Rs. 12.5 lakhs. Out of this additional annual income, Rs. 9.5 lakhs had gone to the 300 farmers who then owned the ring wells. The remaining Rs. 3 lakhs were distributed among a couple of thousand of farm labourers. Obviously much more had gone to the landed few and much less to the large number of landless in the area. We concluded that the production of ring wells, though benefiting the region in an absolute sense, was at the same time increasing the gap bet-

This is the second and concluding part of Dr Sadgopal's Vikram Sarabhai Memorial Lecture (August 12, 1981). The first part appeared last week (*Mainstream*, August 22). Dr Sadgopal is Director, Kishore Bharati Group.

ween the rich and the poor.

The realisation of this limitation of agricultural development as a means of solving rural poverty forced us to explore alternatives. We examined the case of cottage industries as an instrument for generating rural employment. A number of exploratory projects such as carpentry and manufacture of electric chokes were undertaken. In addition, markets were surveyed to assess the potential of selling a variety of cottage-industry products ranging from soaps to *agar-battis*. The size of local markets for indigenous shoes and ready-made clothes was also assessed. The results of this entire exercise were compiled and analysed. We discovered that a total of about twenty cottage industries could generate jobs for only about 100 poor families in Bankhedi Block consisting of 125 villages and more than one lakh people. Obviously a drop in the ocean. We also found out that most of the transactions in the village markets involved the well-to-do and the middle classes. The poor, despite their vast majority, had only a small share.

Analysis also revealed that the limited potential of cottage industries in rural areas had little to do with lack of knowledge of modern technology, or with low trainability, or with meagre managerial skills, but it had more to do with the limited capabilities of markets. The low purchasing power of the vast majority of the people living below the poverty line and the domination of village markets by competitive goods from urban middle-size and monopolist industries defined the boundary conditions of the rural marketing system. Despite this glaring reality, the Government agencies and several voluntary groups continue to glamorise the role of cottage industries in rural development.

Why has this reality been so systematically ignored by so many groups and agencies over the last several decades? Why is it that this simple analysis of the limitation of cottage industries has not been presented from public platforms by the Government's departments of Industries and a large number of voluntary groups? Is it that the educated elite and the national leaders are incapable of the needed logical exercise or is it that the socio-economic crisis and the insoluble problems of rural poverty make it too dangerous to scientifically accept this reality?

What concerns us at the moment is not the limitations of cattle development, or of irrigation programmes, or of cottage industries as instruments for solving India's poverty, but the fact that an analytical view of rural development problems is not being shared with the people of this country. Our brief experience has revealed to us that rural society is critically divided into two sections — a small minority of the rich and middle-level farmers which siphons off the benefits of development programmes and has vested interest in their continuity, and a vast majority of the landless, marginal farmers, and artisans which is excluded from this process and is generally not influenced by what goes on in the Planning Commission and the agencies or Departments concerned with Industry, Development, Science and Technology.

Whenever somebody preaches rural development

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we always want to understand whose development is being talked about. Is one referring to development of the moneylender or of the rich farmers or of the marginal peasants or of landless labour? When such analysis is negated, it leads to the typical confusion which is reflected in such questionable phrases as the rural-urban gap, or planning from below, or community development, or *panchayati raj*, or people's participation. Such phrases presume the existence of a homogeneous community or imply that the poor do not exist in cities and the rich do not live in villages. It is our contention that as long as scientific analysis of India's development experience is avoided or suppressed, the basic premise of the entire planning process will remain untenable.

Regarding scientific analysis, there is often loose talk about this process being the exclusive preserve of the educated elite. Our experience of non-formal education has given us sufficient evidence to challenge this grave mis-understanding. I am reminded of a brief interaction with a representative of the Khadi Gramodyog Commission who once met me accidentally in a bank office. He was looking extremely unhappy. On enquiry he said his main job was to popularise the electrically-operated potter's wheel, nicknamed "Power Chak". He was disturbed because, despite his hard work, no potter was willing to accept a power chak, although he was offering subsidies, low interest credits and all other necessary support. I asked him if he could explain his failure to popularise what he called appropriate technology. He said the people of this District were uneducated and did not understand modern technology and, therefore, rejected the power chak. He had reached a conclusion which was typical of what is widely accepted by the educated elite. I decided to help him unravel the situation.

On being questioned, he readily accepted that the potters he had met in villages had difficulty in selling what they produced on their chak, and therefore were often without business. I asked him to explain how the power chak, meant for increased production, would help a potter who was already unable to sell his products. What was the potter's problem — the market or his ability to produce? The Khadi Commission's representative gradually began to see the logic and accepted that the Commission's example of appropriate technology was, after all, not so appropriate. The uneducated potters on their own had conducted a logical analysis, of the conditions which constrained them from earning more, and, therefore, had a scientific basis for correctly assessing the role of power chak in their lives, something which the experts in the Khadi Commission had failed to do.

Let us consider a recent experience. A group of about one hundred landless and marginal farmers from an adjacent village approached us last month to explore a new path for solving their problems of poverty — they needed land, rights to certain minor forest produce, and demanded a fair share in the distribution of Government-controlled sugar. They had decided to organise themselves and challenge the control of the feudal forces on their lives. We pointed out to them the risks involved in this path

and drew their attention to how their attempts to improve their conditions could be quashed by the joint action of the local landlords, the revenue authorities and the police. This was of course already well known to them. We demanded to know from them what they felt was their bargaining point. One of their leaders, who could not even sign his name, gently pointed out: "It is *we* who produce goods and *they* consume only what we produce for them. If we stop working, they shall starve. This is our bargaining point." We have accumulated a series of such experiences which show that the poor people who suffer oppression and exploitation have remarkable abilities for participating in a growing analytical process and have often amazingly correct analysis of the obstacles in the path of their own development.

FROM all this, we would like to postulate five significant hypotheses. These are being postulated in the hope that these will accelerate experimentation and further testing to evaluate their validity or lack of it. At this stage, these may be regarded, at best, as tentative and partial.

(i) Correct observation and scientific analysis are essential tools for comprehending the socio-political reality around us.

(ii) There are more ways than one of observing the reality in social sciences. What aspect of the reality one perceives is critically related to one's cultural and economic background. In contrast, the process of observing and analysing reality in the natural sciences is dependent only on the scientific skills of the worker, and not on his or her class background.

(iii) The ability to make correct observation and to conduct analysis in the natural sciences can be developed through training. However, in the field of social sciences, the attempts to improve observational skills and analytical abilities often do not succeed when there is a clash of vested interests. Thus there are inherent factors in the social sciences which limit the application of the scientific method.

(iv) The potential for the scientific processes is not confined to the elite and the educated sections of our society. Such potential exists amongst the oppressed and the uneducated people and can be further enriched through training and experience.

(v) The process of socially relevant planning is one in which the planners work with the oppressed people to develop a scientific basis for observation and analysis. Without establishing such a process, the dichotomy between today's development and social change programmes, on the one hand, and the lives of the oppressed people, on the other hand, will never be bridged.

THESE hypotheses help us to define the role of science in building a people's movement. As we understand it today, the primary role of science is in enabling the people to comprehend the socio-political reality of their environment through the scientific method so that their struggles for justice and development can be planned on the basis of reliable data and logical thinking. The process of education is thus defined as the process of spreading the method of science among

the people to enable them to understand the obstacles which prevent their development and to successfully plan their struggles for justice.

If the role of science in people's movement and the educational process as understood by us today is acceptable, we may then contend that it would be essential to spread the scientific method for the purpose of training cadres and creating people's organisations. How is this theoretical understanding of the role of science and of the educational process to be implemented in field situations? What have been the experiences in doing such work? What are the obstacles in developing this educational process with people? In order to explore answers to this question we must first break down scientific method into its essential elements: desire to know or inquisitiveness, observation, data collection, analysis and inference are some of the elements on the basis of which an educational programme may be conceived.

Let us take a concrete example. Early this year we organised a youth camp around the problem of tuberculosis in villages. The young participants were asked to survey the incidence of tuberculosis, its relationship with the working and living conditions of the people, the role of the National TB Control Programme and limitations imposed by social structures on the treatment of the disease. For several days the participants toured villages in teams, collected data, listened to agonising stories of whole families being wiped out by the disease and of the role being played by Government doctors, private practitioners and feudal forces. The entire data were compiled teamwise and then the teams were asked to make a list of all the problems they had perceived during the survey. From these teamwise lists a common list was then prepared, on the basis of which a detailed discussion followed on the causes of TB, of its high incidence amongst the poor people and of the inability of the Primary Health Centres to play an effective role in the treatment. The discussion focussed on the reasons behind the non-percolation of the benefits of the National TB Control Programme and what it reveals about the structure of village society.

On the basis of this analytical understanding, the youth camp concluded that there was no use in starting a parallel medical service while a fullfledged national programme existed. It was much more important to make the people aware of the facilities available under the national programme and to enable them to demand their share in this. This example of educational process shows us how a group of young people planned the next phase of their activity by applying the scientific method to their experiences.

During our experience of spreading scientific method amongst the oppressed people, we have identified five major obstacles, namely, (1) information gap; (2) tendency to follow traditions; (3) fatalism; (4) fear of reprisals by the vested interests; and (5) inability for abstraction. Let us take these one by one.

It is a general experience that lack of information among the oppressed people is often a great limitation in understanding their own reality. When this gap is filled, ability to comprehend reality builds up

quickly. This is exemplified beautifully by the work of the Kerala Shastra Sahitya Parishad (KSSP) in Calicut District. KSSP took up the problem of pollution caused by a well-known rayon factory in the village of Walcad near Calicut. This factory, located on the banks of the river Chaliar, has totally polluted the river as well as the air. The people of Walcad village have suffered heavily in health, in their farming and in many other ways. Yet for years they accepted this state of affairs with only grumbling and not much more. KSSP encouraged the students of Calicut Medical College to organise a health survey. The survey revealed a high incidence of a particular lung disease caused by the presence of sulphur dioxide and carbon monoxide. KSSP then sent a team of biologists, chemists, geologists and engineers. The team prepared a massive report and took colour slides of the polluted river and finally prepared a technical plan for controlling pollution. On the basis of all this, KSSP conducted intensive evening classes for several weeks to share this rich information with the poor people of Walcad village. When we visited this village last year, we were amazed to see how technical terms such as sulphur dioxide, carbon monoxide, percentages and solubility had become part of the common idiom. The evening classes soon led to the demand by organised villagers that the factory implement KSSP's technical plan for controlling pollution. The long-drawn struggle eventually cornered the powerful industrial group which had no logical way of escaping from this demand without losing its credibility in Kerala. The technical plan is now being implemented and the people of Walcad have at least won their first battle.

The second obstacle of the educational process is the deep-seated tendency to follow tradition. I am reminded of a play prepared by two young villagers of Rohna village near Hoshangabad. These boys belonged to an area which has been affected in a major way by the famous Tawa irrigation dam. The Tawa programme has led to many unanticipated problems, such as creation of water-logged areas, loss of fertile soil and lack of drainage. In addition, the Government passed an Act according to which every farmer in the Tawa command area has to accept land-levelling operations conducted by the Government agencies. The expense of this operation is charged to the farmer. Of course, bank credit is extended to cover the charges normally amounting to Rs. 2000 upwards to Rs. 4000 per acre. The farmers feel tremendous hardship because of being forced to accept this indebtedness.

The play prepared by the boys referred to this problem. In the first few acts they presented the collusion of the revenue officials with the local landlord in persuading the villagers to accept a plan of reconsolidation of land holdings before going in for levelling operations. In the process, the landlord corners most of the fertile land earlier belonging to the poor farmers and the revenue official takes his bribe. Later on the play focusses on the indebtedness caused by the land-levelling operations and has a scene in which the tehsildar is helped by the police to force the villagers to pay their first instalment when their crops had failed due to fertile soil being

disturbed by land-levelling. So far the act shows a close relationship with the reality which exists in the villages of this region. In the last act, the play shows the villagers pleading with the District Collector for relief. The Collector is extremely helpful, is disturbed by the inhuman acts of his tehsildar and of the corrupt revenue officials. He promises immediate relief and orders suspension of the erring officials. We asked the boys whether the last act matches with the real experience. After hesitating, they accepted the fact that the Collector never acts the way he is shown in their play. Why then did you show this untrue picture of the Collector? One of them explained that all stories and films end well and therefore they must end their play also on a happy note. The second pointed out that it would look very bad if the seniormost official of the District is not shown favourably. They had been taught to show respect towards authorities. Having shown some challenge towards the lower officials, they eventually decided to fall in line when the Collector's turn came, lest their elders reject the play.

The third obstacle is the deep-rooted fatalism in our society which often restricts the growth of scientific process. I am reminded of a *Basod* (a harijan bamboo worker) who earns his livelihood by making bamboo products. I once saw him without work at a time when he should have had a big supply of bamboo from the local forest depot. When quizzed, he explained that all the bamboo had been sent to the distant paper mills at Nepa Nagar. This uneducated Basod obviously was well-informed. I prodded him, "How come one paper mill takes all the bamboo away, while thousands of poor Basods like you are deprived?" He was emphatic, "Nepa mills are more powerful than all the Basods put together". I asked him if there was any way in which the Basods could balance the power of the Nepa mills and demand their share of bamboo. He said it would be possible only if they got organised and approached the forest depot collectively. I asked him, "Why don't you do this?" He said, "No, it is not possible. We will never get together. It will take no less than God to bring us together on a common platform. Therefore, this year bamboo is not in our fate." Having given a series of logical and well-informed statements, the Basod finally reached the end of his scientific process. The limit was clearly defined by God and fate together.

The fourth obstacle is the fear of reprisals by the vested interests. The impact of this fear cannot be fully appreciated unless one is involved in the daily lives of the oppressed people. Two years ago, we proposed a programme to a group of *Rajhar Adivasis* of a nearby village through which they would be able to gain rights to grow lac on *Kausam* trees which happens to be their particular profession through generations. So far they had acted as daily wage labourers and grew lac on behalf of big landlords or contractors. Their long-cherished goal was gaining rights to grow lac on their own. Yet, when confronted with an opportunity to gain these rights, no one came forward. We learned later that our evening meeting with the Rajhars was followed by severe threats of being beaten up or lynched by the

local landlord, who also happens to be the Sarpanch, in case they insisted on going ahead with the programme of growing lac. Most of these Rajhars are either indebted to one of the feudal families in the village or work on their farms as labourers. The feudal families were concerned that their economic and political control would be weakened if the Rajhars gained economic independence. For two years we waited for the Rajhars to respond. No amount of scientific analysis of the causes of their poverty and of the manner in which owning of the lac business would alleviate the same would help bring out a response.

And then, suddenly, an unplanned and a totally unrelated incident changed the entire picture. In May this year, Government-controlled sugar was distributed in the village, as usual, unfairly, the poor people being deprived of their fair share by the Sarpanch or the landlord. For the first time in local history, a group of villagers gathered courage and approached the landlord to seek justice. Incensed by the collective courage shown by the villagers, the landlord got a couple of *adivasis* beaten up. There is nothing unusual about such incidents which have been traditionally accepted passively. This time, however, we intervened. The Sarpanch was forced to call a public meeting at which he tendered unconditional apologies. Those of you who have personally experienced feudal India would probably appreciate the impact which this meeting must have made on the minds of the poor people. What two years of continuous discussion with Rajhars and all the application of analytical thinking could not bring about, was achieved suddenly by the emotional impact of the sugar incident. For once there was a real experience to show the people that feudal power was after all not invincible. The limits of scientific method were thus broken. The Rajhars came forward last month to join hands with other oppressed people of the village to become organised, to break out of a century-old feudal framework, and to gain their rights to grow lac on the *Kausam* trees. The scientific processes can once again be initiated and taken to new heights.

The fifth and the last obstacle is the problem of abstract thinking. Let me again refer to the work of KSSP in Walcad village. Towards the end of our visit, we informed the Walcad people that there was an identical problem of river pollution in Shahdol District of Madhya Pradesh where a paper mill owned by the same industrial group had polluted the Sone river downstream. The Walcad people showed no interest. Shahdol and the Sone river were too far away, too remote to have any meaning for them. We then asked them if they perceived any relationship between the local rayon factory and the Government in Trivandrum. Again there was a disturbing silence. Trivandrum did not have much meaning in their local struggle for justice, nor could they see any possible relationship between the factory and the Government far away. Here is a problem of inability for abstract thinking which is going to constrain the building of a people's movement more severely than has been probably anticipated or consciously under-

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# Mitterrand & Africa

ASEEM CHHABRA

A change of government in France is of special interest to Africa, more so to the Francophone African countries, which are even today linked with the political, economic and social developments of the erstwhile colonial power. The victory of Socialist Francois Mitterrand over his Right-wing opponent Giscard d'Estaing is of significance to Africa, since the latter had been responsible for some neo-colonialist French policies. These included French involvement in the civil war in Chad, armed intervention in Zaire, coup in the Central African Republic, support to Morocco in the Western Sahara dispute, and to South Africa and the West in the Namibian imbroglio. How Mitterrand's foreign policy will shape is worth looking into; as things stand today, we can expect major changes in France's African policies.

Mitterrand's involvement in Africa dates back to the early days of the French Republic when, as leader of the Union Democratique et Social de la Resistance, he had taken the major French African inter-territorial political party, the Rassemblement Democratique Africain (led by Felix-Houphouet Boigny of the Ivory Coast) away from the French Communist Party, and towards the ruling centrist groups. When African nationalists blindly supported repressive French policies in Indo-China and Algeria, France rewarded them by granting political rights and other benefits to the African territories concerned. It was this collaboration which finally encouraged France to grant political independence to its African colonies in 1960, while successfully continuing to maintain for more than 20 years its control on the economic and military policies of these.

The changes likely to emerge in Francophone Africa with the

coming in of the first Socialist Government of the Fifth Republic can be anticipated from the statements made by Mitterrand and his party colleagues in the past few months. For instance, on the issue of civil war in Chad, Lionel Jospin, First Secretary of the Socialist Party, recently said there was no question of French intervention in that country. France would try to push forward African initiatives to bring peace in the war-torn nation, he is on record as having said.

Mitterrand himself observed during his election campaign that the first objective of his policy with regard to Africa would be to avoid placing France in any embarrassing situation. According to him the Chad affair was the logical result of a form of "cooperation" incapable of attacking the roots of instability in Africa. Military intervention, systematically practised since 1977, achieved no more than evasion of problems for a while. The first priority must be to attack the profound causes of African instability — insufficient development, regional disequilibrium and South Africa. He wishes to reinforce the OAU, the supra-state structures for cooperation, and to support African solutions politically and materially.

The other remarkable change expected from Mitterrand's programme is a commitment to Namibian independence. In a strongly-worded statement against apartheid, Mitterrand said: "Racial segregation is not a political option, it is a revolting attack on the rights of the human individual. This must be destroyed by isolating the regime on which it is founded".

This policy of Mitterrand's party was also made clear in Jospin's speech at an Africa Day meeting at UNESCO headquarters in Paris, just before the new French Government was announced. Jospin spoke of the illegal occupation of Namibia and its right to independence. Championing the Socialist Party's anti-apartheid policy, he recommended the ending of all trade with South Africa and Namibia (applying it to Namibian uranium also), called for a complete embargo on

the sale of arms to South Africa and an end to all public investments in the white minority ruled state. (France imports 4,000 tonnes of uranium oxide a year from South Africa and Namibia. According to one estimate, France's imports from South Africa amount to five billion French francs. This, however, is only one per cent of its total foreign trade. With the rest of Africa, French trade amounts to 10 per cent of its foreign trade).

The National Secretary for International Affairs of the French Socialist Party, Veronique Neiertz, in a recent interview to *Le Monde*, mentioned the party's determination to increase support for the independent southern African states. She seemed disturbed over the latest policy of the Reagan Administration to stall the smooth movement of Namibia towards independence. She also announced the efforts being made by her party to get Zimbabwean Prime Minister Robert Mugabe admitted to the Socialist International.

A 35-page document, entitled "Le Parti Socialiste et l'Afrique Sub-saharaine", brought out in Paris shortly after the Mitterrand Government took over, reflects the progressive policies of his Government. The document supports the Eritrean national liberation movement, while maintaining that the violation of colonial boundaries was unacceptable. Also, it is proposed to give support to the Western Saharan self-determination movement. This will certainly create strains between France and its present-day ally Morocco, which has been till lately claiming the Western Saharan territory. It will, naturally, bring France closer to the Polisario Front, fighting for the independence of Western Sahara, and to Algeria, which has been backing it.

The Socialist Government has announced its decision to honour all agreements and treaties concluded by the Giscard Government. There are, however, trends that the new Government will bring about certain changes in France's attitude towards Libya thus ending ambiguity in relations. It may be noted that Libya ha

started repair of the French Embassy in Tripoli, which was destroyed during the February 1980 demonstrations.

The franc zone, in which France and its former African colonies participate, suffered a shock within days of Mitterrand's election, when there was a sudden drop in the value of the franc. Such a trend, if it were to continue, could create serious monetary instability in Francophone Africa. Shortly afterwards, the head of the foreign service of the French Treasury had to reassure the franc zone members that there were no plans to devalue the franc and that measures had been taken to prevent further export of francs.

The French President is not happy with the administration of French policy towards Africa. At

the moment three departments — the Foreign Ministry, the Ministry of Cooperation and the Finance Ministry — handle cooperation with Africa, leading to overlapping and confusion. He has suggested that some more coherent "executive instrument" is needed.

Two prominent French African countries, Senegal and the Ivory Coast, have been extremely worried about the Giscardian mistakes in Chad and the very efficiency of French military assistance to African states. Yet, the early July visit of Houphouët-Boigny to Paris was made with the aim of reinforcing Franco-African military and economic ties. Thus, howsoever opposed Mitterrand may be to his predecessor's policies towards Africa, he will find it extremely difficult

to move away totally from the 'neo-colonial commitments' France had made earlier with its French-speaking African allies. How the new President will strike a balance between his ideological purpose and pressure from the Francophone African states remains to be seen.

While Mitterrand may have to do tightrope-walking in French-speaking Africa, his victory is seen as a ray of hope in other parts of the continent, especially Southern and North Africa.

Namibia is a test case for Mitterrand. What is very clear is that he will find it difficult to go along with, France's Western allies, who for economic and commercial reasons adopt an ambivalent attitude towards racist South Africa. □

### Science in People's Movement (from p. 18)

stood so far. Yet there is evidence that the potential for abstract thinking does exist amongst the oppressed people. An example needs to be cited.

In Thane district of Maharashtra an Adivasi movement called *Bhoomi Sena* has taken lead in seeking justice for the oppressed people. Representatives of about 100 village-level *Tarun Mandals* once gathered to plan for their next strike, against the rich farmers, for better wages. An educator raised an interesting question. He wanted to know how the *Tarun Mandals* looked upon other sections of society, namely, small farmers, middle, peasants, landless labourers, and so on. Each representative, one by one, gave his perception of who was a friend of the movement and who was not. Stories were narrated of incidents bringing out the character of various groups. All of these statements were recorded, analysed and an amazing inference was drawn. The conference concluded that the middle-level farmer is not a friend of the movement, since he employs others to do farming just as the rich farmers do. However, the small and marginal farmers who work on their own farms as well as seek employment along with the landless in the lean season must be considered friends, since they are also exploited just as the landless are. Someone pointed out that the poor farmer is in fact exploited twice — once when he seeks *khaoti* (a form of loan) in the lean season from the money-lender along with the landless, and the second time when he seeks loan in the form of seeds to do his sowing. The conference therefore reached a new understanding; in the next strike, small farmers would be persuaded to join hands. Here is an example of the possibility of abstraction from simple experiences, of building up general principles from daily lives. This process of generalisation and creating principles from practice would be a critical dimension of spreading the scientific method.

If we can learn how to overcome the five obstacles

to the educational process which I have listed, we can then see a powerful and growing process of education emerging. If the methods of science can thus be made part of people's thinking, there is hope that the domination of the educated elite and of the vested interests in the field of planning and development can be challenged by the common people. If the oppressed people begin to subject the policies of the nation to scientific analysis, there is hope that a constraint can be placed on the irrationality revealed in the S&T education meeting held under the auspices of the Planning Commission, on the unscientific planning of critical health programmes such as malaria eradication, on the myth being promoted in our school textbooks about population growth being the prime cause of India's poverty and on the introduction of irrelevant activities, such as the slide-cum-tape modules, in our school system, and so on. There would then be hope that the personality cult and sycophancy reflected in the Sarvodaya conference and similar feudal tendencies prevalent in national life would no longer be quietly accepted. Scientific criteria would necessarily be demanded from the leadership for its statements, acts and decisions. If the critical dimension of abstraction could be added to the analytical processes of the people, the people of Walead village would be able to relate their oppression with the oppression of the people of Shahdol, and the linkages between the industrial group owning the rayon factory in Walead, on the one hand, and the Governments in Trivandrum and New Delhi, on the other hand, would become clear to the people of the country. People's organisations built up through scientific processes, hopefully, will not limit their struggles to demands for merely better wages or land, but would instead struggle for ways of creating and sustaining a society relatively free of disparities, exploitation stagnating hierarchies, and other mechanisms of socio-political backwardness. This would then mark the creation of a People's Movement with a difference. (Concluded) □

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### Science in People's Movement (from p. 18)

stood so far. Yet there is evidence that the potential for abstract thinking does exist amongst the oppressed people. An example needs to be cited.

In Thane district of Maharashtra an Adivasi movement called *Bhoomi Sena* has taken lead in seeking justice for the oppressed people. Representatives of about 100 village-level *Tarun Mandals* once gathered to plan for their next strike, against the rich farmers, for better wages. An educator raised an interesting question. He wanted to know how the *Tarun Mandals* looked upon other sections of society, namely, small farmers, middle, peasants, landless labourers, and so on. Each representative, one by one, gave his perception of who was a friend of the movement and who was not. Stories were narrated of incidents bringing out the character of various groups. All of these statements were recorded, analysed and an amazing inference was drawn. The conference concluded that the middle-level farmer is not a friend of the movement, since he employs others to do farming just as the rich farmers do. However, the small and marginal farmers who work on their own farms as well as seek employment along with the landless in the lean season must be considered friends, since they are also exploited just as the landless are. Someone pointed out that the poor farmer is in fact exploited twice — once when he seeks *khaoti* (a form of loan) in the lean season from the money-lender along with the landless, and the second time when he seeks loan in the form of seeds to do his sowing. The conference therefore reached a new understanding; in the next strike, small farmers would be persuaded to join hands. Here is an example of the possibility of abstraction from simple experiences, of building up general principles from daily lives. This process of generalisation and creating principles from practice would be a critical dimension of spreading the scientific method.

If we can learn how to overcome the five obstacles

to the educational process which I have listed, we can then see a powerful and growing process of education emerging. If the methods of science can thus be made part of people's thinking, there is hope that the domination of the educated elite and of the vested interests in the field of planning and development can be challenged by the common people. If the oppressed people begin to subject the policies of the nation to scientific analysis, there is hope that a constraint can be placed on the irrationality revealed in the S&T education meeting held under the auspices of the Planning Commission, on the unscientific planning of critical health programmes such as malaria eradication, on the myth being promoted in our school textbooks about population growth being the prime cause of India's poverty and on the introduction of irrelevant activities, such as the slide-cum-tape modules, in our school system, and so on. There would then be hope that the personality cult and sycophancy reflected in the Sarvodaya conference and similar feudal tendencies prevalent in national life would no longer be quietly accepted. Scientific criteria would necessarily be demanded from the leadership for its statements, acts and decisions. If the critical dimension of abstraction could be added to the analytical processes of the people, the people of Walead village would be able to relate their oppression with the oppression of the people of Shahdol, and the linkages between the industrial group owning the rayon factory in Walead, on the one hand, and the Governments in Trivandrum and New Delhi, on the other hand, would become clear to the people of the country. People's organisations built up through scientific processes, hopefully, will not limit their struggles to demands for merely better wages or land, but would instead struggle for ways of creating and sustaining a society relatively free of disparities, exploitation stagnating hierarchies, and other mechanisms of socio-political backwardness. This would then mark the creation of a People's Movement with a difference. (Concluded) □