

FRENCH-INDIAN EXCHANGE PROGRAMME: MATERIAL CULTURE AND VILLAGE SOCIETY

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The main ideas that emerged from my visit to India in december 1979 can be summarized as follows.

1. The wealth of India as a field of research on traditional techniques is immense. India is a highly significant area for understanding the history and distribution of many techniques on a worldwide scale.

2. Unfortunately, French scholars seem very little interested in the study of material culture (with a few exceptions, especially as far as peripheral or tribal areas are concerned).

3. One way out of this situation could be to organize direct contact and exchanges between ordinary people (farmers, craftsmen, etc.) living in village communities of comparable importance in India and France.

4. Another way would be to work on common research themes. One such theme could be harvest and post-harvest techniques, their distribution and change in present day India and in France in the last two centuries.

Point (3) is admittedly very difficult to set up as a workable project. A prerequisite is to find in both countries village communities of comparable size (5 to 10.000 pers.), where local authorities are willing to make an attempt. On the French side, contact has been made with fellow ethnologists having good local connexions in the provinces; two of them are:

Dr. Marc Prival, Le Coudert d'Egliseneuve, F-63160 Billom

M. André Pacher, Pamproux, 79800 La Mothe Saint Héray.

It is up to them (and to a few others, still to be contacted) to find influential people from village councils, genuinely interested in the project. It is proposed that they be invited to India sometime in 1982 or 1983, to look for further connexions there.

On looking more closely at it, point (4) could perhaps be nearly as difficult to follow up than point (3). Dr. M.L.K. Murty (Poona) has proved willing to cooperate; he is planning to come back to Europe (Germany) shortly, an occasion to further discuss this project with him. But if a joint project is to emerge, someone will be needed to take the main responsibility of implementing it. It is proposed that an Indian student should come to France for 2 - 3 years, to make fieldwork in the country and get his or her PhD there. This young person could be either an anthropologist, or a historian, or a linguist (dialectology), provided

that he or she is genuinely interested in the study of material culture. Subject matters of interest for Indian students in France are plentiful, and practical conditions of fieldwork are no special problem, once a sufficient knowledge of the language is acquired.

Both projects (3) and (4) share a common emphasis on:

- down-to-earth research subjects, increasingly neglected by anthropologists in the last 50 years;
- a feeling that the present imbalance in the exchanges between French and Indian scholars is scientifically harmful for both sides and must be corrected.

There is undoubtedly still a long way to go before as many Indian scholars work in France as there are French scholars working in India. The two proposals presented here are but a step in that direction.

Paris, 12 nov. 1981

REPORT FROM A VISIT TO INDIA

IN DECEMBER 1979

by F. Sigaut

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INTRODUCTION AND SUMMARY

Following an invitation by the Indian Council of Social Science Research (Dr. T.N. Madan, Member Secretary), I spent one month in India in December, 1979 (plus a few days at the end of January, 1980), in order to make contact with colleagues with which common research interests were expected to be found. I was given the opportunity to visit 19 institutions in 8 towns (Delhi, Ludhiana, Calcutta, Kharagpur, Bhubaneswar, Madras, Bombay and Poona), to have work discussions with about 25 colleagues (not including informal talks with a number of others), and to give short lectures in 5 seminars. I want here to express my most complete gratitude to the staff of the I.C.S.S.R., for the highly efficient way in which they made all this not only possible, but easy and pleasant for me. My thanks are also due to all the colleagues from which I received so useful, and sometimes so fascinating hints and information.

From my background - agricultural science, and ethnohistory of agriculture and related activities in Europe - , I had very little previous knowledge of Indian circumstances, except for some details acquired in the course of comparative technological studies. It means that I have no choice here but to give way to the impressions I formed during this short first contact with India, however naive or even irrelevant they may be. In fact, I came back with the following ideas:

(1) It is probably more useful to look for similarities or parallels between India and other parts of the world, and to follow them up, than just delving more and more into Indian (or for that matter European) cultural specificity.

(2) The wealth of India as a field for comparative studies in material culture is enormous. Systematic exploitation of this field could well lead to a breakthrough in anthropological research.

(3) Work and labour, and especially labour productivity, are probably the most neglected area in anthropological research, both in France and

in India. They are crucial, however, if the study of material culture is to achieve any significant results.

For practical purposes, I would like to make the following suggestions:

(4) As many Indian students as possible should come to France, or to other countries of Continental Europe (rather than the other way round), not so much for getting university degrees than for making actual field-work.

(5) Exchanges between India and France should not be restricted to scholars. They should also be organized between ordinary people, villagers or craftsmen. Such exchanges are admittedly very difficult to set up. But this is no reason to dismiss them out of hand. They may even eventually prove to be a first-rate implement for anthropological investigation in the future.

(6) At the moment, a comparative research on traditional harvesting practices is probably the most potentially productive field of cooperation between French and Indian students interested in material culture. It is perhaps the best possible approach to labour problems in an anthropological perspective.

TRIP SCHEDULE, INSTITUTIONS VISITED AND PERSONS INTERVIEWED

- Dec. 3th, early morning: arrival in New Delhi airport.
- " 4th, 10 h 30: meeting with Dr. T.N. Madan at the I.C.S.S.R.; discussion concerning the programme of the mission and administrative questions.
- 15 h 30: meeting with Dr. B.K. Thapar, Director, Archaeological Survey of India.
- " 5th, 15 h: meeting with Dr. N.R. Banerjee, Director, National Museum.
- " 6th, 10 h: meeting with Prof. Romila Thapar, Jawaharlal Nehru University.
- 15 h: seminar at the Indian Agricultural Research Institute, Pusa, Engineering Department: "Early development of some agricultural implements and machines in Europe."
- " 10th: travel by train to Ludhiana (Punjab).
- " 11th, 10 h 30: meeting with Prof. P.C. Deb, Sociology Department, Punjab Agricultural University.
- 11 h: seminar on "Evolution of ploughing techniques and rotations in Medieval western Europe."
- 12 h 30: short meeting with Dr. S.S. Johl, Special Director of Research, Economics Department.
- 12 h 45: meeting with Dr. P.K. Srivastava and several collaborators, Indian Grain Storage Institute.
- " 12th: return by train from Ludhiana to Delhi.
- " 13th, early morning: flight from Delhi to Calcutta.
- 11 h: meeting at the Centre for Studies in Social Sciences with Dr. Sushanta Ghosh and Shri N.N. Bandyopadhyay.
- 12 h 30: meeting and lunch with Dr. Barun De, Director, C.S.S.S.
- 15 h: meeting with Dr. S.K. Bagchi, Birla Museum of Industry and Technology.
- " 14th, 11 h 30: meeting with Prof. D.K. Das Gupta, University College of Science, Department of Agriculture.
- 15 h: short meeting with Dr. H.K. Rakshit, Director, Anthropological Survey of India.
- " 15th, 11 h: meeting and lunch with Dr. Arabinda Biswas, Deputy Director, Food Systems and Society Project.
- " 16th, early morning: flight to Bhubaneswar.
- 10 h: short meeting at the airport with Prof. L.K. Mahapatra.

- Dec. 17th, 11 h: seminar, Anthropology Department, Utkal University, presided over by Prof. Usha Deka, on "Evolution of harvesting techniques."
evening: flight from Bhubaneswar to Calcutta.
- " 18th, 8 h: departure for a field trip with Shri N.N. Bandyopadhyay and Dr. A. Biswas, by car, to Kharagpur; visit en route to the Comprehensive Area Development Project of Bainan (Distr. Howrah), and short stop by a wheelwright's workplace.
afternoon: meeting with Prof. C.R. Pathak, Indian Institute of Technology of Kharagpur, Department of Architecture and Regional Planning; short visits in several departments of the I.I.T.K., especially National Service Scheme, and Post-harvest Technology.
- Dec. 19th, 10 h 30: meeting with Prof. S.N. Sen, Birla Museum: discussion on the history of glass-making and sodium carbonate production in India.
14 h 30: short meeting with Dr. H.K. Rakshit, Director, Anthropological Survey of India.
evening: flight to Madras.
- " 20th, 10 h: meeting with Dr. V.K. Ramachandra, Madras Institute of Development Studies.
11 h: meeting with Prof. N.S. Reddy, University of Madras, Anthropology Department; seminar on "Evolution of agricultural techniques and agrarian systems in Medieval western Europe."
afternoon: visits to the Government Museum and to the Connemara Public Library.
- " 21th, 11 h: second seminar at the Anthropology Department, on: "The Evolution of harvesting techniques."
afternoon: visit to the University Library.
- " 24th, 10 h: meeting with Dr. C.T. Kurien, Director, Madras Institute of Development Studies.
14 h 30: meeting with Dr. H. Narayana, Director, Government Museum of Madras.
- " 26th, early morning: flight to Bombay.
11 h: meeting with Dr. J.D. Karnik, Jt. Director, I.C.S.S.R. Regional Centre, Bombay; lunch with Dr. Karnik and Prof. Fereiro.
- " 27th, 16 h: meeting with Prof. S.H. Despande, Economics Department, Santa Cruz University, Bombay.
- " 28th: travel by train to Poona.
18 h: meeting with Prof. V.N. Misra and Dr. M.L.K. Murty, Archaeology Department, Deccan College, Poona.
- " 29th, 11 h: visit to the Archaeology Department and to the Agricultural College, Poona.
afternoon: return by car to Bombay.
- " 30th, early morning: flight from Bombay to New Delhi.
- " 31th, 11 h: meeting with Dr. T.N. Madan, I.C.S.S.R., New Delhi.

Jan. 1st, 10 h: departure from New Delhi by air (for Kathmandu, Nepal).

Jan. 28th, 20 h: arrival to New Delhi airport (from Kathmandu).

Jan. 29th, 12 h 30: visit to the I.C.S.S.R.

afternoon: consultation of some "Village Survey Monographs"
lent by the I.C.S.S.R.

" 30th, 10 h 30: meeting with M. G. d'Humières, Attaché culturel,
Ambassade de France.

" 15 h 30: meeting with Prof. Romila Thapar and Prof. S.
Bhattacharya, Jawaharlal Nehru University, New Delhi.

" 31th, 0 h 45: departure by air to Paris.

POSSIBLE THEMES OF COMMON INTEREST FOR FRENCH AND INDIAN STUDENTS IN
THE FIELD OF MATERIAL CULTURE

1. Some possible similarities between India and other parts of the world.

Parallels are probably something that no foreigner can help looking for when entering a new country for the first time. However naive and ill-informed they may be, such parallels ought not to be rejected out of hand as meaningless: they always have some meaning, at whatever level it is. The question is not about their meaning or their truth, it is about their possible use for further research. Parallels used as starting points for comparative research will always prove naive and ill-informed in the light of that very research.

Some parallels are obvious. For instance, Peninsular India looks very much like a part of Africa anchored to the Asiatic continent. This often-made remark is not very useful by itself; but it becomes more interesting when it is remembered that neither Africa nor India had any significant Bronze Age beyond the Nile and Indus valleys. Both subcontinents went directly, and comparatively late, from a stone-using to an iron-using economy. And in both cases, an early abundance of iron can be inferred from the diversity, size and weight of iron tools from archaeological finds. The importance of hand tools in Indian agriculture has been somewhat obscured by the diffusion of the plough. But today, precise similarities can be observed in the manner of wielding short-handled hoes in India and Africa. The only way to find out the meaning of such similarities, if any, is to follow them up as far as possible. In this case, we are led to wonder if significant differences are to be found, in Indian agriculture, between areas where the plough was known long before iron (i.e. the Indus valley and Punjab), and areas where iron was known several centuries before the plough (probably most of the South and of the East, plus many hilly or tribal areas).

Another parallel, although not in the material field proper, can perhaps be drawn between India and non-Mediterranean Europe: both socie-

ties appear to be working following deep-rooted hierarchical rules. This directly contradicts one side of Louis Dumont's argument in Homo hierarchicus and Homo aequalis. But in fact, both India and Europe share a number of features for which it seems difficult to find a better explanation than hierarchy, in the very sense proposed by L. Dumont: some of those common features are the comparative high position of women (of some women at least), a measure of tolerance for criticism and dissenting opinions (at least in the press), an interest for fundamental science, and a representative government system, to mention but a few examples. The occurrence of all those features together is much too infrequent to be dismissed as meaningless, especially in a Third World country; neither can it be simply explained away as a case of British influence, since British influence failed to produce the same results elsewhere. Each feature has to be explained for its own sake, and in each case, hierarchy seems to be a factor. Looking at the social position of women in India, for instance, there is no escaping the very vivid impression that the measure of freedom or authority enjoyed by some of them is a direct consequence of their status being more socially important than their sex, for some purposes at least and whatever may be meant by 'status'. Whereas in egalitarian societies, where status differences are not accepted, or at least not valued, the only differences that cannot possibly be ignored: sex, but also age, are bound to be socially over-emphasized, sometimes to the extreme. Differences of age as a main structuring principle occur widely in Africa. But as is well known, it is in the Near East and Mediterranean culture areas that the difference between sexes is made the most of it. This could well be linked with the strong egalitarian trend which found its way into the three great monotheistic religions having originated there. So, if a line has to be drawn between egalitarian and hierarchical societies in Eurasia, it would not separate India and Europe. Rather, India and Europe would be together on one side of it, with most Muslim and Mediterranean countries on the other side. L. Dumont seems to have greatly underestimated the role of hierarchy in European societies. On the one hand, he was seemingly misled by the increasingly outspoken egalitarianism to be found in modern European literature, forgetting that this egalitarianism never was socially operative, except for a few revolutionary spells. And on the other hand, he does not appear to make a clear enough distinction between the fact, and the ideological justification of it. There is no denying that the ideological justifications of hierarchy in

Europe (if any) are quite different from India; in both areas, moreover, they surely underwent many changes in the course of an history of at least three millenia. But as far as facts like the social position of women are concerned, hierarchy itself is much more important than ideology. The same may probably be said of the other features that have been pointed out earlier. Free scientific thought or representative democracy are both clearly impossible without some tolerance for dissenting and disturbing ideas, which in turn is clearly incompatible with the rule of unanimity, so characteristic of collective decision-making in egalitarian societies. To see hierarchy as a social prerequisite for democracy may be paradoxical indeed. But it may well be the very lesson India is teaching us.

Of course, all this is only one half of the story. For if hierarchy has such far-reaching social consequences, the real problem is to find out how it came into being at all, and why it developed more, or along different lines, in some areas than in others. The answer obviously lies in the study of material culture. The relationship between hierarchies and surplus accumulation has long been postulated as self-evident. But generalizations like that are of very little real use. We need to know much more about the things actually produced, how and by whom, at the various stages of the history of each culture area. For more than one century, for example, historians have been unable to propose any relevant hypotheses about the development of slavery in Classical Antiquity. It took a study of grain-grinding techniques to understand that slavery was perhaps used as a means to have men (slaves) doing women's work, which made possible, and was made profitable by, the use of new, more efficient techniques. But this, again, is a case of status being used as a means to by-pass sex in the social division of labour, in order to reach a higher level of economic efficiency. Of course, this hypothesis has still to be validated, and I do not know if, or how far, it could be usefully extended to India. But the point here is that some kind of balance has to be restored in social science. Research into material culture has been so neglected for so long that our ignorance in that field has become a limiting factor in our understanding of society as a whole. I am ready to bet that no significant advances will be made in anthropology in the foreseeable future, as long as our neglect for technology is not discontinued.

2. The case for a systematic study of material culture.

Too many students in social sciences are still unable to see the point of studying material culture. French and Indian students are no exception. As a matter of fact, Scandinavian and German-speaking Central European ethnography is the only anthropological tradition where the study of material culture was given something approximating its proper weight. But this tradition suffered heavy losses as a result of political events since the 1930s. This left Anglo-american anthropology in a position of virtual monopoly, resulting in a progressive neglect of material culture as a topic to be taken seriously. French anthropology, in this respect at least, only went along the same way. All this makes of little help to argue about the potential use and value of technology. ("Technology" is meant here in the Continental sens of the term, i.e. the branch of anthropology dealing with material culture.) Results are what we need. And for achieving results, there is no other way than training people and enabling them to go to work. The point here is that India looks as an especially proper place for doing both. The reasons for it are fourfold:

(a) The diversity of techniques actually practised in India today is probably unmatched elsewhere in the world.

(b) Traditional (= preindustrial) techniques are to be found currently practised everywhere, often in the outskirts of the biggest towns, and not only in a few secluded, far away places: this makes access to them comparatively easy and cheap, as well as the gathering of quantitative data about them.

(c) A vast amount of written information on traditional techniques has already been gathered. It makes a first corpus of data on which it is possible to build up systematically.

(d) There is a strong, if somewhat out-of-the-way, technological tradition in India, epitomized by the names of D.D. Kosambi and N.K. Bose. Not to mention many archaeologists and historians of science.

A short elaboration of these four points may be in order here.

To begin with the fourth point, the works left by D.D. Kosambi and N.K. Bose are clearly the basis on which any further technological research in India will have to be built. These works are so outstanding and so fascinating that there would be no point to add any further comment here. Only two things are to be regretted about them. First,

that they have not been followed up as far as would have been necessary. And second, that neither Kosambi nor Bose seem to have looked beyond the borders of the Indian culture area. Granted, India is large enough to keep anybody busy for the whole of his or her lifetime. But so are Europe, or Africa, or China, or any other large culture area. Kosambi's and Bose's ideas are essential on a general level, not for India only. Kosambi delivered a series of bright hints, whereas Bose favored a more systematic exploration and gathering of data: it is self-evident that both approaches are complementary. For instance, Kosambi noticed that lower caste women and higher caste women have different ways to use the kitchen grindstone. This remark looks extremely interesting, but the only way to find out its meaning would be a complete study of the way kitchen grindstones are used through the whole of India, along the lines of Bose's method.

The wealth of information already gathered on Indian material culture (our 3rd point) hardly needs to be stressed. As is the case with Europe, there are both excellent 19th century and present-day sources. The former are well known (Grierson, Buchanan-Hamilton, Watt, Moreland, the Gazetteers, etc.). The latter are less well known, the less so since many more anthropological monographs seem to have been made among the tribes than among Indian villagers proper. But there is a number of non-anthropological sources to make up for this deficiency: the "Settlement Reports" and "Village Survey Monographs" of the 1951 and 1961 Censuses, the "Techno-economic Surveys" from the National Council of Applied Economic Research have been especially mentioned to me in that connexion. Some other very useful works have been published by the Indian Council of Agricultural Research: Agriculture in Ancient India (New Delhi 1964) and Investigations into Methods and Practices of Farming in Various States, compiled by T.J. Murchandani (New Delhi 1971) are only two of them. A systematic gathering, comparison and exploitation of all those sources would without a doubt be extremely fruitful.

Finally, points (a) and (b) are what makes the Indian scene so fascinating for the technologist. Techniques that are elsewhere to be found in documents only, or remembered by a few old people, or practised only in open-air museums or for the tourists, are in India the very means by which thousands of people make their living. In addition, India is a developing country where the most recent techniques thrive side by side

with the most ancient ones, with of course in between a whole range of popular innovations where the old and the new are combined in often skilfull, and sometimes unexpected ways. Of course, a similar picture more or less obtains in most developing countries. But the Indian case is a climax, so to speak. Nowhere else probably were traditional crafts and jobs so numerous and so diversified to begin with, and nowhere else do they seem to have resisted the competition of modern industry so well. Boats are still made today by the age-old technique of stitching planks together, not only in some forgotten islands, but right on the Madras beach, five minutes' walk from the University. Bullock carts made following the traditional pattern are to be seen, not only in some odd corner of the country, but right in New Delhi, a few minutes's drive by taxi from the centre of the town.

For the technologist, a situation like that is an extraordinary boon. It is so, more specifically, because it provides a golden opportunity for the very tasks to be fulfilled if technology is someday to achieve the status of a true science. The major obstacle to advances in technology today is probably the lack of a sufficiently reliable and easily transmissible body of knowledge. This results in most students of anthropology shying away from technology or ignoring it altogether for want of the proper basic skills, whereas the few ones brave enough to tackle it too often start from scratch, with the risk of endlessly repeating the same errors. No science can make any progress without some corpus of data and references regularly brought up to date. Of course, the gathering of such a corpus involves a lot of problems. But most of them will only be solved in the course of the gathering process itself. What is needed to initiate it is a non-arbitrary method for identifying individual techniques without ambiguity, in order to be able to organize the data concerning them in an economic and usable way. Such a method is being developed right now. It is not possible to discuss it in any detail here: suffice it to say that it is based, as can be expected, on comparative analyses. Now, India is probably one of the best places today for comparative technological analyses on a significant scale. At least, there are a lot of examples suggesting just that. It may be useful to discuss some of them here: the "techniques du corps", load-carrying, tillage hand-tools, and agricultural uses of iron. The harvesting techniques, more important still perhaps, will be dealt with separately later.

It is now 40 years since Marcel Mauss first mentioned "les techniques du corps" (body techniques) in his teachings. Although its importance has been repeatedly stressed ever since, this domain never was paid much attention by anthropologists, probably by want of proper methods and materials. As a result, what little research has been done was done chiefly by non-anthropologists; today, zoologists (ethologists) display an increasing interest for the study of human gestures and postures. But gestures and postures adopted in the course of productive work remain poorly studied. Everybody knows that the same kind of work may be carried on standing erect, or standing and bending, or squatting, kneeling, sitting (with differing positions for the legs), etc. Marcel Mauss pointed out at some of these differences, which are among the standard comparisons made by European tourists travelling in tropical countries anyway. But no satisfying hypothesis seems to have ever been made to account for those differences (they can be observed not only between distant culture areas, but sometimes according to the sex, or the social status, of the workers). Clearly, two conditions are to be met if we are to make any progress in that direction. The first one is a full cooperation between social anthropologists, physical anthropologists and ergonomists, since their respective skills are equally indispensable. And the second is a field of investigation as small in extent and as homogeneous in culture as possible, with at the same time a maximum of diversity in the body habits of the people living there. At first view, India may well be the best place, if not the only place, where to meet both conditions.

Load-carrying is one of the most important kinds of work where the body itself is the main tool used. In spite of the diversity of transport techniques in India, load-carrying (portage) remains economically important everywhere; in some areas, it is still the main, or even the only way to carry things (Himalayan hills, and probably many other hilly and tribal areas). Transport is obviously essential in the economic life of any society. So, precise and comprehensive data on the efficiency of the different possible transport methods are indispensable if we are ever to understand something to the way economic systems function and change. Again, India may be the best or the only place to gather quickly and cheaply the basic data. Every conceivable mode of load-carrying existing somewhere in the world is probably to be found somewhere in the Indian culture area also (on the head, on the back with head-strap, with breast-

strap or with shoulder-straps, on the shoulder with yoke, etc.), and so are the brains and skills to study them. Indeed, interesting studies of load-carrying have already been done by ergonomists in India (for example: Sen and Nag 1975), although strictly from a physiological point of view. What is needed is a sense of cultural relationships that only anthropologists can provide.

Next to load-carrying, tillage with hand-tools is probably the most demanding kind of labour. But its study, although very promising, seems to have been rather neglected, except among tribes. The special interest of India for a study of tillage hand-tools is the fact that the whole range of possible postures are represented in working with them. The ubiquitous khurpa (a small weeding tool, not to be found outside India as far as is known to me, somewhat resembling an European trowel) is designed to be used in a squatting position (like, significantly enough, the Punjabi sickle). The common large-bladed hoe (misnamed spade in Indian English, used to work rather loose earth, like the European shovel) is adapted to a standing, more or less bending position. The heavy short-handled hoe (kodali in several localities) is wielded standing but strongly bending. The crowbar is used standing and erect, etc. Obviously, these different postures have much to do with efficiency factors such as precision, balance, strength, comfort, fatigue, etc. But efficiency is relative to the work to be done, i.e. to the economy as a whole, as well as to the inherited preferences and habits of people. Disentangling this complex mixture of physical, social and historical factors is exactly what technology is about. It requires the help of ergonomists, without whom no study of labour efficiency can go very far, and the help of linguists, in order to understand the language used by the people when speaking about their labour: it has perforce to be an interdisciplinary undertaking. But it may well give us a clue to understand why differing postures are preferred by different people, and much more.

Since iron is essential for the making of most tillage hand-tools, metallurgy is obviously a determining factor in their efficiency. Both the quality and the quantity of metal are relevant. Paul Bairoch (1974) hypothesized that the increasing demand for iron in British agriculture in the 18th century was the main factor in the launching of the industrial revolution. True or not, what remains for sure is the surprising importance of iron consumption in agriculture: at a rate of 2 to 10 kg/ha each year in 19th century France, it is easy to figure out that it exceeded by far iron consumption in any other economic branch at the

time. Granted, it is not necessarily so everywhere. But the point here is that the history of metallurgy cannot remain an history of weaponry, as it has been by and large until now. In order to assess the causal effects in this relationship between metallurgy and agriculture, we obviously need to know much more about such factors as, for instance: the quantity of iron consumed per unit of agricultural land per year in different agricultural systems; the quantity of charcoal needed to produce this iron; the quantity of woodland needed to produce this charcoal under different climatic conditions, and its ratio to agricultural land and to the population; price ratios between staple grains, labour, iron, fuel, land, etc... Again, India provides us with a unique opportunity for gathering such data from living economic systems.

But of course, qualitative relationships should not be overlooked: the case of the crowbar in India may be a relevant example. I happened somehow to get the impression that crowbars are more commonly used in the South than in the North. If this difference can indeed be confirmed, and if it cannot be ascribed to recent developments (in British times), then there is a possibility that the more common use of crowbars in southern India may be a remainder of what happened there in Iron Age times. Iron seems to have been comparatively abundant and cheap then, a situation clearly conducive to the development of new hand-tools and techniques, especially since the plough was still unknown. A number of iron tools of impressive size and weight have been recovered from excavations of this period - including one crowbar, according to an information given to me by Dr. N.R. Banerjee. The point here is that the study of today's hand-tools may be of archaeological relevance, and conversely. I could discuss it especially with Dr. N.R. Banerjee (Delhi) and Dr. T.N. Harinarayana (Madras).

Scores of other examples could be added. But our only point here is that the contribution of India to a global understanding of world cultures could be decisive. Social sciences have reached a point where backwardness in our understanding of material culture has become a limiting factor in our understanding of society as a whole. This very backwardness makes any actual advance in technology of far-reaching consequences, often unexpectedly so. Because of its wealth both of relevant data and of skilled people for studying them, India is one of the few places where dramatic advances can be made in a comparatively short time. The effort required is large, but the reward would certainly be larger still.

3. "Saving labour for what?" The case for labour productivity.

The paradox about labour productivity is that it is at the same time one of the most important and one of the most neglected topic in economics. Labour productivity - especially in the production of the most needed goods, first of all staple foods - has been shown by Fourastié, Grandamy and Sauvy (in France only) to be a determining factor in the functioning of society. Both the average standard of living and the social distribution of income depend on labour productivity, and no economic growth of any kind can take place without increases in labour productivity. In fact, labour productivity appears so basic for any understanding of economic change, past and present, that one is left to wonder how it may be that most economists have shown so little interest in it. But only two possible explanations come readily to the mind. Firstly, labour productivity studies have to take into account the long term, where the gathering and comparison of data is a problem - a problem for historians to be sure. And secondly, labour productivity directly results from what kind of skills, of tools and of resources are used in production processes, which is a problem again - a problem for technologists this time. But unfortunately, most economists are quite uneasy about both long term and technology (to the point of acknowledging it themselves). However it may be, it is a fact that labour productivity studies are remarkably few and far between, even in the huge literature on development where one would expect them to be especially plentiful. In India, this lack of interest for labour productivity amounts to a virtual blind spot. I did not happen to find or hear of any study on it during my whole stay there. It may of course be objected that this is only due to chance. But what cannot in any way be due to chance was the answer I got in Kharagpur, when asking about labour productivity increases in modern mills as against traditional ones: "Saving labour for what?" This answer, in form of a question, epitomizes the whole problem.

Granted, the very idea of saving labour in a country like India can understandably appear ludicrous. My contention is that it is not. Labour is never so plentiful and so cheap as to make it useless to bother about saving it as much as possible, which is the same thing as to increase its productivity. Indeed, poverty directly results from a low level of labour productivity, and there is no way out of it other than to save labour systematically, everywhere and everytime possible - this being the very process that is meant by the word "development". And unemployment is no

sensible objection. Far from diminishing employment, increasing labour productivity is a prerequisite for increasing employment. Migrant workers flock by the millions from countries where jobs are scarce because labour productivity is low, toward countries where jobs are comparatively numerous, because labour productivity is high. And resources make no difference (Japan, Western Europe have remarkably few natural resources). It is labour productivity that makes the difference, at least most of it. Work is never lacking anywhere. Indeed, the quantity of work necessary to raise the standard of living of the people in India to some reasonable level would be quite staggering! How is it possible, then, that jobs are lacking in the very face of this huge reserve of work to be done? Because labour productivity is too low to make it worthwhile to employ people on it - labour, however cheap, is always too expensive when not efficient enough. Sharing labour, i.e. keeping labour productivity low, in order to maintain employment, is sheer nonsense. The French economist Alfred Sauvy has it this way: just replace every truck in the country by wheelbarrows, what will happen to employment (and to the whole economy, for that matter)? So, "saving labour for what?" - for making it possible to employ more people on useful jobs, of course.

This writing could go on and on for pages; a whole book, or books, could be dedicated to this question. To come back to our main point, it has to be stressed that labour cannot be plentiful nor cheap in India, anymore than elsewhere. And especially, it is not in Indian agriculture. With studies of labour productivity not easy to be found in India, I have of course little evidence to substantiate this point: but some can be found all the same. Mentions of labour scarcities occur not unfrequently in the literature, if only allusively or in footnotes. And indeed, it was found in a recent survey of the "Green revolution" in a number of villages in tropical Asia, that labour requirements had increased everywhere, even where tractors and other machinery had been extensively put to use (IRRI 1975). The development of gang labour in South India also shows that any significant increase in production puts new demand on labour, that goes beyond the traditional supply - this development seems to parallel similar trends in 19th century Europe pretty closely, as far as I could learn from discussions with Dr. Ramachandra in Madras. As a matter of fact, it is doubtful if, in most peasant economies, people can work significantly more than they actually do. If not, which seems at least very probable, saving labour is the only way for them to increase their gross output. On

the other hand, there seems to be an ample margin for putting in much more labour in agriculture in India, provided that the productivity of this additional labour be significantly raised above its present level — which is clearly a matter for grass-roots, labour-saving technical innovations. In a comparative study of two districts of Japan and West Bengal respectively, it has been found that labour inputs per acre were nearly 4 times higher in the Japanese than in the Bengalese district, but gross output 10 times higher! (Ethrington 1962, quoted in Mellor 1965). This is a perfect case of how a high level of labour productivity can induce a high level of employment. I must add here that on the relationships between labour productivity and development, Mellor's paper (first published in the Indian Journal of Agricultural Economics in 1962) is one of the more helpful and stimulating I happened to find in the general literature.

So, from whichever point of view it is looked at, labour productivity proves to be a key concept. For technologists, it is one of the main criteria for analysing and comparing techniques and technical systems. For historians, changes in labour productivity are one of the main forces in history-making. For sociologists, the average level, scattering and rate of change of labour productivity are determining factors in the shaping of social relationships. And of course, development itself is nothing else than a cumulative process of technical innovation, resulting among other things in a steady increase in the productivity of labour. This should make labour productivity of primary concern to economists and experts of any kind interested in development (by the way: it could well be argued that if so many innovations suggested by experts have failed to gain a wide acceptance, it is because they were too expensive for the people, either in money, which is rather easy to see, or in labour, which is much more difficult to see, although none the less important). Our last point here is that measuring labour productivity is no simple matter. It requires a complete and precise understanding of material culture, of the kind not to be possibly acquired without the help of the method and skills of the anthropologist. To have called "informal" the non-industrial sector of Third World Countries only betrays how uneasy and bewildered most economists feel about it. Now, it is precisely in this "informal", i.e. "traditional" sector, that anthropologists are mainly interested. It has become clearer and clearer in the last ten years or so, that development has to take place inside the informal sector (including agriculture),

if it is to take place at all. India is perhaps the first country where this discovery has been made. But unfortunately, further progress was hampered because anthropologists were not called in for help in sufficient numbers. This may be largely the anthropologists' fault, however. Many of them were not, and probably still are not ready to answer such a call: they too often prefer to indulge in the delicious and futile subtleties that loom so large in the anthropological literature. Anthropologists will have to accept drastic changes in order to be able to answer serious questions. But even from a purely scientific point of view, these changes will be all the better for them. The lack of skills and will among anthropologists to tackle material culture in earnest is clearly bringing the whole discipline to a standstill. But it is of no use just to deplore the situation. Opportunities for change have to be created and used. From the anthropologists' side, the effort required is considerable, since the present generation must be considered as practically unavailable for the purpose. Only with fresh generations of anthropologists will it be possible to achieve any real change. This clearly requires long range decision and planning.

4. The case for Indian students coming to do fieldwork in Europe.

The point has already been made, speaking about shifting cultivation, that anthropologists from tropical countries should come to temperate countries in greater numbers. This, not so much to get university degrees, as so many of them already do, than to make actual fieldwork. Anthropology is a study in differences. It is all right for Europeans to go and look for differences into tropical countries, provided that an equal number of people from tropical countries go to Europe (or, of course, North America or Japan...) to look for differences from the other side. This is not a matter of political equilibrium, which is totally out of my concern here. It is a matter of scientific method. In human matters, where the object cannot be manipulated as in the natural sciences, the only way to replace experimentation is to look at things from as many differing points of view as possible. Because their background is different, anthropologists (and even ordinary people) from exotic countries cannot fail to see in Europe things that the Europeans themselves cannot see. Things that the Europeans take for granted because they are too obvious, or because they are unable to imagine any alternative for them. As a rule, the obvious is basic in anthropology, but it takes foreign eyes to see it.

As far as France and India are concerned, there are two more reasons for insisting on Indian students coming to France, rather than the reverse. The first reason was already alluded to earlier: it is the tendency of even the brightest Indian scholars to deal exclusively with Indian matters. It is a pity for example that D.D. Kosambi and N.K. Bose had not the desire or the opportunity to do more work outside India. Having Indian students working in France, or in Europe for that matter, is a means to overcome this weakness. Our second reason is a practical one. French anthropologists working in India by now practically show no interest at all in material culture. It was with this situation in mind that I stated earlier that the present generation of anthropologists was unavailable for any large-scale effort on material culture. This situation can clearly be gathered from a recent recension by Jean-Claude Galey on French social sciences research in South Asia (1979). With the customary exception of marginal and tribal areas (Nepal, Maldives, the Saora...), not a single French anthropologist appears to be working on material culture in India proper. Granted, some names could perhaps be added to Galey's list, especially linguists and archaeologists. But even so, only four French indianists are currently interested in Indian material culture as far as I know; they include one historian and one linguist (J. Deloche, M.-C. Mahias, G. Martel and C. Petit).

There is no want in France and in Europe of subjects of possible interest for Indian students. As pointed out earlier, many parallels between India and Europe are waiting to be followed up. I had the opportunity to discuss two of them extensively during my stay in India: the problem of impoverished areas, with Dr. A. Biswas in Calcutta and Prof. S.H. Despande in Bombay, and the development of gang labour with Dr. V.K. Ramachandra in Madras.

Gang labour developed into an extensive pattern of work migrations in 19th century Europe. At least one important book has been devoted to it in France: Les migrants temporaires en France de 1800 à 1914, par Abel Chatelain, 2 vol. (the author has unfortunately deceased). Clearly, the development of gang labour in agriculture, especially for tasks such as harvest, grape-harvest, sugar-beet weeding and the like, was characteristic of some precise stage in the evolution of the economy. A stage where increased production and increasing specialization with a still incomplete mechanization left large gaps in production processes, to be filled only by labour temporarily set free from neighbouring industrial or backward

areas. But the problem is to arrive at a more precise evaluation of what actually those conditions were, in terms of price/wage ratios, labour productivity, differences in the living standards and organization between areas sending and areas receiving migrant workers, etc. Clearly, a comparison between Indian and French circumstances would be of invaluable help. The fact that gang labour is developing in India now, whereas it practically became extinct in France in the 1950s is no real difficulty. It only means that different methods and sources are to be used in both cases.

Gang labour is linked, of course, with other problems such as backward areas (I shall come back to it presently), industrial organization of labour, and workers' gardens. It is well known that comparatively low real prices of food are a prerequisite for competitive industrialization, with the example of the repeal of corn-laws in Britain in 1846 in every text-book. But just importing cheap grain is not always possible, nor is it the only means to keep real food prices reasonably low. Workers' migrations and workers' gardens are other responses to the same necessity. It must be stressed that a significant part of the migrant workers in the 19th century came, not from backward, but from industrialized areas, with whole plants sometimes closing down for the time of the harvest or other seasonal agricultural work. It was clearly a way to maximize work productivity, by allowing workers to make the best out of permanent and seasonal available tasks. The same result was aimed at by allotting workers plots of land to cultivate for themselves during their spare time. Workers' gardens are a comparatively neglected subject in economic history, yet their role in early industrialization appears considerable. Of course, workers' gardens can be an asset only if labour productivity in them is high enough, which in Europe could not have been possible before the arrival of the potato. I could not discuss this point during my stay in India. But perhaps, the trend toward growing more and more cassava in many tropical countries, especially in the outskirts of the towns, could be a response to the same kind of pressures that lead to more potato growing in Europe. Besides the crops themselves, potato or cassava or whatever, there is also a condition of techniques and tools being available or not for growing them. Once again, and however tiring it may seem, it must be repeated that proper tools, especially hand-tools of sufficient efficiency have to be available to make gardens both economically feasible and attractive for the people. Either to understand or to develop them, in-depth studies of spades, hoes, forks, wheelbarrows and the like are

not to be dispensed with.

Impoverished or backward areas in India are more often than not tribal areas, so that it can be argued that the problem is specific to India, and without real parallels in Europe. It emerged from the discussions I had about it that such is probably not the case. Basically, backward areas are places where traditional resources and skills are made obsolete by modernization, without any development of new resources and skills to compensate for their loss. The fact that tribals are involved or not does not change the picture very much. Backwardness is an economic phenomenon, due to the fact that the market of labour in backward areas is markedly narrower than in more advanced ones. As Adam Smith well knew more than two centuries ago, the size of the market determines how far the division of labour can reach: narrower markets mean lesser labour specialization and efficiency. More work, or more skills, or both, are needed in backward areas to live on an equal footing there, so that people have only two solutions: to accept their relative poverty, or to look elsewhere for better jobs (labour migrations). A third solution may sometimes be resorted to: the outskilling of the outside world. But in that case, the backward area soon ceases to be backward at all: this is the story of Switzerland, once one of the poorest countries of Europe.

All that is nothing new. The economic mechanism of differential impoverishment has indeed been at work for ages; it is but the dark side of development. What may be new in some measure today, is that administrative interference tends to make matters worse rather than better, above all in the more centralized regimes. In many areas for instance, people have for a long time managed to make a living by combining a range of widely differing knowledges and skills: in industry, in agriculture, in lumbering, and even with odd jobs such as gathering mushrooms or herbs, etc. But to remain a resource any longer, such traditional combinations of skills have first to be transmitted to the young, which is impossible if they are openly scorned in the schools and other similar institutions. Unfortunately, this is what has been increasingly happening in France, so that more or longer schooling means depriving the young of the skills of their parents, to teach them new things that will be of no use to them, unless they go elsewhere. The same is too often true of agricultural extension, insofar as it tends to suppress traditional skills, without being able to replace them by new skills to be of use on the spot. Swidden cultivation is very much a case in point. The way it was scorned by some "experts" at the Symposium in Bhubaneswar in december 1978 is an horror story. "Experts"

addicted to "wean away" the tribals from their "pernicious practices", to make them "settle down" (as slum-dwellers, as far as I was able to gather) should be told how dangerous they are. Such experts are to be found in every country today, unwitting witnesses of the failure of anthropology to make any significant impact outside its own field.

If as a rule, anthropologists are so interested in backward areas, it is precisely because the people inhabiting them are more or less forced to live on original combinations of resources and skills, not to be found elsewhere. It is this very difference that makes their problem both so exciting from a scientific point of view, and so difficult to solve from an economic point of view. The only way either to understand or to improve the situation of backward areas is first to have their originality respected. With mounting pressure toward uniformization at every level, this becomes increasingly difficult. This is the basic problem, it is very much the same everywhere.

Backward areas and gang labour are only two subjects of possible interest for Indian students coming to make fieldwork in France. There is of course plenty of others. I cannot possibly list them here, because this would amount to make the list of contents of a textbook on material culture. Swidden cultivation has been mentioned elsewhere (Sigaut 1979). Grain-harvest will be later on. The last specific point I would like to make now is about grain storage and marketing. From what I could gather (especially from Moore, Johl and Khusro, 1973), it seems that the situation in India today may not be without parallels with the situation in France before the foundation of O.N.I.C. (Office National Interprofessionnel des Céréales). In both cases, grain is channelled through a number of small grain-dealers and traders, many of them not really specialized in the grain trade and with little capital to invest in machinery or storage, except for the owners of large mills. This is not the place to discuss the advantages and drawbacks of this system; suffice it to say that it cannot remain compatible with modernization for very long, it will rather resist it. What is interesting in the history of O.N.I.C., is that this old system could be replaced nearly at once by a more efficient one, by concerted action between all the concerned professions (farmers, traders, millers, etc., hence the "Interprofessionnel") under government leadership. This happened in 1936. As could be expected, the new system was met with an upsurge of very strong, vehement opposition.

But it worked so well that in a matter of a few years, it was completely accepted, even by its most vocal opponents. It remains in force now, with some modifications, especially to adapt it to Common Market rules. The creation of O.N.I.C. was no miracle. But it was from the start a success story. This very success probably explains why the story is comparatively little known today - as a rule, people are little interested in things working on smoothly, without trouble or noise. But much could certainly be learnt from the O.N.I.C. experience. It is one of the few examples of successful government interference in a little developed agriculture.

5. The case for exchanges between Indian and French villagers.

Organizing exchanges between scholars of different countries is of course all right. But as far as anthropology is concerned, there are specific limitations to the results that can be expected from it. Anthropology, being a study in differences, requires both knowledge and naïveté. Knowledge is clearly indispensable to find out significant differences in matters such as marriage rules or techniques of vegetable cooking. Differences like these are generally looked for, that is, they can be foreseen in some measure from what is already known elsewhere, making fieldwork a validation of preceding hypotheses. But as yet, hypotheses are far from being available for the whole field of anthropology. And it is precisely when no hypotheses are there to give meaning and respectability to facts that a degree of naïveté becomes necessary to be interested in them all the same, if not to be able to see them at all. What makes old travel accounts so enjoyable is the ability of their authors to be astonished by things now either forgotten or taken for granted, that is devoid of any meaning anyway. However necessary, increased knowledge cannot but go with increasing sophistication, resulting in a kind of self-censorship: the more we have been trained to see certain things, the more we are prone to neglect or despise or overlook things irrelevant to our training. Both knowledge and naïveté are necessary in anthropology, but it is a question if they can be combined the right way in the same individual.

One way to overcome the difficulty could be perhaps to call in people having the kind of knowledge and unsophistication that is precisely lacking among anthropologists. That is, ordinary people, especially peasants, craftsmen, workers. The background of such people would enable them to see at a glance significant differences in the way their own jobs

are performed, whereas months of training would be necessary for the unskilled anthropologist to be able to perceive them. On the other hand, ordinary people may be expected to be unsophisticated enough to develop an interest in the common ways and practices of the daily life that are new to them, whereas most anthropologists have become too much used to the same ways and practices to be able to keep interested in them. What is suggested here is in fact a kind of cultural experiment. This experiment would consist of putting into contact people from different culture areas, in order to have them study each other, as it were - and teaching each other, too.

It could be objected to this suggestion that contacts between people of differing cultures already exist, and plenty of them with that: migrant workers, in Europe and North America, tourists, and even refugees are now to be numbered by the millions, and they provide as many cases of potentially experimental intercultural contacts. There is no denying that a wealth of information could be, and to some extent already is being derived from such contacts. But they are in fact unchecked experiments, so to speak, and the results to be expected from them are widely unequal. About nothing can be expected from the study of Europeans tourists travelling abroad, for instance: they are too well sheltered from any real contacts in the countries they are visiting. Studying cultural differences between migrant workers or refugees and the surrounding population may be much more rewarding. But it belongs in fact to other programmes, that cannot be considered here in any detail.

The kind of contacts considered here would on the contrary have to be carefully organized beforehand. This organization should be based on the following pivotal points:

- exchanges at the local level, between equivalent cities, or rather villages, according to the existing system of sister-cities;
- the use of modern audiovisual techniques (video), as the only means for people of differing cultures and languages and with no academic training to directly exchange information between them;
- exchanges between people having already shown an interest in the assessment and preservation of their cultural heritage, as well as in initiatives for their development.

The system of sister-cities is already several decades old in Europe and North America (in French: jumelage, villes jumelles). As a rule, it links two cities of neighbouring countries, France and Germany for instance. This link results in an official agreement to regularly exchange

people from the two cities, especially teenagers and the aged, who have more time available and are more open-minded. The aim of such exchanges may be to have schoolchildren to go and learn the other country's language, as well as just plain tourism. But nothing prevents the use of a similar model for organizing regular exchanges between villages in France and in India, with higher aims. There would be plenty of problems, of course. But none of them appears to be insuperable. Anthropologists would have to be there at the beginning, to provide advice and help and some training in the language. The first persons concerned by the exchange ought to be teachers, or persons in a similar position in the community, in order to enable them to prepare and help the others, especially the young. It is at this point that audiovisual techniques become essential, because they are necessary to help the young to make field studies and to report the results both to the people studied themselves, and to their parents back at home. In time, this should result in the whole population of the two villages coming to know each other quite well, and chiefly each other's way of life, ideas, needs and problems. At this stage, any further intervention from the anthropologists would be unnecessary, if not harmful: their rôle should be only to observe and to record as soon as the people of the two communities are on their own.

One more condition for the success of a scheme like this one is, that the cultural distance between the people from each side be not exceedingly large. What is probably possible between French and Indian peasants would certainly not be so between, say, French and Melanesians. But even so, the exchanging communities should be chosen as near as possible of each other. This clearly argues for the jumelage of rural communities, not towns. Up to the 1950s, the way of life in many rural areas of France had probably as many similarities as differences with the same in India. Things have changed fast since then. But in more and more numerous rural communities in France, people are trying to keep records of the past, in order to retain an awareness of the immense changes that swept into their lives in the last two or three generations. A sure witness of this is the cropping up of small country museums about everywhere - and the agricultural museum on the campus of the Ludhiana University answers exactly the same preoccupation. My point here is that people having made an effort to record and understand their own experience by themselves will be all the more ready to share this experience with others, and so to come more quickly to a mutual understanding.

6. The case for a comparative study of harvest techniques.

To judge from what I happened to hear and read in India, the harvest may be one of the more neglected subjects in the realm of material culture. No doubt, numerous data are scattered here and there. But I was not able to find any overall study of harvesting tools, methods, practices, costs, etc., in the literature, anthropological and otherwise. As against matters such as ploughing, grain-milling, etc., harvest is conspicuously absent from N.K. Bose's Peasant Life in India, as well as Kosambi's works. When it comes to the harvest in the otherwise highly informative report by T.J. Murchandani (1971), totally uninformative phrases are likely to turn out, such as this one: "Harvesting is done with the help of local sickles and the crop is cut and collected in threshing yards." Nor was I told in Kharagpur of any attempt to improve harvesting techniques, which again is rather surprising by contrast with the immense and painstaking effort made there to improve traditional techniques (cooking, building, sanitation...) in the minutest detail. I was even told there that from past experience, it was thought that any attempt to change traditional harvesting procedures would be met with failure. This conspicuous lack of interest in harvest markedly contrasts with the wealth of studies, both on the so-called "pre-harvest" techniques, i.e. tillage, fertilization, sowing, etc., and on the "post-harvest" techniques, storage, milling, etc. One is left to wonder if the harvest has not been forgotten just because it was right in between. It should be added that this situation is not peculiar to India. Looking for data on harvesting techniques is equally unrewarding in Britain or in France.

My suggestion here is that this very forgetting of harvest is highly significant. Most reasons for it are the same than for the neglect of material culture generally, only more so. Understanding harvest is a tricky, painstaking and seemingly unrewarding business. It demands a pluridisciplinary approach, a keen attention to the minutest details of practice, as well as a wide scope for comparisons and an awareness of the multifarious relationships inside the production system. But one specific reason must probably be mentioned here: the fact that hand-tools and human labour are the only inputs in harvesting operations proper. Peasant labour being supposed to be plentiful and cheap, there is clearly no incentive to bother about harvesting techniques, where labour produc-

tivity is the only visible thing at stake. As far as efficiency is concerned, harvest is labour, and very little else. Indeed, it is the very neglect of harvest, to be inferred from the difficulty to find out data about it, that gave me the hint that labour productivity was not given its proper position in the picture in the first place.

All this is my first argument in suggesting harvest as a main theme for common research in both France and India: let us explore the blind spot, as it were. My second argument is that a technological research on harvest would bear on about all the problems mentioned so far in this report, especially the "techniques du corps" (gestures and postures), relationships between agriculture and metallurgy, labour migrations, and no doubt many more still.

Of course, harvest is to be understood here in the broadest sense, including not only the harvest of food-grains proper, but also the harvest of grass, straw, leaves or boughs, be it for fodder, thatch, fuel, manure, matting, basket-making, etc. All those techniques have in common the use of iron or steel cutting tools, like sickles, billhooks, bushknives, etc. There is ample evidence to suggest that in India like elsewhere, only more so probably, all those tools belong to the same family, with every kind of transitions between the main types still to be found in use. This should make for an easier understanding of how specialized types have evolved from more primitive, all-purposes ones, with the increasing specialization of production systems. The wealth of dialectological evidence should also be extremely useful in that connexion. On the other hand, Indian sickles have their own place in a broader pattern. They are differing from, and standing between both the western types (Spain to Iran) and the far eastern types (China, Japan, Indochinese peninsula), except in so far as Indian sickles appear to have diffused into some areas of the latter. In addition, sickles from the Far South (Kerala, southern Tamilnad) appear to differ from the other Indian models, which again stresses the possible originality of southern Indian metallurgy and tool-kit. Whereas Punjab sickles seem to be specifically adapted to a mode of working in squatting position, which if true can be important for understanding the areal distribution of postures. Just looking at sickles a little bit more closely than usual will make us ask a lot of questions.

I was able to discuss at least shortly the problems of harvest tools and techniques with Prof. V.N. Misra and Dr. M.L.K. Murty in Poona, and

with Prof. S. Bhattacharya in New Delhi.

Conclusion.

The main idea of this report is that Indian and European traditional cultures are much closer to each other than expected, so that direct comparisons between them are possible and useful, especially in the field of material culture.

Comparative analysis is a study of differences, that is, of alternative methods used by different societies to deal with the same kinds of problems. But to be studied, differences are to be perceived in the first place. This is far from easy. Perceiving differences requires a mixture of skill and unsophistication that is hardly to be found in the same person. Whence the idea to arrange contact situations between French and Indian common people, villagers and craftsmen, and especially the young; with anthropologists from both countries being there to help, to observe and to record. The "jumelage" system (sister-cities) provides an example and model for such exchanges. It is expected that villagers with no theoretical bias, having to teach each other about each other's ways of life and work, would produce a more balanced picture than anthropologists working alone. For reasons of cultural distance, India is now probably the only Third World country where such a "jumelage" with French (or European) villages can possibly be experimented with any chance of succeeding.

Next to direct contact between common people, my second suggestion would be to arrange for Indian students coming to France (or Europe) to make fieldwork, since it appears to be difficult to persuade French students going to India to work on material culture (with some exceptions). Research subjects in France of interest to Indians are plentiful. I can only suggest, among many others, the following:

- swidden cultivation,
- grain storage and marketing policies from the 1930s on,
- economic problems of backward areas in a cultural perspective,
- labour migrations, past and present,
- changes in the techniques of daily life (cooking, cleaning, washing, lighting, transport, etc.) in the last 150 years, etc.

Finally, I would suggest the setting up of a cooperative research on the agricultural use of hand tools both in France and in India, with a special emphasis on harvest. This research would be organized along the following lines:

- a precise identification of harvest techniques and their localization

in time and space, aiming at mapping them as completely as possible;
- an emphasis on four main themes: labour productivity, gestures and postures, relationships metallurgy-agriculture, and correlations between differences in harvest practices and other differences in the production systems;
- a full cooperation between anthropologists (social and physical), archaeologists, historians, linguists and ergonomists, the need of physical anthropologists and ergonomists for the study of gestures and postures being especially stressed.

I do not know to what extent these suggestions are feasible, if at all. But I am pretty sure that the main obstacle to implement them will be the want of people, not the want of money. Before going to India, I could not be quite sure that the study of material culture there had the same importance than, say, in Europe. For if so, how could it be that the French indologists so conspicuously ignored material culture? I still do not know. But I am now more convinced than ever that a full understanding of material culture is a prerequisite for understanding anything else in the culture, in India like elsewhere, and perhaps still more than elsewhere. The main problem is to persuade others. And for that, results are needed. What I have tried to show in this report is how exchanges between India and France could be used as an opportunity to achieve convincing results as soon as possible.

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Some references.

In addition to personal contacts with colleagues, I had the opportunity during my stay in India to visit a number of libraries and bookshops. Some of the books that I happened to find there proved to be especially helpful and stimulating by their matter-of-factness, width of scope, informativeness, or keenness of approach. No doubt, most of these books are already well known to specialists. The reason to list them here is that they were all quite instrumental in the writing of this report, even when not explicitly quoted.

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