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Social Power and the Future

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The general thesis of this essay has been that man's particular relation to the environment is fundamentally similar to that of any other species, in that it is a continuing effort to exercise sufficient control to extract energy from the environment. Particularly typical of man, however, is his cultural mode of behavior, which leads him to seek this security of control through the constant redefinition of himself and his environment, permitting him to develop his society into an ever-expanding system. The argument suggests that this constant expansion is inherent in man's energy-using role within the thermodynamic system, that he is not doing anything particularly "unnatural" by virtue of this behavior.

The essay has been particularly concerned with the process of social power because it is in this that we can see especially clearly how man's cultural mode of behavior has enabled him, progressively, not merely to exploit other areas of the environment, but also to exploit himself. Furthermore, it is argued that this is typical of man since the earliest emergence of cultural behavior; it is not something peculiar to more recent agriculturally or industrially based systems. Man has always used the ability to manipulate his decision-making in order to improve his situation.

While the major burden of the essay has been on analysis and on projecting portions of this analysis to help in understanding the past, a few pages devoted to the future are not out of order. The purpose here is to suggest some of the effects that the things we have been calling control and social power may have. First we will try to set aside some things that cannot happen; and then we will explore a little among the remaining alternatives.

* Richard Newbold Adams, *Social Power and the Future*, pp. 301–315 from Richard Newbold Adams, *Energy and Structure: A Theory of Social Power*. Austin: University of Texas Press (1975).

A. Some Things That Cannot Happen

This essay has been concerned to relate man's society to energy. Our focus has not been on man's, particularly Western man's, head-long destruction of his environment; this is a matter of extraordinary importance, but it is outside the scope of our theoretical concern. It is probably the case that man as a species can live on earth for an indefinite period (indefinite in that it depends on the continuation of appropriate ecological conditions, and we cannot predict when these may eliminate man, quite apart from his abuse of them), but only if he (a) changes his choice of energy mix and (b) reduces the amount of energy conversion he exercises, so as to achieve something approaching a steady-state system. Social power and control obviously play a major role in each of these choices.

"Energy mix" refers to the particular selection among the variety of energy forms available to man, that is, the kinds of resources that man exploits for his own continuance. Foremost in the public eye at the time of writing is the question of some specific resources, such as oil and increasingly rare minerals, and what the prospects may be for their availability in the future. Just as important as their availability is the problem of their residue after use. This is, in the broadest sense, the problem of waste, the remaining compounds and conditions that remain after conversion is accomplished, and for which there is no further technology. The problem of material and gaseous pollution is well before us; somewhat less attention has been paid to the problem of heat in the atmosphere, a consequence that is contingent on the use of almost all kinds of energy forms except direct solar conversion and that available from direct solar radiation, gravity, and the earth's movement (which includes winds and tides). In a recent review, William R. Frisken estimates that

On the longer term (say, more than 100 years) we have the more serious problem of beginning to warm the climate directly with our own energy conversion. This will be with us (in slightly different degree at any one time) whether we derive our energy from coal fires, nuclear reactors, or from fusion generators as yet only imagined. . . . if we continue to double our energy conversion rate every 17.5 years, in about 250 years it will equal the rate at which we absorb solar radiation at the earth's surface at the present time.¹

Of more immediate possible concern in atmospheric change is the greenhouse effect of carbon dioxide increase, which raises the temperature, although the nature of this process seems quite uncertain. Claude M. Summers argues that there are energy collectors, specifically those turning to solar and wind energy, that "would add no heat load to the earth's biosphere; they can be called invariant energy systems." However, Summers's estimate for the time at which we would be releasing heat at the absorption rate of the sun's radiation is only 99 years from

now, not 250.² If the problem of achieving the correct energy mix were merely a technical problem, the issue would be quite confounding in itself. It carries with it, however, an implicit and possibly even more difficult problem in the dimension of social power.

The relative mix of energy forms and sources available within any particular context will determine much about the amount and concentration of social power that we are likely to find there. The contemporary oil situation is as good an example as any. Oil has been contrived (with full intent by the industry) to be the major energetic resource of modern industrialism. From initial ownership of oil-bearing land to the ultimate consumer, oil engenders an incredibly complex power and control network that reaches deep into the government and economy of almost every nation in the world, as well as into a broad range of industries that are financially or technically dependent on the oil business. This is a vast coordinate operating unit that is bent both on retaining access to its own pluralistic resources and on utilizing the power it gains therefrom to the continued benefit of the unit. The problem that confronts man, very realistically, is how the species can effect sufficient countercontrols so as to exercise power over this complex coordinate system. If it were centralized, it might be somewhat easier, for then the center could be captured. But the great survival advantage of coordinate units is that they have no single brain, no vulnerable single nervous system.

Clearly the question of social power and its basis in control is central to this issue. If it were possible to make oil less important in the energy mix, then the coordinate unit would be less powerful; but it is specifically trying to avoid that eventuality. But there is one thing that we ultimately cannot have, and that is a system based on the present energy mix, and this means specifically that we must reduce our dependence on oil and other nonrenewable energy resources.

The amount of energy being converted, if we accept the theory proposed earlier in the essay, cannot continue to accelerate and must in fact be reduced and level off. Since the argument has been heavily made already, I will not repeat it in detail here, but will simply summarize it. The complexity, and therefore much of the form, of social and political organization is directly determined by the amount of energy that is being converted in the system. Since many of the particular forms of energy that we need are in terminal supply, we cannot indefinitely have an increase in the rate of conversion. This means that energy conversion and human society both have to level off into a steady-state condition. If the species does not devise some way to level off at its own rate, then it is quite simply the case that nature, of which it is a part, will level it off, if not all but eliminate it.

We might add here a point that was made earlier in the essay. At the maximal level of social organization of the species it may be possible to have one operating unit that is ranked clearly above others in terms of the controls and power that it exercises, but it is quite impossible to have this operating unit constitute an additional level of integration above its lesser peers. The species will never

achieve a monolithic power structure, simply because it will always be composed of parts that will be contending for control, and this inevitably means they will be exercising power over each other and contending for better positions from which to do this. Structurally, the top will always remain multiple. There will never be a single “supranational agency, a state above states,” that will be able to indefinitely exercise independent power either for the benefit or to the detriment of man the species.³ Man can never be politically unified; he will ultimately find levels of living that will require less energy; and he will find that he has to change his energy mix. All these are safe, and not trivial, predictions; but they are also of very little immediate help. Can the theory of social power provide any clarification of the alternatives here?

B. What Level of Life?

Man is placing the environment out of control at a rate that is some function of the amount of energy converted. The more advanced the culture, the greater the consequent structuring of the environment. It is increasingly broadly recognized in scientific communities that man must reduce the amount of his energy conversion and that he must find a way of achieving a steady-state economy and ecology.⁴ But there persists a nebulousness about the structure of this future. We tend to have dogmatic, but substantively indistinct, notions, such as Marx’s “higher phase of communist society,”⁵ or a kind of there-is-free-will-but-entropy-is-inevitable dualism. For example: “We could, for example, adopt as our cardinal philosophy the rule that no man or institution in our society may take any action that decreases the economic and social options of those who will live on the planet over the next 100 years. Perhaps only organized religion has the moral force to bring about acceptance of such a rule, but perhaps it could result also from an enlightened, widespread program of public education.”⁶ In suggesting religion, Jorgen Randers and Donella Meadows have resorted to a device that worked in the chiefdom stage of evolution; they then suggest public education, the cure-all that has marked the modern era, without recognizing that public education is a dependent variable of the system, not an independent variable that directs the system.

Harrison Brown foresees three future possibilities:

The first and by far the most likely pattern is a reversion to agrarian existence. This is the pattern which will almost certainly emerge unless man is able to abolish war, unless he is able to make the transition involving the utilization of new energy sources, and unless he is able to stabilize populations.

In spite of the difficulties that confront industrial civilization, there is a possibility that stabilization can be achieved, that war can be avoided, and that the resource

transition can be successfully negotiated. In that event, mankind will be confronted with a pattern which looms on the horizon of events as the second most likely possibility – the completely controlled, collectivized industrial society.

The third possibility confronting mankind is that of the world-wide free industrial society in which human beings can live in reasonable harmony with their environment. It is unlikely that such a pattern can ever exist for long. It certainly will be difficult to achieve, and it clearly will be difficult to maintain once it is established. Nevertheless, we have seen that man has it within his power to create such a society and to devise ways and means of perpetuating it on a stable basis. In view of the existence of this power, the possibility that the third pattern may eventually emerge cannot be ignored, although the probability of such an emergence, as judged by existing trends, may appear to be extremely low.

Brown then observes:

Indeed, it is amply clear that, if man wills it, a world community can be created in which human beings can live comfortably and in peace with each other.⁷

Like Randers and Meadows, Brown clearly sees the energy problems, but his first inclination is to be a little more realistic as to where this must ultimately lead. If nonrenewable resources cease to be available, then man must be reduced to an agrarian existence in which he can survive on renewable resources. But Brown, too, finds it hard to resist the culture in which he lives, and suggests that, if man could “abolish war,” then this end might be avoided; and, further, that “if man wills it” a comfortable world community can be achieved. Perhaps Brown was not aware that war was a hallmark of neolithic societies, and that it has increased with the amount of power and energy in the system, not decreased. Man’s will can have little to do with it unless expansion can be contained.

Gregory Bateson also seeks a solution, and, like the others, he is acutely aware of the energy component. His concern, however, is that we maintain a “high civilization.” It is worthwhile to lay out his argument in some detail:

It becomes then necessary to work toward a definition of “high.”

(a) It would not be wise even if possible to return to the innocence of the Australian aborigines, the Eskimo, and the Bushmen. Such a return would involve loss of the wisdom which prompted the return and would only start the whole process over.

This is an important and clever observation; and, as will be evident later, the possibility of starting “the whole process over” would seem likely. But Bateson’s objection is phrased in terms of human mental – specifically, memory – capacity, and does not examine the inevitability even without that memory.

(b) A “high” civilization should therefore be presumed to have, on the technological side, whatever gadgets are necessary to promote, maintain (and even increase) wisdom of this general sort. This may well include computers and complex communication devices.

(c) A “high” civilization shall contain whatever is necessary (in education and religious institutions) to maintain the necessary wisdom in the human population and to give physical, aesthetic, and creative satisfaction to the people. There shall be a matching between the flexibility of people and that of the civilization. There shall be diversity in the civilization, not only to accommodate the genetic and experiential diversity of persons, but also to provide the flexibility and “preadaptation” necessary for unpredictable change.

Here Bateson proposes that “on the technological side” there will be available an establishment that is characteristic of a very high-energy civilization, including computers and “complex communication devices.” He also proposes a “diversity” that would require a high cost of upkeep.

(d) A “high” civilization shall be limited in its transactions with environment. It shall consume unreplaceable natural resources only as a means to facilitate necessary change (as a chrysalis in metamorphosis must live on its fat). For the rest the metabolism of the civilization must depend upon the energy income which Spaceship Earth derives from the sun. In this connection, great technical advance is necessary. With present technology it is probable that the world could only maintain a small fraction of its present human population, using as energy sources only photosynthesis, wind, tide, and water power.⁸

Bateson evades some of the errors of the others. He does not directly invoke “will,” education, or religion to solve the problem. He also realizes that for man to obtain the immense amount of energy input necessary he will have to become ecologically extraterrestrial (hopefully with greater success than Icarus). Yet elsewhere Bateson seems to make clear that this would be unlikely: “The unit of survival is *organism plus environment*. We are learning by bitter experience that the organism which destroys its environment destroys itself.”⁹ When Bateson argues that the organism can survive only in conjunction with its environment, but then holds that the future “high civilization shall be limited in its transactions with environment,” we are left a little uncertain of his meaning of the terms. Clearly the sun can be little more than an energy resource; everything else currently comes from the terrestrial system, one way or another. I cannot help but suspect that Bateson’s judgment has also been tilted by the magic notion of a high civilization based on little energy.

Whereas Brown, Randers, and Meadows share the implicit dualism that Bateson observed was fundamental in the Book of Genesis, Bateson and Marx seem to argue that such a dualism may be avoided and that man can have the world and heaven too. My limited familiarity with Marx leaves me unclear how he would achieve this, but Bateson suggests that we plug directly into the sun. In the present essay the argument is somewhat different. A mentalistic-materialistic dualism may be necessary for methodological reasons, but the components are not used as actors who confront, dominate, or lose. Rather, the mentalistic and

the energetic are two aspects of a system that may be seen as conjunctive in every human act; every act is simultaneously a result of both components.

Basically, all these authors would probably agree that the species must achieve something akin to a steady state, but all to one degree or another seem to be drawn by what I have referred to as the magic of a high civilization with little energy.¹⁰ So the question that faces us is a double one: not merely, how do we achieve a steady state? but also, at what level should we aim to settle? Bateson argues that to return to a hunting and collecting existence would be to forego the great wisdom that humanity has achieved to date. Roy Rappaport goes further than this and does not even feel comfortable with Harrison Brown's suggestion that the agrarian existence is a solution:

We may ask if a worldwide human organization can persist and elaborate itself indefinitely at the expense of decreasing the stability of its own ecological foundations. We cannot and would not want to return to a world of autonomous ecosystems such as the Tsembaga's [a New Guinea agricultural society]; in such systems all men and women are (and must be) farmers. We may ask, however, if the chances for human survival might not be enhanced by reversing the modern trend of successions in order to increase the diversity and stability of local, regional and national ecosystems, even if need be, at the expense of the complexity and interdependence of worldwide economic organization.¹¹

Anthropologists have often treated peasant or primitive societies as if they were in a steady state, only to find later that they were not. Nevertheless, there is some reason to assume that many societies have lived for extended periods in at least an oscillating or quasi-steady state. Certainly Australian hunting and collecting bands that survived into the last century must have achieved some kind of steady state, since they had been in approximately that state for a good many millennia. Population was kept similarly in such a condition, presumably with fluctuations of the type mentioned in the last section. We are also reminded that they achieved limitation of births because a mother with more than one infant in arms would have had trouble keeping up with the band movements. A shift to sedentary life, however, "triggered population growth since women may have children frequently without . . . reducing their ability to provide for each one."¹²

Once into the sedentary life, local conditions may have restricted growth and expansion, but I suspect that we must regard the invention of agriculture and sedentary life as the real opening of Pandora's box. If one looks to the total sociocultural systems within which people were working and on the basis of which they were surviving, there has been little let-up in population and cultural expansion since that time. Arguments that urban populations do not reproduce themselves and that birth rates decline with education are small backwashes in a picture that is otherwise flooded with growth. There have been many particular cases where population growth has declined for various reasons; but they have not been sufficient to change the over-all expansion.

Besides the collectors, the only other type of society that might claim credit for establishing a steady state is the peasant. There is a literature in recent years that holds that these “part-societies” have devised a way to restrain advancement or expansion. Foster’s theory of the “limited good” represents the ethic,¹³ while Wolf’s thesis concerning the “ceremonial fund” (that proved so useful in Schaedel’s analysis of the organization of pristine chiefdomships)¹⁴ and Ruben Reina’s description of community pressure¹⁵ suggest some of the societal processes that may operate. While it is hard to argue that peasant populations characteristically are a steady state demographically, it probably is reasonable to argue that there are various devices that have been instituted over the centuries to restrict cultural expansion. Peasants, however, are necessarily subsectors (in Kroeber’s terms, “half-societies”), and often fairly marginalized ones, of complex macrosocieties. They are subject to many kinds of pressures, not the least of which are rent, tax, tribute payments, and market disadvantages, which can only increase if the superordinates become aware that the peasants are finding their art lucrative. Even without a “ceremonial-fund” hypothesis, it is quite reasonable to anticipate a reticence on the part of peasants to display excessive success. But the question of peasants in the context of the steady-state issue is misleading, because the crucial issue is not whether the peasants expand, but whether the society as a whole is expanding. Where peasant society manifests a cultural homeostasis, it may simply be that upper sectors are expanding their cultural activities at the cost of peasant rents and taxes. If that is the case, then the society is, in fact, expanding.¹⁶

The problem that confronts us is that human society has always been an expanding system, and there are implicit reasons for this in the nature of biology and culture. Yet it is clear that it cannot continue for much longer as an expanding system, that it will have to move to some other kind of state or states. Harrison Brown’s suggested agrarian existence may be workable if it is principally the question of energy that concerns us. Most writers, however, Brown included, prefer to opt for a society with many of the advantages of a high-energy system, but to have it based on less use of energy. This poses a dilemma that is insoluble.

The question then boils down to whether Brown’s agrarian proposal can stand up or whether even it faces serious problems. Since human society, like other societies, achieves survival at the ultimate cost of overproducing, it may be assumed that the continuing success of an agrarian adventure will also depend upon the society’s constant push toward expansion, either cultural or demographic¹⁷ or both. Agrarian societies are already at such a high rate of energy expenditure that their rate of evolutionary change is relatively high, and they will necessarily manifest a tendency to move toward the limits of their environment, with the inevitable consequences in attempted cultural advance and demographic circumscription. Thus agrarian existence eventually implies an increased rate of conflict and an increased likelihood of again moving to chiefdomlike or kingdomlike levels of integration. Presumably the advance would be hindered

or stopped at some point due to the absence of suitable energy forms, e.g., lack of adequate iron or other minerals. Thus man would presumably be contained at a steady state that would maximally be agrarian and empirically would probably consist of a rather wide variety of agrarian adaptations, contending and competing with each other depending upon the local circumstances. What would inevitably happen would be the repeated experiencing of adaptational catastrophe as the population grew beyond the limits of potential ecological production.¹⁸

Catastrophe within living memory or some reminder within the environment that provides a signal of danger seems to be important. Bateson has observed that, "In principle, the homeostatic controls of biological systems must be activated by variables which are not themselves harmful."¹⁹ Within cultural systems too, it is not viable to wait until there is a series of catastrophes that make further signaling unnecessary. Rather, there must be some cultural meanings in the system that attach to variables to warn of impending danger so that the homeostatic mechanism may go into effect.

An additional feature of agrarian and higher-ordered societies is that their members are inevitably going to increasingly promote the exploitation of their fellow men for their own survival and benefit. Margalef, it will be remembered, argued this as a principle for ecosystems in general,²⁰ and, as such, his argument is a detailing of the more general principle that Lotka set forth some years earlier. The dependency created by higher levels among the lower ones subordinate to them, with the inevitable marginalization that follows, is inherent in agrarian cultures as well as others. (One must be careful here not to confuse rank peers with superordinate-subordinates at different levels.)²¹

Although hunting and gathering societies did not appeal to Bateson as a potential way of life, given the ancestry of man, they have something to recommend them. The only approximately steady-state society that man has ever achieved is the hunting and gathering society. His tenure on earth has been principally in that condition, and the Australian aborigines and Bushmen of Africa give evidence that they have survived fairly successfully, at least until they were brought within the advantages of mercantilistic and industrial civilization.

The nomadic aspect is important, since that serves to keep the birth rate down, and the collecting level is important, since the rate of energy use is so low that the rate of cultural advance would be equivalently low. This alternative has certain other features to recommend it. The mentalistic structures of man proved eminently qualified to handle the kinds of problems that were presented at that level. Also, the governing mechanisms of these societies are totally allocative; there simply is not enough environment controlled to permit a concentration of power. It would, incidentally, also fit the democratic idea and the Marxist ideals. All men would have equality before the law, a thing patently impossible in a complex system. "From each according to his ability, to each according to his needs" would be a reality. It would achieve what Marx described as that "definitive resolution of the antagonism between man and Nature, and between man and man."²²

I am not entirely sure what Marx may have had in mind by the ultimate socialism; but, without entering a realm of mysticism that is quite foreign to me, I cannot see what other kind of steady state would meet most democratically and socialistically oriented political philosophies. Hinduism has, in the caste system, built a model of energy flow with the entire society stratified so as to purify and allow those who are purest to live reasonably well. An outsider or the impure might find the system somewhat discouraging; but Indians seem to have adjusted to it for many centuries.²³ It may be that the steady-state demography in India in earlier years depended on periodic famines, a method that is certainly one of nature's favorites, if not generally regarded as the most desirable among human beings. An economist has suggested that "Buddhist economics" has much to recommend it: "The ownership and the consumption of goods is a means to an end, and Buddhist economics is the systematic study of how to attain given ends with the minimum means." Although he makes a convincing case that the ideal of Buddhism could conform with the needs for a steady state, he does not show how a full-scale Buddhist society, based on agriculture, could evade for a thousand years or more the likely possibility of population expansion that would force an eventual concentration of power.²⁴

If the rate of culture change, as well as the level of evolution achieved, is hinged directly to the amount of energy being converted, then we presumably must think about the future of human society with that in mind. The present work, concerned as it is with human social power, would further argue that the political and social organizations will find themselves shackled to this variable quite as much as the technology, communication system, nutritional production, or any other aspect of the adaptive process. Liberty may be had, but not with a high-energy-level society; only collecting societies have offered this to man in previous eras, and even they cannot guarantee that such characteristics will flourish.

The problem of governance hinges on the fact that the kind of government we can anticipate depends upon the amount of energy in the system quite as much as do the kind of art, the kind of housing, the kind of recreation, and so forth. Just as a highly developed cinematography is impossible without the energy necessary for the diverse electrical, chemical, and developmental processes required, so it is difficult to have a centralized government without the available independent power that must come from reasonably well developed sources of food, shelter, and implements. The reason tribal organizations were prevalent during much of man's tenure and still visible widely during the past three hundred years was that it was not easy to get that extra power necessary to centralize.

By the same token, to assume that a "religion" or "widespread education" will produce an "ethic" can be meaningful only if the level of energy of the society and the level of power in the system are appropriate for those devices. Supernaturally oriented religions worked during chiefdoms, in lower-powered societies, because the governments were unable to support the bureaucracy and the number of nonproducers required. Proposals for utopian futures need to consider

not only the energy sources but also the power structure that will necessarily come into being from any such energy base and the administration and communication systems that can be supported by that level of energy conversion. It is, perhaps, a little much to ask of man that, in order to survive, he cease to be human.

Notes

- 1 Frisken 1973, p. 65. Reprinted from *The Atmospheric Environment* by permission of The Johns Hopkins University Press.
- 2 Summers 1971, pp. 105–6.
- 3 Cf. Fried 1968b, p. 150.
- 4 See D. H. Meadows et al. 1972; Daly, ed. 1973.
- 5 “In a higher phase of communist society, when the enslaving subordination of the individual to the division of labour, and with it the antithesis between mental and physical labour, has vanished; when labour is no longer merely a means of life but has become life’s principal need; when the productive forces have also increased with the all-round development of the individual, and all the springs of co-operative wealth flow more abundantly . . .” (Bottomore and Rubel, eds. 1964, p. 258).
- 6 Randers and Meadows 1973, p. 300.
- 7 Brown 1954, pp. 264–5. From *The Challenge of Man’s Future* by Harrison Brown. Copyright 1954 by Harrison Brown. Reprinted by permission of The Viking Press, Inc.
- 8 Bateson 1972, pp. 495–7.
- 9 Ibid., p. 483.
- 10 Among the most charming, if incredible, of these magic formulations may be found Shepard’s argument that we may anticipate a return to hunting and gathering, but with underground computers (1973).
- 11 Roy A. Rappaport 1971a, p. 80. Reprinted from “The Flow of Energy in an Agricultural Society,” originally published in *Scientific American*, September 1971, by permission of W. H. Freeman and Co.
- 12 Lee 1972a, p. 342.
- 13 Foster 1967, ch. 6.
- 14 Wolf 1966, pp. 7–9.
- 15 Reina 1963.
- 16 Our concern with an energetic steady state should not be confused by Bateson’s analysis, “Bali: The Value System of a Steady State” (1972, pp. 107–27). Bateson is not explicitly concerned with an energy system, but rather with a value system; and, as such, the “steady state” is somewhat metaphorical. The Balinese situation he describes does, however, have elements of a possible energetic steady state. Lack of population information and allusions to earlier and other Balinese expansive activities suggest that the apparent condition described by Bateson may have been due to a combination of colonial control and an economy of abundance. Other work suggests that population growth was going on apace during Bateson’s visit to Bali and that cultural expansion is certainly underway in some areas now. See Geertz 1963, pp. 21–2.

- 17 "Any species that does not, potentially, produce more young than the number of the population of the parental generation is out" (Bateson 1972, p. 430).
- 18 "I am rather inclined to think that for many years to come human populations will alternate between scares of overpopulation and scares (as in the 1930's) of dying out altogether through underfertility" (Medawar 1973).
- 19 Bateson 1972, p. 443.
- 20 Margalef 1968, p. 16.
- 21 Adams 1974a.
- 22 Bottomore and Rubel, eds. 1964, p. 244.
- 23 Gould 1971. Douglas, summarizing for some Brahmin castes, shows that they too may suffer intense restrictions to retain their purity (1970a, p. 171).
- 24 Schumacher 1973, p. 235.

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