

AGARIYA-VIDYA

A Link in the

Philosophy of Emancipation

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This article attempts a social-philosophical analysis of the ferrous science tradition of the *agaria adivasis*. The central concern is to investigate the kind of social and epistemic standards and values demanded by such a knowledge system and by the knowledge tradition extant among various components of the *swadeshi samaj* which are completely different from the modern science. Attempt is also made to see how such traditions of knowledge can become sources of strengths for the society and how they can play their role in helping the people oriented philosophies to assume social power.

1. The Agaria

The *agarias* of Chhattisgarh have preserved the ferrous technology tradition of this civilization. These people who make pure iron by smelting the ordinary iron ore in very small furnaces located in their house-premises and are the preservers of such high art and science are just about the poorest in this country and untouchable in the larger society whose part they are. It is difficult to find a more telling example of how this great source of strength in society has been kept in a state of choiceless, powerless existence.

We got an opportunity to meet the *agaria* in 1990. Then we were investigating the idea of living traditions as a starting point for opening pathways of thought and action which may lead to a society free of exploitation. The concept of non-political power was already born in the context of the farmers' movement, further, attempts were live for realizing as its basis, at least in theory, those forms of knowledge and social power which were independent of modern science and the modern state and had the capacity to challenge these instruments of rule by man over man. It is at such time that PPST got a project for work on the live ferrous tradition. This project brought forth a variety of interesting points about this industrial tradition and later the context of the First Congress on Traditional Sciences and Technologies of India held at I.I.T. Bombay in 1993 provided an opportunity to organize this work from Varanasi.

Indian steel industry has a long history. Archaeo-metallurgy is a well defined subject in the universities. Steel making has touched rather high points in this land. The 'Damascus' swords were made from Indian steel. It is this tradition which we see living among the *agaria*. Far from the cities, towns and the roads, deep into the forest and mountain ranges where the agents of the government find it too troublesome to go, there are villages in the district of *Sarguja* where in a number of houses one can find the red glow in the small furnaces; iron-

smelting goes on here. The furnace is just about a yard in height and may be a foot and a half the measure of its outer diameter. The cylindrical contraption is somewhat wider at the base and narrow at the top with a vertical hole in the centre whose diameter is about 8-10 inches. It is made of earth mixed with a little rice husk, the central hole is from where the iron ore and the charcoal are charged from above. The ore is usually found near the mountains and the rivers. The charcoal is made by partially burning the picked up twigs and branches of trees in the forest. The furnace has two horizontal holes at the bottom at about 100 degree from each other meeting the vertical hole at the lowest end. One of these holes is for the slag to flow out and the other is used for supplying air to the high temperature zone using a bamboo with a longitudinal hole and a leather contraption for bellows. After a process of about 3 hours the *agaria* engineer opens the air supply hole and pulls out a red iron bloom of about 3-4 kilogram weight by a long pair of tongs. The iron bloom is then squeezed by heavy hammering. This is almost 100% pure wrought iron, malleable, ductile etc. It is not pig iron, the carbon content is somewhere around 0.03%. This simple looking process in fact seems to be woven by a balanced coordination of some of the very fine processes. Attempts to replicate in the University campuses are yet to deliver. The *agaria* seems to be a great master. You may change the charcoal, the source of the ore, the place or climate and the *agaria* engineer takes one or two experiments to settle on the new combination of different factors to deliver the *sponge* again. If you see him through the entire exercise you will be surprised to find that each time he does an errorless job of smelting without use of any machine, without measuring the rate of supply of air, the temperature, the rate of charge of ore and charcoal from above and without looking at the watch even ones.

The details available in books tell us that this wrought iron was taken in small pieces and fired for 48 hours in small crucibles mixed with some organic matter, to produce high carbon steel known as *wootz*. Making of *wootz* is considered the highest point of this tradition of ferrous technology. There must be *agaria* workmen even now who know how to make *wootz*, who may even be doing it. What appears to an educated eye just a technique or a living practice is in fact an activity which is integral to the history, geography, belief system, culture and economy of the society of the *agaria* and it is perhaps in this unity that it finds the basis of survival in spite of the very heavy odds.

The studies on the *agaria* tell us that iron has a central role in the life of the individual and the community. Iron has critical and important ritualistic role in every significant event from birth through marriage etc. to death. Their mythology and the actual real life economic activities all have iron at their centre. An understanding of such a context is necessary to understand the relation between knowledge and society. We would like our investigation to address questions like what is the form of such knowledge, what can be its role in the social dynamic, whether it can become a source of strength for the *agaria* community and/or for the larger society, does it entail ontological possibilities not admitted in modern science, does *adivasi-vidya* constitute a just and emancipative form of knowledge and does *lokavidya* point of view provide sufficient basis to address these questions? However, before we get on to these questions it may be useful to have a look at the relationship that the *agaria* has with the larger society and the modern state.

The chief sources of livelihood of the *agarias* are agriculture, repairs and maintenance of agricultural implements, wage labour, smelting and fabrication of iron implements, live stock (goat, pig, hen etc.) and collection of forest produce including hunting of small animals etc. The total income is so small that no aspect of life is even passably well attended. They live in clusters of houses ranging from 2-3 to 10-12 at a place on the outskirts of villages. Most villages, which includes both *adivasis* and *non-adivasis*, treat them as untouchable. The expert among them do get some recognition in the local society and these specialists too ordinarily do not work for wages on other's premises. Their activity of iron smelting may be shown as violating the Minerals Act and the Forest Act which gives space to the local forest guard and the policemen to throw a scare into them and obtain small favours. After independence the government organised campaigns to stop local iron smelting. In these campaigns the *agaria* have suffered also from police action, imprisonment etc. The *agaria* are so poor and weak that all these have thrown a great scare into them. When we had got out into the open in search of these furnaces, the stock reply we got was that all this had ended long ago. Those who were themselves operating the furnaces, also gave this reply. Because of untouchability they are unable to derive any strength from the larger *adivasi* society too. Those from the modern world presume that even if smelting furnaces are being worked at some places they are bound to die out soon, it being only a matter of time. Archaeologists, Metallurgists and Professors of Universities look at the whole process as some living remnant of a great tradition but fail to acknowledge the scientific status of such experts and do not give them a status higher than that of a skilled worker. These people think that they know more about iron making than the *agaria*, perhaps because they can write about it but the *agaria* cannot. Even such political leaders who have no vested interest are also guided by the standpoint of the University Science. Social activists working for the transformation of society with the intervention of modern technologies also do not see the knowledge of the *agaria* as a source of strength in society but only as a remnant of a once valued tradition which is bound to die out with passage of time. Thus here too there is no hope. It is only the standpoint of *lokavidya* inspired by Gandhi's philosophy which provides the starting point for such analysis and investigation which may break fresh ground for infusion of a new dynamic in society.

2. Form of Knowledge

Professors in the Universities are not ready to grant it the status of knowledge. Since this is the value of ruling classes and has widespread existence in society, the knowledge of the *agaria* does not get the respect it deserves. The *lokavidya* standpoint recognizes the systematic falsehood present in such a view and with its help one may attempt to uncover the reality of the knowledge of the *agaria*. This section tries to underline the possible salient features of such an attempt.

Structure of a system of knowledge can be understood through the ingrained values, the body of knowledge and ontological commitments. This understanding is the result of combining

lokavidya standpoint with philosophical analyses of modern sciences and it is presented here not as some ultimate truth or understanding but as an analytical tool necessary for theoretical activity today.

(a) **Value:**

An *agaria* family (2 brothers, Ram Saputtar & Ram Sundar and their children) from village Pendari, Wardruffnagar, Sarguja, Chhattisgarh (then Madhya Pradesh) performed a successful demonstration of their iron smelting method in *Swadeshi Vigyan Karyashala* organised in October 1993 at Gandhian Institute of Studies, Varanasi. Thousands of people saw two furnaces operated for three days. This was the first demonstration ever of the *swadeshi* iron smelting in any modern institution of learning. The chief expert Sri Ram Sunder sacrificed a cock before starting the work wearing a brand new *dhoti*. He was not ready to compromise on these preconditions. Since a cock was sacrificed in an institution running in the name of Gandhi, it gave rise to considerable debate before and after the event.

During our *lokavidya* work we have met all kinds of experts who are not ready to separate their faith and values from the knowledge system they master. Social historians have often seen it as superstition. If at all a rationale is granted it is only **as** fulfilling a need in his social security. *Lokavidya* standpoint argues that these methods of understanding the specialization and custom in larger society are extremely weak and are nothing but an ugly and false expression of the secular values of modern science.

Knowledge is always value-laden. Social values which provide the concrete context of the development of any stream of knowledge are also its internal values. Any spontaneous, self-propelling and autonomous activity must have the same external and internal values. Just as human beings are in a constant state of interaction with their environment and cannot be conceived independent of their environment (in fact the basic elements of the two are perhaps fundamentally not distinguishable) similarly knowledge systems are not separable from the values they embody and are embedded in and if we do this we draw only a false picture of the knowledge system. It is this picture, which gives birth to the dream of completely transforming knowledge into machine.

The *agaria* himself does not see his smelting capacity as separable from his society, traditions, faith and values. If we completely disregard *agaria's* view of his *own* knowledge while forming a view on *his* knowledge then we are bound to depart away from truth and the error would be greatly compounded if we think that his view of his knowledge is incorrect. Don't we all accept that the *agaria* is neither a machine nor a remnant but a living human being.

(b) **Body of knowledge:**

Autonomous streams of knowledge have autonomous view points on the question of knowledge. Who knows through what theoretical categories are understood the ore and its purity, charcoal from the wood of different trees, ceramic properties of furnaces, quality of product, process temperature, rate of operation of bellows etc.? The *agaria* ought to know how he does it. There is no reason to believe that categories and objects of knowledge assumed and prescribed by modern science should be acceptable in other knowledge systems too.

Everybody knows that the theoretical categories of modern medical science are completely different from those in *ayurveda*. Just as results of pathological tests do not make sense to a *vaidya* similarly doctors of modern medicine do not understand the language of *Vayu-pitta-cuf*. Similar is the situation perhaps between a professor of metallurgy and the *agaria*.

Another question of great importance is about the relation between technical knowledge and society. If somebody says that the *agaria* is doing iron smelting for 2-3 millennia and during this period this community has developed a special relationship with iron, this relation being part of the *agaria's* knowledge of iron works and that any group or community or even individual cannot develop this understanding in a few years, then how are we to respond to this. Will this understanding be considered sufficiently human or as one limiting human capacity and activity to racial specificity? Or will this understanding open new broad ways for just human activity through an understanding of racial autonomy and dynamic? The answer to these questions is related to whether a body of knowledge has some simple and absolute existence or whether it takes shape according to different societies and streams of knowledge prevalent among them.

(c) Logic:

The logic of the knowledge of the *agaria* is certainly different. We have seen Ram Sundar at the smelting operations. We do not know how he decided on the size and relative amount of the ore and the charcoal. However, with the change of source and therefore, type and quality of these materials he successfully affected the change in relative amounts and whatever else was necessary to complete the process. It took about 3 hours. His younger brothers and nephews worked on the bellows and he just watched from a distance the smoke, colour of the flame, the rate of coming out of slag and perhaps many other things and kept deciding from time to time whether pumping of air was to be increased or decreased, whether further charcoal was to be added, how much more and with what particle size the ore had to be added etc. Sri Ram Sundar and his team successfully performed again in December 1993 at IIT Bombay during the First Congress of Traditional Sciences & Technologies of India. In the city of Bombay it was difficult to find charcoal. From the neighborhood one could obtain only low quality charcoal. This did put the *agarias* into difficulty, however, Ram Sundar was able to change the various parameters to successfully demonstrate the smelting operation. All that is needed to be done starting from the raw materials to the

end product, the standards that need to be followed and the rational arguments that the artisan uses for experimentation, improvement and change are connected with one another by innumerable linkages. The dynamic of the network of these linkages is what may be called the logic of knowledge. Just as human beings cannot be replaced by machine similarly the logic of knowledge cannot be entirely replaced by mathematics and the language of computers.

When Deshabandhu Chittaranjan Das first met Gandhi he came back and told his friends that he (that is Gandhiji) believed in magic and not in logic (D. G. Tendulkar, Mahatama). *Agaria's* iron smelting seems to be such a magic. In this sense science too believes in magic but in black magic, the magic of Gandhi and the *agaria* is white.

We do not know how much the logic of one knowledge system can be comprehended from the standpoint of the logic of some other knowledge system, however, it is perhaps reasonable to assume that questions related to such comprehension are not static but dynamic. The main source of confusion in the discussion on logic of knowledge lies in the claim of modern science that its logic is context-free, knowledge-free and value-free and eventually free even from any relation with truth. A discursive exercise in the sphere of logic of the knowledge of *agaria* may help us in liberating ourselves from the compelling epistemic and 'logical' circumstance that modern science creates.

(d) Ontology:

The foregoing discussion on value, knowledge and logic may now be of some help in defining the ontological questions. If the present reality and forms of power are born together with value-free absolute knowledge and its independent-of-everything logic, then can the knowledge streams like those of the *agaria* bring forth that basic reality and forms of power in which there is no provision for the rule of man over man. The ontology of *lokavidya* does not allow conceptualizing hierarchy of basic entities and as a result also does not allow social hierarchy. The reality of these ideas may come home if we look at the social structure and public institutions of non-political societies. The knowledge of the *agaria* lends credibility to the claim of *lokavidya* that with social dignity it can bring before everybody thoughts of such social organization and social power which have been precluded from debate by modern science and modern education. This is the thought of non-political power which is based on the autonomy and equality of different knowledge streams in society.

3. The Social Dynamic

What is the role of the *agaria*, his knowledge or of our studies into the knowledge of the *agaria* from the point of view of mobilizing the forces of justice against exploitation for infusing a new dynamic in the society? There are several levels on which this question can be understood. For example first, how and what role can the knowledge of the *agaria* play in

transforming his present condition of existence? second , what is the value of these things in the campaigns of the *swadeshi samaj* against imperialism? third, what is the role of this technology in the context of the National Industrial Policy? and fourth, how can the debate on the knowledge of the *agaria* help in elevating philosophy to a position of social force? Now with the help of these questions we will try to understand the problem of infusing a new dynamic in society.

(a) The agaria community:

Agaria community knows that it is the master of a very special system of knowledge. In this he sees both the source of his dignity and identity. In spite of untouchability he sees in his knowledge a source of his strength. But he does not know how in reality can he convert it into actual strength. During our investigations we raised this idea to the status of a principle that the knowledge of the *agaria* must primarily serve to strengthen his social organization and enhance his strengths in the larger society. For this three things were given special importance: one, organizational development of his social (community) *panchayat*, two, development of local market for the products of his activity and three, a process of cultural regeneration based on his own system of beliefs.

An *agaria panchayat* was called on 30-31 May, 1993 at village Chichlikh, in Nagwan block of district Sonbhadra of Uttar Pradesh. The second *panchayat* was held in village Pindari, Wardruffnagar, district Sarguja (Chhattisgarh), on April 10, 1994. Both the *panchayats* were attended by about 200 *agarias* coming from villages in a circle of about 30-kilometer radius. These *panchayats* primarily discussed how their command of iron processes can play a role in the improvement of their economic condition. The sources of income of the better-off in the *agaria* community too are now based in agriculture or service. Those doing iron smelting live deep in the interior, they are very poor and have no influence even within the community. Therefore, the community values agriculture and education more than anything else but they also attach value to iron works from the point of view of identity, dignity and lasting interest.

The iron products that they make fetch good price in the market but due to fear of the local police and the forest office they have to keep the activity at a low level. What is needed for them is permission from the government for local iron smelting.

Cultural regeneration is necessary for revival of self-confidence. This is possible and desirable only through their *panchayat*. We were unable to link the process of *panchayat* called by us to the process of their traditional *panchayat*, so starting points for a process of cultural regeneration could not be found.

(b) Swadeshi Samaj:

This work among the *agaria* has significant lessons for the whole of the *swadeshi samaj*. It is a part of the defining characteristics of the *swadeshi samaj* that it is the

master of knowledge that belongs to this land, whose standards he himself decides and all the high experts are within itself. This study of the *agaria* community strengthens our belief that the basis of artisan-organization must be in his own knowledge and expertise. Only when this happens can he develop the strength to challenge the modern industrial system and proceed to give shape to a system of *swadeshi* industries.

This study of the iron-works of the *agaria* introduces us to that dynamic of the artisan with whose praise glow the pages of history. It is a source of astonishing power and possibilities. It is this dynamic, which has the capacity to recreate the world afresh. The dynamic of the artisan and *lokavidya* cannot be comprehended independent of one another. It is this dynamic, which has the capacity to mobilize peasants, women and the whole of *adivasi samaj* for unity with the artisan.

(c) National Society:

Friends doing metallurgy tell us that the kind of iron made by *agarias* is imported at very high prices. So if the iron-works of the *agarias* are promoted it may be possible to save on foreign exchange, reduce external dependence and affect economic relief to the *agarias*. Other than this the *agaria* specialists may be identified for experimentation to make *wootz* which is special high-carbon beautiful steel. To be able to do this will be a major step from metallurgical point of view. Further it will greatly help in restoring self-respect and the public image of *swadeshi vidya*. One does not find forces in the ruling configurations who may like to do this, therefore, these tasks will have to be taken up by social campaigns.

4. Philosophy: A Social Force

As globalization is progressing we find that where as the capitalists, traders and political leaders are becoming more and more aggressive, those individuals and organizations who challenge them appear weaker by the day. In last 50 years the knowledge of *swadeshi samaj* was neither considered a source of thought nor of any strength. However, the discussion above under “form of knowledge” and “social dynamic” brings to light such points which can become the basis for *agaria*’s knowledge to act as starting point for a philosophical campaign. Such a philosophical campaign will be able to stand up against the false weight and glitter of wealth, market and the modern sciences. *Today an anti-human, anti-social false and pauper system is coming into existence in the name of knowledge based society.* To erect the challenge to this, such a new ideological movement is needed which is based in the struggle of peasants and artisans and in their living traditions of knowledge. It is this philosophical campaign to which the *agaria-vidya* can contribute fundamentally from many angles and in many ways. Any people oriented philosophy which is in the interest of the people has to be based in *lokavidya*. *Agaria-vidya* is such a part of *lokavidya* that it may even get listed in “believe-it-or-not.”