

the major patterns of relationships exhibited in different parts of the world and attempt to understand their implications for peasant existence.

Peasant Ecotypes

Until the large-scale introduction of artificially synthesized foods, men must depend for their food supply on other organisms. Plants build up food from various chemicals in the process of photosynthesis. Men can obtain the food so produced by eating a plant either directly or indirectly—that is, by first letting an animal eat the plant and then tapping it in animal form, either as meat or as some by-product such as milk. Thus, man transfers energy—the capacity to do work—from plants and animals to himself. With the twin techniques of plant cultivation and animal domestication he renders this transfer more assured. A field of wheat and an animal byre are, from this point of view, means of accumulating and controlling readily available sources of energy. These sources form the basis of any ordered set of activities through which a peasantry adapts to its natural environment.

But man also exploits other energy resources in his environment, such as the wood of the forest, the water of streams, or coal in the ground. Peasants make use primarily of organic sources of energy, such as wood; but with simple devices they may also pump water to irrigate their fields and harness the wind to deliver force to a mill that grinds their grain.¹⁷ The ecological adaptation of a peasantry thus consists of a set of food transfers and a set of devices used to harness inorganic sources of energy to the productive process. Together, these two sets make up a system of energy transfers from the environment to man.¹⁸ Such a system of energy transfers we call an ecotype.

For our purposes we need to distinguish between two kinds of ecotypes: one marked by the employment of human and animal labor, and the other by increasing reliance on the energy supplied by combustible fuels and the skills supplied by science. We shall call the first kind of ecotype, with its reliance in the main on human and animal organisms, *paleotechnic*, the second *neotechnic*.

Paleotechnic Ecotypes

The paleotechnic ecotypes based on cultivation are the direct offspring of what we may call the First Agricultural Revolution. This revolution started about 7000–6000 B.C., and possessed its essential characteristics by about 3000 B.C. As mentioned above, its main characteristic

Two Economic Aspects of Peasantry

In the last chapter, we discussed the basic characteristics of peasantry and its recurrent and enduring problems. In this chapter, we shall deal with peasant economics. We shall do so in three sections. We shall first describe and discuss the major systems of gaining nourishment and surpluses from the soil, both in the past and at present. Here we shall analyze the peasant's activities as he cuts the soil with an animal-drawn plow or irrigates a field that will bear mature rice. In the second section, we shall deal with the ways in which peasants obtain goods and services that they do not produce themselves. Here our focus will be on the peasant household and its needs for subsistence, replacement, and ceremonial, and our emphasis will be on the way in which the peasant complements the goods he himself produces and the skills which he himself commands, by other goods and services. Our third section takes us into the subject of the linkage between peasantry and those who derive their living from peasant activities through the liens which they have on peasant surpluses. Here we shall focus on the ways funds of rent or profit are transferred. In each section, we shall analyze

is its reliance on human and animal energy. Men and animals are used to produce food to grow more men and animals. Moreover, production is aimed at providing foodstuffs, usually cereals such as wheat, rye and barley, to feed the producer and those who have a lien on his output and who live within a radius determined by the simple devices of transportation that are available. The simplest of such devices is the human carrier who brings his produce to a local market on his own back; the most complex of these the wind-driven sailing ship. A mark of this paleotechnic system is that cultivator and noncultivator live off the same crop. The cultivator consumes the same product that he transmits—through taxes or sales—to another. In addition to the organic energy supplied to the system by men and animals, there are simple machines making use of easily available wind and water—the boat, the water pump, the windmill. What skills are applied to cultivation are apt to be traditional, stemming only rarely from the advice of specialists.

The chief criterion for our classification of the paleotechnic peasant ecotypes themselves will be the degree of use of a given piece of land over time. The basic distinction between ecotypes can be expressed in terms of the amount of land used. We shall also consider the labor requirement of one ecotype, as compared with another, and the degree to which occupancy of a piece of land requires a given input of labor. That labor is always applied through use of a given implement, and here we shall—in the traditional anthropological manner—ask whether the system principally utilizes hand labor applied by means of the *hoe*, or also employs animal labor in providing traction for a *plow*. We shall also point to the length of the growing season, or its shortness, as a criterion in forming a peasant ecotype. The distinction here is between systems which can extend work throughout a long productive period and those which must compress their labor into shorter periods of time. The major paleotechnic forms of peasant ecotypes are:

1. *Long-term fallowing systems*, associated with clearing by fire and cultivation with the hoe. These systems are called *swidden systems*, after an English dialect word for "burned clearing." Fields are cleared by firing the vegetation cover—grass, bush, or forest; planted to the point of decreasing yields; and abandoned to regain their fertility for a stipulated number of years. Then other plots are similarly opened up for cultivation, and reoccupied after the critical period of regeneration is past. Swidden systems are found in both the Old and the New World. As we shall see below, such systems have supported peasantry only under exceptional circumstances.

2. *Sectorial fallowing systems*, in which cultivable land is divided into two or more sectors which are planted for two to three years and then left

to fallow for three or four. The dominant tool is the hoe or the digging stick. Such systems are also found in both the Old and the New World, for instance, in West Africa and highland Mexico.

3. *Short-term fallowing systems*, in which land cultivated for one or two years is reoccupied after a year of regeneration. The dominant tool is the plow, drawn by draft animals. Such systems are usually associated with the cultivation of cereals and are primarily found in Europe and Central Asia. Hence they may also be called *Eurasian grainfarming*.

4. *Permanent cultivation*, associated with techniques for assuring a permanent water supply for the growing crops. Such systems have been called *hydraulic systems* because they depend upon the construction of waterworks. They occur in the dry lands of both the New and the Old World where rivers can be tapped for irrigation, and in the tropical areas of the Old World where cultivators have succeeded in substituting a man-made landscape for the original forest cover and in tapping water resources to insure the production of their crops. There are no parallel systems in the tropical lowlands of the New World.

5. *Permanent cultivation of favored plots*, combined with a fringe of sporadically utilized hinterland. Such systems have been called *infield-outfield systems* where they occur along the Atlantic fringe of Western Europe. They are, however, also found in the Sudan, in highland Mexico, and elsewhere. The ability to cultivate permanently a given set of plots depends either upon special qualities of the soil, as in Atlantic Europe (where the limited areas of good soil on deltaic fans or fluvial and marine terraces are further supplemented by careful manuring), or upon the ability to irrigate permanently some portion of an otherwise unpromising landscape, as in parts of the Sudan and Mexico.

Of these five types of paleotechnic peasant ecotypes, three have been of major importance in the course of cultural evolution. These are the swidden, the short-term fallowing, and the hydraulic types. The other two, appearing only rarely and under special circumstances, have been of restricted influence, important though they may have been in particular local settings. In the discussion which follows we will leave them aside in order to emphasize the three major types.

Swiddens

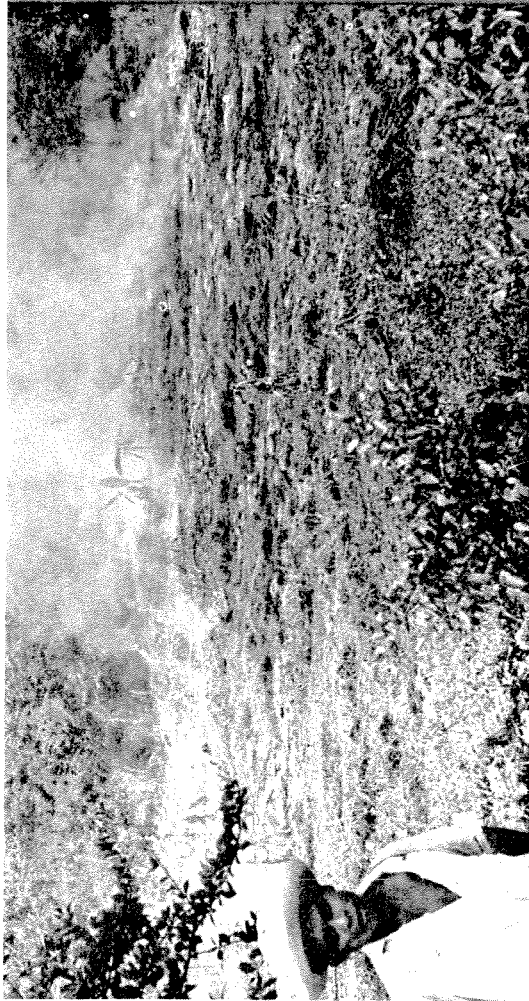
Let us first consider in greater detail the systems based on swidden cultivation. As indicated, swidden cultivation involves several steps. First, land is cleared by burning off the vegetation cover. Second, crops are planted in the clearing, usually without any additional manuring other than that provided by the ashes of the burned vegetation. Third, the plot

ing a plot to weed competition than fighting it.¹ Elsewhere, as in parts of the Amazon, cleared plots attract insect pests, and the cultivator may continue clearing forest, rather than return to his original plot. The significant technical limitation of this kind of ecotype therefore lies in leaving the tasks required to regenerate used plots in the hands of nature; the cultivator would rather take up new land than expend additional skills and labor. Hence, if the cultivator wishes to assure his sustenance, he must always have sufficient land to let rest some portion of it, while utilizing another. The land in fallow usually greatly outweighs the area under cultivation.

As long as this procedure is feasible, however, such systems can be remarkably productive. Under favorable circumstances, the Yagaw Hanunoo of the Philippines can grow an amount of rice per unit of labor put into their swiddens quite comparable to the production on doublecropped land under intensive hydraulic cultivation in the Tonkin delta of North Viet Nam. Similarly, swidden cultivation in Tepoztlán in Mexico produces yields equal to the best in plow cultivation of the permanent fields and about twice as high as the average yields of plow culture. Moreover, with long growing seasons, more than one crop can be taken during a year. In the Petén area of Guatemala, for instance, a cultivator can plant his regular maize crop on good rested land of black soil; but to assure the production of a crop in the dry season, he may supplement this with a plot opened in swampy area and also with a rainy-season plot on the steepest and highest portion of the area, where the pitch of the land insures adequate runoff of water. Or, as in many parts of Southeast Asia, rice grown in swiddens may be intercropped with additional crops, such as yams, which mature at different seasons. Another such instance is illustrated by figures cited for the Yakö in Eastern Nigeria, where yams are grown. Here an average garden of 1.5 acres, containing 2440 yam hills, has a mean yield of 2545 yams. The range of yields for different gardens extends all the way from 235 to 11,410 tubers.²

¹ See Ursula A. Cowgill, *Soil Fertility and the Ancient Maya*, Transactions of the Connecticut Academy of Arts and Sciences, XLII (New Haven: Connecticut Academy of Arts and Sciences, 1961), p. 33; Harold C. Conklin, *Hanunoo Agriculture: A Report on an Integral System of Shifting Cultivation in the Philippines*, FAO Forestry Development Paper No. 12 (Rome: Food and Agriculture Organization of the United Nations, 1957), p. 138; Isabel Kelly and Ángel Palerm, *The Tz'uj Totonac, Part I History, Subsistence, Shelter and Technology*, Smithsonian Institution Institute of Social Anthropology Publication No. 13 (Washington, D.C.: United States Government Printing Office, 1952), pp. 113-114.

² C. Daryll Forde, "Land and Labour in a Cross River Village, Southern Nigeria," *Geographical Journal*, XC, No. 1 (1937), pp. 32-34, 41; Conklin, *Hanunoo Agriculture*, p. 152; Pierre Gourou, "The Quality of Land Use of Tropical Cultivators," in *Man's Role in Changing the Face of the Earth*, ed. William L. Thomas, Jr. (Chicago: University of Chicago Press, 1956), p. 342; Oscar Lewis, *Life in a Mexican Village: Tepoztlán Restudied* (Urbana: University of Illinois Press, 1951), p. 156; Cowgill, *Soil Fertility*, pp. 13-14.



Swidden cultivator: Huastec-speaking cultivator clearing land along the Pan American Highway, near Tamazunchale, Mexico, late August, 1956. (Photo by Eric R. Wolf, from *Sons of the Shaking Earth*, published by The University of Chicago Press, 1959.)

obtained is used for one or more years, the duration depending upon local circumstances. Fourth, the plot is abandoned for a time so that it can regain its fertility. Fifth, a new plot is opened for cultivation. This sequence is repeated with a number of plots, until the cultivator returns to the field cleared first and repeats the cycle.

The critical factors in this system are threefold. They are: availability of land, availability of labor required to produce the key crop, and the length of the growing season during which the key crop or crops may be produced or alternated with other supplementary crops.¹

The need for land is determined by the rapidity with which an original plot, cleared and farmed to the point of sharply declining yields, can recover its original fertility. This capacity differs sharply from area to area, and generalizations are therefore hazardous. Around Lake Petén in the tropical forest of Guatemala—the home of the famed Maya civilization—the tendency on the part of present-day Maya cultivators is to use a plot only one year and let it rest for four years. Some who plant two crops in succession in the same plot allow it to rest six or seven years. In northern Yucatán the average fallow period is ten years. For the Hanunoo of the Philippine Islands, the minimum rest period is seven to eight years. But there may be factors other than soil depletion involved in the abandonment of plots. Thus, among the Totonac-speakers of the state of Veracruz in Mexico and in many parts of the Philippines, new clearings are threatened by invasion of tough grasses, and the cultivator may prefer abandon-

Undoubtedly, there are great differences between particular swidden systems, especially in terms of the length of the cycle of regeneration, in crops grown, and in length of growing season. Some systems are incapable of further expansion; they face the problem of insufficient land. Others, however, are still capable of adding considerable populations to the area now exploited. Thus, the Hanunoo could sustain a 60 per cent population increase from the present level of about 150 persons to about 240 persons per square mile. Similarly, it has been estimated that the area of Lake Petén, which now holds only one person per square mile, could sustain between 150 to 200 people per square mile. The reasons for stabilization at much less than maximum levels are obscure, but at least one factor may be the difficulty of generating new social mechanisms for the integration of such a large population. It has even been argued that social and political integration of populations utilizing swidden systems is improbable, because the need for new land tends to scatter the population over the landscape and inhibits its concentration and control. We do find among some populations with a tradition of swidden cultivation a distaste for concentration in settlements and its attendant centralized political controls. Groups of swidden cultivators in Southeast Asia, for example, forced to switch to intensive hydraulic cultivation on terraces, have, when new land frontiers became available, abandoned these terraces, which absorbed a great deal of labor and attention, for swiddens.³

Their decision may be due to their realization that swiddens provide a productivity comparable to intensive cultivation, but the impulse is probably intensified by their inability or unwillingness to give up their traditional social and political autonomy for the role of a dependent peasantry in asymmetrical relationships with dominant overlords. We owe to Edmund Leach an excellent case study, among the Kachim of mountain Burma, of the dynamics involved in such choice.

Similar considerations apply to the problem of whether a swidden system is capable of yielding sufficient surpluses to support a noncultivating elite of craft specialists. Some swidden systems undoubtedly operate at a level where further increased yields are impossible; and such increased yields would in any case be difficult to collect, due to the dispersal of the population and the decentralization of social ties. However, some swidden systems appear capable of further increases and of surplus production. Thus, it has been estimated that with a population of between 150–200 persons per square mile of arable land among the Maya of Lake Petén, half the adult population could have produced sufficient surpluses to feed the other

³ Robert von Heine-Geldern, "Südostasien," in *Illustrierte Völkerkunde*, ed. Georg von Buschan (Stuttgart: Strecker und Schröder, 1923), II, p. 808; Edmund R. Leach, *Political Systems of Highland Burma* (Cambridge: Harvard University Press, 1954), pp. 27–28.

half.⁴ Similarly, populations like those of the Yakö, with their abundant yam hills feeding a population of 150 people per square mile, could probably, given the social organization and necessary incentives, have provided a surplus for noncultivators. Under exceptional circumstances one can envisage such growing integration, either through growing ties to a ceremonial center of the kind that has been postulated for the Maya, or through conquests by invaders such as appear to have taken place in West Africa.

Swidden planters, however, are easily able to step from the status of autonomous cultivators to that of dependent peasantry where some other system serves as an anchoring point. An example of this comes from Africa, where the Ganda of Uganda maintain plantain gardens which bear 20 years or more, even up to 50 years. Here an average-sized plantain garden of three acres will bear from 12 to 18 tons of fruit a year. These plantain gardens are surrounded by impermanent fields in which other crops are grown. While the system does not inhibit population movement it fosters both population concentration and relative stability.⁵

As such areas move into the orbit of the commercial world, moreover, we also find commercial crops functioning increasingly as anchoring points for swidden farmers. Thus, the slashing-and-burning Totonac-speakers of Veracruz grow vanilla trees to obtain vanilla for sale; swidden farming may also be combined with the cultivation of pepper trees or coffee, as in Indonesia and New Guinea, or with cocoa trees, as among the Ashanti of West Africa. And we also find secondary slash-and-burn cultivation in conjunction with stationary permanent populations, in areas where land scarcity and population pressure have driven people to clear and cultivate marginal lands. This has been the case in Europe, as in the Hundsrück and the Vosges Mountains and is currently the case in many parts of Mexico.⁶

Hydraulic Cultivation

We have seen that ecotypes based on swidden can support a peasantry only under exceptional circumstances or where swiddens become "anchored" to a nonswidden crop. In contrast, hydraulic cultivation provides a solid basis for peasant society. While swidden systems can be

⁴ Cowgill, *Soil Fertility*, p. 40.

⁵ Harold B. Thomas and Robert Scott, *Uganda* (London: Oxford University Press, 1935), pp. 112–124.

⁶ On the Totonac, see Isabel Kelly and Ángel Palerm, *The Tain Totonac*, pp. 100–126; on Indonesia, Karl J. Pelzer, *Pioneer Settlement in the Asiatic Tropics*, American Geographical Society Special Publication No. 29 (New York: American Geographical Society, 1945), pp. 25–26; on Ashanti, Robert A. Lystad, *The Ashanti: A Proud People* (New Brunswick: Rutgers University Press, 1958), p. 34; on Mexico, Oscar Lewis, *Life in a Mexican Village*, p. 157.

found in many different environments, however, hydraulic farming is largely restricted to dry zones that receive less than ten inches of rainfall per year and to those tropical areas where men have cleared an alluvial fan of its original rank vegetation to plant a water-seeking crop like rice. In dry lands, especially, it is the life-giving water which constitutes the critical factor in agricultural success. To obtain it, in sufficient quantity, is the cultivator's crucial and enduring problem. Spotty water sources appear occasionally along talus slopes where mountains descend into lower-lying basins, or where the bedrock is cracked and water rises to the surface in occasional oases. But it is the valleys of great rivers which provide the ideal setting for this kind of cultivation. Rivers usually deposit alluvial soils, rich in plant food, and their water can be led off to potential fields over a network of irrigation canals. With irrigation, great yields become possible. In the dry country of Lebanon, where farming based on rainfall alone results in yields only three to five times the amount of seed utilized (1:3-5), irrigated cultivation in the nearby river valleys could produce a yield of 1:86, a figure based on records recovered from ancient Sumer.⁷ Frequently, the construction of large water works has been associated with the emergence in a society of strongly centralized political controls capable of marshaling men and goods towards the building of necessary dikes and canals.⁸

A second environmental setting for hydraulic cultivation has been the tropical forest of South and Southeast Asia. That no comparable development has taken place in the tropical forests of the New World demonstrates that the adaptation is not inevitable, only possible. In Asia, men have succeeded in cutting down the forest and replacing it by a modified environment.

Tropical soils appear, indeed, to pose certain critical problems to their occupants. Where rainfall exceeds evaporation and the soils are either too permeable or not permeable enough, there is a tendency for the rainwater to wash the surface soil clean of the substances required to feed cultivated plants. This condition may produce a growing impoverishment of the soil.

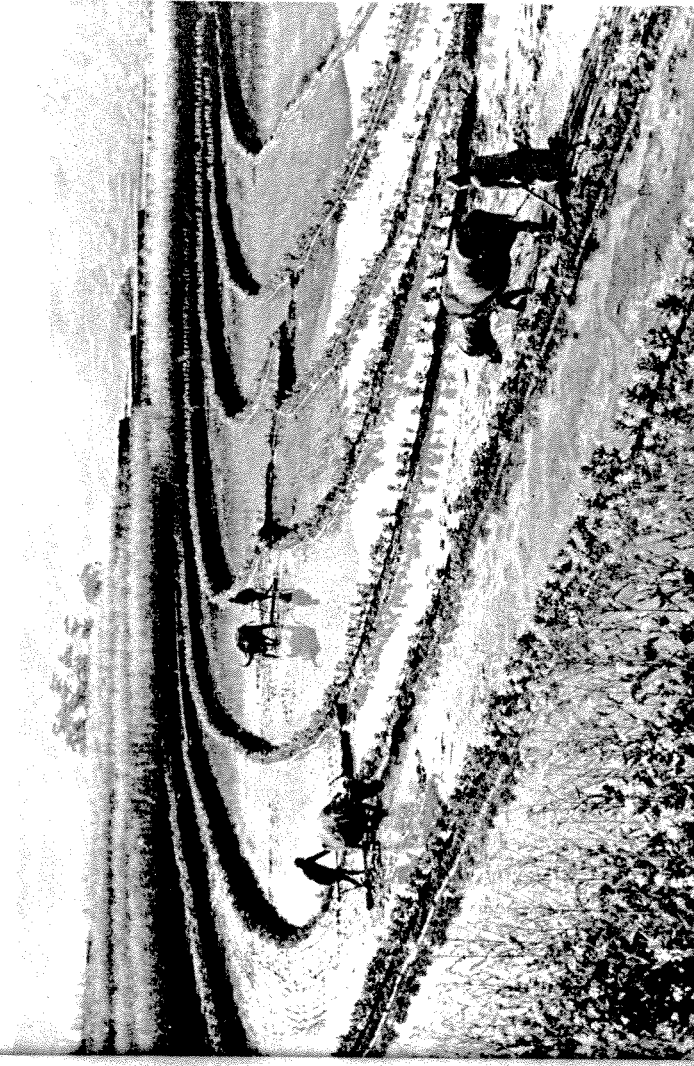
⁷ Raymond E. Crist, "The Mountain Village of Dahr, Lebanon," *Smithsonian Report for 1953*, Publication 4163 (Washington, D.C.: Smithsonian Institution, 1954), p. 410; Richard Thurnwald, *Economics in Primitive Communities* (London: Oxford University Press, 1932), p. 95.

⁸ Cause and effect are here not entirely clear. It would certainly seem as if the construction of large region-wide water works or the integration of many smaller irrigation systems into a large overarching system was greatly facilitated by the rise of autocratic governments which could coerce men to contribute the necessary labor. Yet recent comparisons of ethnographic data suggest that "centralization of authority is an exceptional response to the problems of irrigation agriculture." See René Millon, "Variations in Social Responses to the Practice of Irrigation Agriculture," in *Civilization in Desert Lands*, ed. Richard B. Woodbury, University of Utah, Department of Anthropology, Anthropological Papers No. 62 (Salt Lake City: University of Utah Press, 1962), p. 87.

In high-temperature areas characterized by alternating rainy and dry seasons, however, it is possible to achieve a fine balance between the impoverishing processes and the processes by which micro-organisms build organic matter. This balance is accomplished by creating an artificial environment, a network of lakes and ponds in which the soil is flooded periodically. Here the impermeable soil pan is insulated from the direct action of rainfall by a layer of water, and micro-organisms that work without oxygen from the air contribute to the creation of a rich layer of black soil under water.

The most characteristic adaptation to this latter set of conditions is found in the wet rice complex of the Orient. This is an adaptation that requires an enormous input of labor to fulfill its promise. Fields must be carefully graded so that irrigation water will not only stay near their centers, but also reach the margins. Dikes must be constructed parallel to the margins to insure that water will not flow towards the center alone. Similarly, trenches must be dug to drain off water in times of excess. Rice is first planted in a nursery where the seedlings must be carefully watered. In the meantime, the field for which they are destined must be prepared by breaking, conditioning, irrigating, and leveling the soil. The work of

Harrowing paddy fields for the spring sowing in Szechuan Province.
(Eastfoto, by Chen Chieh.)



readying the soil is often done manually with a hoe, and the irrigation water has to be pumped to the field with man-operated devices. Then the fields must be leveled once more, before the young shoots from the nursery are transplanted by hand in bunches of six to seven stalks. Once the rice is in the ground, the field has to be kept free of weeds; fertilizer—consisting of human and sheep manure as well as of soya bean pulp—is spread on the fields; then the fields are weeded once more. Throughout, the rice must be carefully watered; this operation involves more pumping, either to add water to the fields or to rid it of excess. When the rice is mature, it is cut by means of sickles, bundled, threshed by striking the ears of grain against a wooden box, and finally hulled.

Where the hills dip down to the lowlands, work in the rice paddy may often be combined with work on land that cannot be irrigated. Here the peasant may grow oil-bearing seeds or perhaps cotton. Hill slopes may be planted to trees, such as mulberry, tea, or pepper trees. At the same time, fish can also be raised in the artificial ponds; sometimes in conjunction with irrigated rice fields, ducks are allowed to feed on aquatic plants, and the aquatic flora itself may be returned to the fields as fertilizer.

This ecotype is characterized by high productivity per unit of land, but low productivity per unit of labor. A given piece of land farmed with such intensive hand labor will produce a great deal more than it might with more extensive methods, but it will absorb inordinate amounts of human effort, especially where the main crop is irrigated rice. Such an input of labor is most applicable in areas where land is scarce and labor plentiful. The comparison between hydraulic cultivation and more extensive ecotypes using moisture derived from rainfall alone is put in sharp relief when stated in terms of man-days—each involving 10 hours of work—devoted to the cultivation and care of a single acre. Thus, paleotechnic cultivators in Morocco and Algiers devote between 18 and 24 man-days of work to each acre. In Tepoztlán, Mexico, plow cultivation involves an average of 19.4 man-days per acre; the comparable figure for hoe cultivation is 57.9. But hydraulic cultivation of rice ascends to 90 man-days per acre in Japan and to 178.2 man-days per acre in Southwestern China.⁹

Yet if hydraulic cultivation requires a great deal of labor, it can also support dense populations. Archaeologists estimate that population densities in the Near East doubled with the advent of hydraulic cultivation: Neolithic Jarmo in the Kurdish hills (dated about 6750 B.C.) had an approximate population density of 25 per square mile; alluvial Southern

⁹ The figures are drawn from René Dumont, *Types of Rural Economy: Studies in World Agriculture* (London: Methuen and Co., 1957), pp. 181–190. Lewis, *Life in a Mexican Village*, pp. 155; Fred Cottrell, *Energy and Society: The Relation between Energy, Social Change, and Economic Development* (New York: McGraw-Hill, 1955), p. 138; Hsiao-Tung Fei and Chih-I Chang, *Earthbound China: A Study of Rural Economy in Yunnan* (Chicago: University of Chicago Press, 1945), p. 33.

Mesopotamia—Sumer—of 2500 B.C. probably had a population density of 50 per square mile. Even more impressive are modern density figures, as in such heavily irrigated areas as the lower Yangtse Valley in China, which has 1980 per square mile as compared to the total Chinese average of 254 per square mile, or the 5000 per square mile reached in some areas of north-central Java as compared to the Indonesian average of 155 per square mile.¹⁰ The same capacity to sustain heavy population has been noted in areas under intensive hydraulic cultivation in Mexico. Thus, it has been estimated that a community of 100 families with swiddens of the kind found in lowland Veracruz would require 2964 cultivable acres. One hundred families living under conditions of permanent cultivation of garden plots with swiddens (conforming to our ecotype Number 5) would require 1606 acres. The same number of families, with some fields under short-term rotation and canal irrigation would occupy 212 acres. Finally, the same community in a completely irrigated area would require but 91 acres to feed itself through commercial production, and between 148 and 173 for mixed subsistence and commercial production.¹¹

But we can imagine a different weighting in the relation among available labor, land, and growing season. Suppose that labor is scarce. Swidden cultivation could still show high yields per unit of land, but with a small labor force the total output will be low also. Now suppose further that year-round cultivation is impossible and that climatic conditions impose a shortened growing season, so that labor effort will have to be concentrated in a short period of time. Under these circumstances a population of cultivators would view with favor an innovation which can allow one worker both to extend the area under cultivation and to concentrate his labor effort in a shorter period of time. The draft plow is such an instrument. The great value of the draft animal lies in the rate at which it can deliver energy, allowing a man to plow a much larger area in a much shorter time than he would be able to accomplish by himself. If we further consider the fact that such a population may be under pressure, by its rulers or other forces, to produce more than it needs to feed itself, the attractiveness of this combination of stockraising and cultivation appears still greater.

¹⁰ For prehistoric population estimates see Robert J. Braidwood and Charles A. Reed, "The Achievement and Early Consequences of Food-Production: A Consideration of the Archaeological and Natural-Historical Evidence," *Cold Spring Harbor Symposia on Quantitative Biology*, XXII (1937), pp. 25–29. The Chinese population figures compare densities in the Yangtse Plain, as of the time of first field work by Hsiao-Tung Fei in 1936, with estimates for China as of 1929. The figures for Indonesia are from Clifford Geertz, *Agricultural Involution: The Processes of Ecological Change in Indonesia* (Berkeley: University of California Press, 1963), pp. 13, 33.

¹¹ Ángel Palerm, "The Agricultural Bases of Urban Civilization in Mesoamerica," in *Irrigation Civilizations: A Comparative Study*, ed. Julian H. Steward, Social Science Monographs I, Social Science Section, Department of Cultural Affairs (Washington, D.C.: Pan American Union, 1955), pp. 29–30.

Under such circumstances, a man with a draft plow may be able to feed not only himself and his family, but other men and their families as well.

Eurasian Grain Farming

Such considerations may underlie the spread of the third major paleotechnic peasant ecotype, characterized by short-term fallowing, in which the dominant tool complex utilizes the plow with animal traction. We have seen that this ecotype is associated in the main with the production of cereals. Neither swidden nor hydraulic cultivation makes extensive use of domesticated animals during tillage and harvest. In Eurasian grain farming, however, cultivation is closely geared with livestock raising. Large work animals draw the plow and harrow; they also provide manure for the fields and aid in threshing. In addition they furnish meat and milk, hides and wool, and they can be mounted or harnessed to carts or wagons.

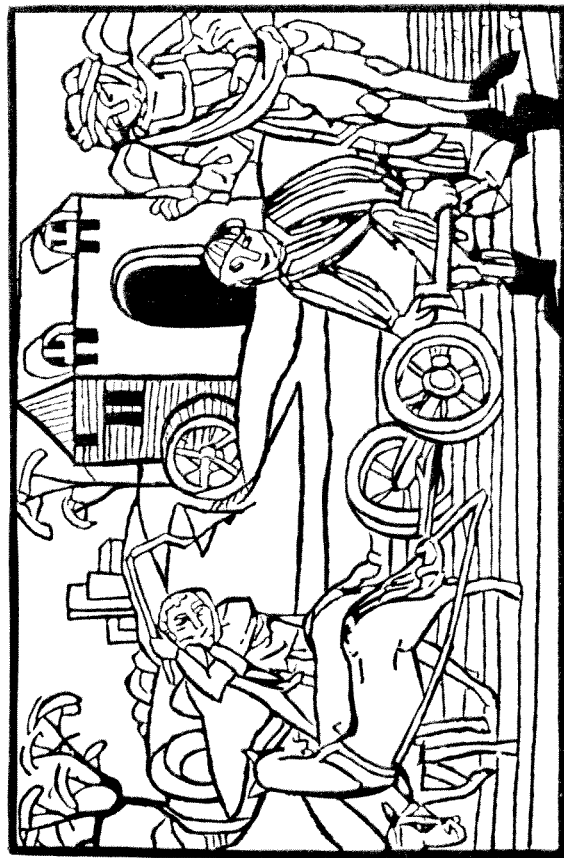
The use of large domesticated animals such as oxen or horses in agriculture greatly increases the mechanical energy available to those who are able to harness them to the plow or to other instruments. The ox or the horse function in this respect like an organic machine. "The work animal," says Pfeiffer, is "the genuine forefather of modern machinery. In fact, plow agriculture contained a germ for further technology, in that the harnessed power of the animal was to be applied, in time, to other implements for sowing and harvesting. The consequence was that larger areas might be conquered. The method was particularly adapted to the small grains, which are sown broadcast."¹²

We have seen that this ecotype would have proved especially favorable in lands characterized by a scarcity of agricultural labor. Conditions of labor scarcity in agriculture can be of two kinds: either absolute, because the total population is small, or relative, because although the population is large, only a fraction of it is engaged in cultivation. Where labor scarcity is relative, it is nevertheless real, because social pressures exist to make some men produce a surplus of rents from as much land as is available for as many noncultivators as they can feed. We may presume that such conditions existed in the densely populated areas of the Near East and Mediterranean where we find the earliest evidence for the draft plow—Mesopotamia, Egypt, and Cyprus before 3400 B.C. The bulk of agricultural produce in these areas was produced by hydraulic cultivation in the irrigated river valleys of the Nile and the twin rivers Tigris and Euphrates. Even Rome in its heyday drew from irrigated Egypt and North Africa the surpluses that fed it. Yet there were many areas where hydraulic cultiva-

¹² Gottfried Pfeiffer, "The Quality of Peasant Living in Central Europe," in *Man's Role in Changing the Face of the Earth*, p. 250.

tion was impracticable, but where rainfall cultivation by means of the draft plow was perfectly feasible and was indicated by conditions of relative labor scarcity.

The demand for such an instrument would prove to be equally great, if not greater, in areas with a low absolute population and short growing season, yet with relatively abundant areas of land. Such an area was transalpine Europe, where in the early Middle Ages population densities were



Peasant plowing under the supervision of an overseer. (Rodericus Zamorensis, *Spiegel des menschlichen Lebens* (Mirror of Human Life), Augsburg edition, Peter Berger, 23 August 1488.)

still astonishingly low. Around 500 A.D. there were probably no more than five to thirteen persons per square mile even in favored areas. England in 1086 had a density of only 30 persons per square mile; by 1377 it had risen to about 52. Holland was, in the late Middle Ages, one of the most densely populated areas of Europe: In 1514 population densities came to 96 per square mile. Elsewhere they remained much lower: Switzerland had 36 in 1479, Tirol 39 in 1604.¹³ Here and there local conditions might impede the spread of the draft plow. In Scotland and Ireland, for instance, the

¹³ Abel, *Geschichte der deutschen Landwirtschaft*, pp. 13–17; Bernard Hendrik Slicher Van Bath, *The Agrarian History of Western Europe: A.D. 500–1850* (London: Edward Arnold Ltd., 1963), pp. 81–82.

foot-plow, breast plow, and spade often proved more efficient on tough, rocky hillsides than the draft plow. Elsewhere, local conditions would favor the introduction of new plows, especially when soils could be taken under cultivation that had proved impermeable to hoe or digging stick.

This third major paleotechnic ecotype—cultivation with an animal-drawn plow, together with short-term fallowing—has developed two main variants. These are the Mediterranean ecotype and the transalpine, or Continental, ecotype.

MEDITERRANEAN ECOTYPE. The Mediterranean area of Europe is in essence an adjunct of the dry lands surrounding it to the east and south, but it is blessed with a slightly different distribution of rainfall. The summers are hot and dry, yet rain falls during the mild winters. Hence, the original vegetation cover of the area is a scrub forest characterized by stands of oaks and chestnuts. Crops dependent on rainfall are usually planted in the fall and harvested in the spring. Land is divided into two fields, each used alternately for cultivation and stock pasturage. The characteristic agricultural device is the scratch-plow, or *ard*, the *aratrum* of the Romans. It is the oldest form of the plow known, and its form has remained basically the same in the areas where it is still used. Essentially it is a crooked stick. The cultivator lays hold of one end, the other is shod with metal; the plow is drawn by a pair of draft animals, usually oxen. It is light and easily transported; it is cheap to make and easily repaired. The *ard* is especially adapted to light and friable soils where the chief problem is to prevent moisture from rising to the surface by capillary attraction. Where a heavier plow would damage the capillaries and cause the water to evaporate during the summer drought, the *ard* merely scratches the soil, thus keeping the capillary system intact. Fields are plowed and cross-plowed several times, hence acquiring a squarish shape. Such a field system will, as we have seen, be associated with some livestock keeping. But the livestock is usually small. Goats which can survive on dry scrubby marginal land are especially characteristic. In addition, tree crops such as olives or pistachio nuts may be cultivated, and vines may be tended to produce grapes for wine.

This propensity for supplementing basic cereal production with specialized crops has provided the basis in many areas of the Mediterranean for the development of a neotechnic peasant ecotype, operating to provision urban centers with tree and horticultural products, as we shall see presently. Early commercialization of such crops has tended to convert the individual cultivator into an independent economic agent. This drift is also reinforced by the fact that neither *ard* cultivation nor any of the associated activities requires a cooperative labor unit larger than the individual

domestic group, a feature that stands in marked contrast to the picture presented by cultivation in transalpine Europe, where the dominant implement is the improved northern plow—the wheeled plow, which the Romans called the *caruca*.

It is also important to remember that, although the Mediterranean ecotype represents a special adaptation to a particular set of environmental circumstances, it has not remained restricted to Europe. The conquest of the New World by Portuguese and Spaniards introduced the *ard* and the associated system of cultivation to the Americas, where many peasants in Latin America to this day farm in ways basically cut from an originally Mediterranean pattern.

TRANSALPINE ECOTYPE. Transalpine Europe, in contrast to Southern Europe, is characterized by rather plentiful rainfall, strong contrasts between winter and summer, and the development of a forest cover of mixed conifers and broadleaves. Here the light Mediterranean *ard* gave way to the heavy wheeled plow, capable of cutting a deep furrow in the heavier clays and loams of the north, which are watered by heavier rainfall. The aim of the plowman was not to prevent evaporation of scarce water, but rather to achieve adequate drainage. This goal was accomplished by plowing in one direction, cutting sod and turning a furrow. The movement was then reversed, resulting in characteristic long and strip-like fields.

The plow was invariably drawn by draft animals. Two oxen sufficed to draw the Mediterranean *ard*, but the heavy wheeled plow of the north needed more ox-power. Usually four or six oxen were originally tied to the plow; later horses were substituted for oxen. Farming with the heavy plow thus implied the employment of animal resources which was often beyond the capacity of the single cultivator. Hence, it led gradually to some system of pooling of animal resources, in which neighbors or a lord and his subjects combined their draft animals to furnish the required plow team.

The draft animals, moreover, must be fed and cared for, if they are to be available season after season. This is imperative in areas with severe winters, where arrangements have to be made for stall-feeding the animals during the cold season. The provision of hay and other feed thus became a necessary adjunct of plow cultivation, and the plowman required not only cultivable land, but also meadows on which to raise feed for the animals. Where land was scarce and had to be used intensively, therefore, competition developed between the use of land for human and animal subsistence.

This transalpine ecotype operated first with a two-field cycle of rotation, in which fields were alternately utilized and turned over to stock,

much as in the Mediterranean. Gradually, however, more complex patterns of field rotation developed; fields might be planted to a succession of crops with different requirements in successive years. The fields thus were taken under cultivation in an orderly short-term cycle. They were usually clean-tilled with only one crop per year. The crops varied largely with local climatic conditions, more favorable areas being devoted to wheat, more adverse areas to harder ryes and barleys. This division was especially characteristic of Western and Eastern Europe. A line corresponding to the January isotherm of zero centigrade marks the divide between eastern areas having at least one month of the year frozen and those to the west where January is normally green. In the east wheat was rare, while cold weather crops or crops with shorter growing seasons predominated. Here rye and barley were the main grains, supplemented since the great worldwide diffusion of the American Indian crops by potatoes and maize. Until the advent of the Second Agricultural Revolution in the eighteenth century, moreover, the system relied largely on rainfall for its water supply, and fertilizer was spread on the fields casually or intermittently rather than systematically. Although the use of manure developed in Italy as early as the fourteenth century, transalpine Europe appears to have lagged behind in its employment. Thus, this ecotype contrasts with hydraulic systems of the East not only in its reliance on rainfall and on animal traction, rather than on artificially supplied water and hand labor, but also in its ability to supplement the natural potential of the soil with human and animal fertilizer.

Again, this system spread beyond the boundaries of its original environmental setting, especially once it was rendered more efficient and adaptable through the addition of new devices and skills. It spread overseas, but also within the continental land mass into the Asian steppe, where, however, it long suffered the competition of pastoral nomadism. In the grasslands and steppes of the East, the pasturing of large herds of domestic animals frequently proved more efficient than the cultivation of soil. Moreover, the pastoral nomads themselves long constituted a threat to settled cultivators, and permanent expansion of cultivation into the area came only with military control of the pastoralists. This expansion was the work of the Russians whose eastward movement into Asia has sometimes been compared to the westward movement in America. Yet it took a great deal longer. The Russians required some 600 years to reach the Ural Mountains which divide Europe from Asia, and another 100 years to gain the shores of the Pacific. However, the expansion was spurred by fur traders and ore prospectors rather than by cultivators proper, and it has only been in this century, under Communist leadership, that an effort has been made to conquer Siberia for agriculture, this time under conditions of post-peasant technology.

Neotechnic Ecotypes

The neotechnic ecotypes are in large measure offspring of the Second Agricultural Revolution which had its origins in Europe, and closely paralleled the development of the Industrial Revolution, especially during the eighteenth century. This is not to say that some modern features—the application of special bodies of knowledge, the development of specialized crops—did not occur earlier or elsewhere. Mediterranean horticulture, for example, is an old pattern which foreshadowed some of the patterns which became general in the last 300 years. But it was the Industrial Revolution, with its new sources of energy and its new bodies of knowledge, which gave the new agriculture its essential impetus.

Among the chief achievements of this second agricultural revolution are:

1. [The year-round cultivation of arable land, aided by the development of crop rotation and the use of fertilizer.] Crop rotation was practiced in Flanders by the early fifteenth century, but it received a great impetus from the introduction of the so-called Norfolk system, the systematic rotation in successive seasons of wheat, turnips, barley, and clover on the same field. Similarly, fertilizer was regularly used in Southern Europe by 1400, but the systematic application of chemistry to agricultural problems was introduced by the publication of the first independent tract of agricultural chemistry (the *Agriculturae fundamenta chemica* by Johann Waltherius in Sweden in 1761). Allied with these efforts were others aimed principally at improving land or crops, through new systems of draining waterlogged lands and of conscientious eradication of weeds.
2. [Plant and animal breeding.] Although war horses and sheep had long been bred with special care, systematic breeding was now extended to many old and new varieties of grains and animals. Veterinarian studies were placed on a more scientific basis.
3. [The introduction of entirely new crops from other world areas and the growing tendency towards regional specialization on certain crops.]
4. [The introduction of new machinery,] such as the cast-iron swing plow drawn by two horses, the horse-propelled threshing machine, the horse-drawn reaper, a machine drill for planting. These steps were revolutionized still further with the introduction of the steam engine into agriculture.

The new instrumental techniques also gave an impetus to criticisms of traditional systems of land tenure and produced new ideas about the eco-

nomie organization of agriculture, including the optimal size of holdings. Under the influence of industrialism, agriculture was rationalized and transformed into an economic enterprise which aimed primarily at maximal outputs and only secondarily took account of the subsistence, replacement, and ceremonial needs of the peasantry. Hence, the introduction of neotechnic methods of cultivation also relegated the peasantry to the background. The peasantry adopted many of the innovations, but no longer produced the majority of rents and profits on which the social order was founded.¹³ As a result of these changes, the peasant now is frequently required to supply crops or products that he may not consume himself, like sisal to make rope or chili peppers to make vitamins, and similarly comes to rely on specialists producing food in other areas. Hence, he tends increasingly to become a specialist among other specialists, with each group of specialists producing goods and services to be consumed by another. The earmark of such an ecotype, then, is the tendency to produce crops which are not necessarily consumed by the cultivator himself.¹⁴ The products go into the market for sale, with the proceeds then underwriting the peasant's several traditional funds.

The major neotechnic forms of peasant ecotypes are:

1. *Specialized horticulture*, which is characterized by the production of garden crops, tree crops, or vineyard crops, in permanently maintained plots. This ecotype appeared first in the Mediterranean area, fostered by the tendency towards regional specialization along the shores of a sea linked by maritime traffic, and has historic continuity there from 1000 B.C. on. Interestingly enough, it also produced in Roman and medieval times some of the earliest quasi-scientific literature on crop management, especially with regard to vine-cultivation and olive-production. At the present time, however, this ecotype can be found manned by peasants, far beyond the Mediterranean hearth. It may be encountered in regions producing special products, such as the Rhineland or the Rhone Valley. And it occurs in the vicinity of towns and cities whose inhabitants the peasants feed with their horticultural produce: the Valley of Mexico where peasant cultivators supply the city at the center with horticultural produce and flowers or Yut'sun in Yunnan, where villagers supply a nearby town with from 30 to 40 different kinds of vegetables.¹⁴

2. *Dairy farming*, a specialized offshoot from the plow and short-cycle fallowing system of continental Europe. Dairy farms supply larger nearby centers of population with milk, butter or cheese. Fresh milk will only last overnight, but there are peasant areas which have made a success of longer shipments of dairy produce since the eighteenth century—Denmark,

¹⁴ Fei and Chang, *Earthbound China*, p. 207.

for example, supplies butter and cheese to England and now occasionally to the United States.

3. The ecotype known as "mixed farming," in which both livestock and crops are raised for commercial purposes. This type is closely allied to the preceding, and similarly an offspring of the transalpine continental European ecotype. *Balanced livestock and crop raising* would be a better designation, in that livestock is raised and fattened for the market, dairy products are occasionally sold, and crops are raised both for consumption and sale. Wheat is grown in more favored areas; rye and oats, or potatoes and sugar beets, in less clement climes. This ecotype remains closest in form to the traditional paleotechnic pattern which gave it birth, but it functions as a more specialized enterprise within the large economy, a large portion of the total output being sold in the market.

4. A fourth set of ecotypes producing some of the *crops of the tropics*, such as coffee or sugar cane or cacao. These commodities are also or mainly raised on plantations. In such areas, peasant life is dominated by the crop that has become established in the market of the area, and often suffers from the vicissitudes of market demands without sufficient capacity to balance income deficits with its own subsistence production.

The Provision of Complementary Goods and Services

The peasant is not engaged in agriculture alone. Cultivation may produce the calories a man needs, but he also has to dress himself, build houses, make containers, and manufacture the tools utilized in cultivation. Moreover, agricultural produce and livestock products must be processed, grain turned into bread, olives into oil, milk into butter, hides into leather. In looking at any peasant population, therefore, we must first ask questions regarding either the degree to which each peasant household carries on the necessary craft specialties or—correspondingly—the degree to which these specialties are in the hands of others whom he must pay in food for their specific services. Secondly, we must inquire into the degree to which the peasant processes his produce or—alternatively—passes his product on for processing to specialists. We shall be interested in the ways in which needed goods and services not produced by peasantry, but complementary to peasant production, are obtained by them. These patterns are obviously a function of the division of labor within the larger society, and the particular mechanisms which assure the pooling of the fruits of cultivation with those of other skills are consequently tied closely to the scale and scope of the societal division of labor.

The simplest situation—a limiting case because of its very simplicity—

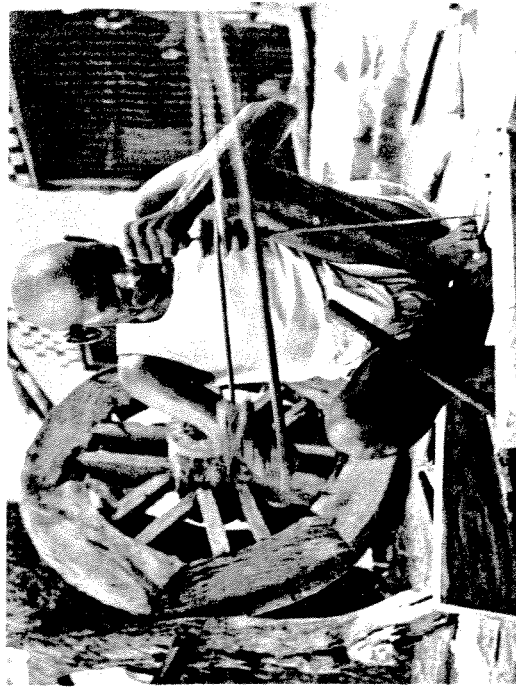
is that in which a peasant household produces most of the agricultural and craft services for itself, with only minimal ties to the outside. An illustration of this state of affairs is furnished by the South Slav *zadruga* before the second part of the nineteenth century. A *zadruga* comprised a number of nuclear families—husband and wife teams, with their respective offspring; its total membership was on the average between 20 and 40. The members of a *zadruga* were usually related, but often included adopted or unrelated members as well. Such a unit claimed common rights to fields, orchards, gardens, vineyards, livestock, and pasture, and flax- and hemp-working shops. Food, medicines, shelter, clothing, and furniture were produced within the *zadruga*. Only a minimal amount of produce, usually cattle and hogs, was sold to obtain salt and iron for implements. The *zadruga* owned and managed its inventory of possessions as a unit; members maintained only share rights. Alongside of this common *zadruga* property, individuals also maintained their own separately owned plots which could be farmed only after they had done their share of the common weal. During the nineteenth century, enforcement of taxation together with the growth of the market changed this picture. Growing demands by the tax collector for money required that the *zadrugas* begin to sell their products for cash, reinforcing a tendency towards specialization in certain products which had high market values. At the same time, as specialization proceeded, members increasingly bought other goods and services such as clothing and part of the food they had previously produced for themselves.¹⁵

The second type of exchange relationship associated with peasantry takes place within the community. Examples of this intracommunity division of labor are furnished by India and medieval Europe. Indian villages frequently form corporations in which tillable land is held by a group of cultivators. There are, however, many other people who live and work in the villages. Thus, in the village of Rampur, located fifteen miles west of Delhi, with a population of 1100 distributed among 150 households, 78 households belonging to the *Jat* caste group own all the land of the village, including the house sites on which the houses of the other castes are built. The other households follow a variety of callings.¹⁶ Some are priests, others are leather workers, still others sweepers, potters, water carriers, washermen, carpenters, tailors, blacksmiths, or merchants. These specialists are attached to particular cultivator households for whom they render specific services. Thus, for example, a carpenter makes and repairs plows, and makes plow yokes and other farming tools as well as certain

¹⁵ The *zadruga* has produced a large literature. See, among others, Dinko Tomasich, *Personality and Culture in Eastern European Politics* (New York: George W. Stewart, 1948), pp. 149–166, 189–205.

¹⁶ Oscar Lewis and Victor Barnouw, "Caste and the Jaimani System in a North Indian Village," *The Scientific Monthly*, LXXXIII, No. 2 (1956), pp. 66–81.

An Indian village carpenter preparing a simple harrow. (Photo courtesy of the Agency for International Development.)



specified kinds of furniture. The wood is supplied by the cultivator. For these services the year round, the carpenter receives a stipulated amount of grain each year. In addition to this guaranteed annual income the carpenter might receive extra payment for additional noncustomary services, such as the making of wheels, planks, or handles of milling stones. In turn, each carpenter entertains exchange relations with a barber, washerman, and potter, and pays a leather worker and a sweeper on a customary basis much in the same manner as he has been paid by the dominant cultivator. Therefore, in this village, as in many others, certain families perform stated hereditary services for others, for which they are paid in kind on a customary basis. The system of stipulated rights and services between dominant cultivators and dependent specialists is called the *jajmani* system; the dominant cultivator is the *jajman*, or patron, of the *kamin*, or worker, who performed services in return for grain.

A situation akin to that obtaining in the Indian village characterized the medieval peasant community in Europe. The community contained not only peasants, but also full-time or part-time specialists—a miller, a smith, a herdsman, sometimes a priest. In contrast to India, these were often part-time cultivators, and not distinguished from the remainder of the population by different degrees of ritual pollution or cleanliness. Looked at from the way in which peasants obtain the services of other specialists, however, the Indian and the medieval European peasant community are similar in maintaining some specialists within their own boundaries.

We have seen, moreover, that some—but not all—relations between participants in the system are fixed. There is in India, and was in medieval Europe, an area in which cultivator and craft specialist maintain the right to make free and independent decisions. The Indian craftsman has standard obligations to particular persons but he also performs voluntary services for these and others. The medieval villein had rights and duties with regard

to an overlord, but also areas of decision in which these rights and duties did not intervene.

Let us look at another system of peasant interchange, one that involves periodic encounters in a market place. A market links a set of communities which are scattered around it in radial fashion, like the planets of the solar system around the sun. Each of these communities may have its own economic specialty. Usually the mainstay of the majority of communities is some form of cultivation, and the economic specialty is carried on part-time by people who farm, and also make pots, weave cloth, produce tiles, or work leather. A few communities may in fact specialize almost entirely in the production of a particular finished craft product. Periodically, people from the various communities meet in the market place and exchange the fruits of their labors. Outside the market, each of these communities lives its own life, maintaining its own body of custom; each regards the others as strangers, as members of out-groups in sharp contrast to their own in-group. But the periodic market helps bring these separate units together, with each to some extent dependent upon the specialist activities of the other. Although the communities form independent bodies outside the market, in the network of exchanges each community is a section, and the act of exchange relates each section to every other. Hence such markets might be called *sectional markets*.

They occur, for example, in the highlands of Middle America (Mexico and Guatemala), in the high Andes, in West Africa, and in areas of Indonesia, like Java. If we compare these markets to the Indian village discussed before, we would say that in India exchange relations are carried on between separate yet interdependent sections, operating within the same community, but that in the sectional markets the segments are geographically dispersed, each organized into a separate community. Where the relations between peasant and craft specialist in India are built up from many strands of relations between two people, patron and client, *jajman* and *kamin*, in the sectional markets relations are built upon a single interest. The relation is confined to the particular act of exchange between two partners who otherwise remain relative strangers to one another. For a brief moment, the life spheres of two individuals touch, but the relation is tangent. This tangency is aided by the use of money, and each partner to the exchange is an autonomous agent with regard to the other. A weaver comes to market and sells cloth; he then wishes to buy pots. He goes to the row where the potters, from one pottery-making village, exhibit their wares. He has a choice of buying his pot from Juan or José or Pedro, depending on quality and price of the goods offered. The prices are neither completely free nor completely set: A range exists for each product; within that range there may be some price fluctuation.

This freedom of choice within a delimited range recalls the Indian

village with its set obligations for each section in the Indian village. There are similar customary "obligations" for each participating section in the sectional markets. Since the various sections depend upon one another for craft produce, they cannot switch at will from production of one product to another to maximize possible profits. Interdependence forces them to persist in their specialties over a prolonged period of time. But just as the craft specialist in the Indian village had a measure of freedom outside his set of obligations, so the participants in the sectional market—once they have met their obligations by offering a certain specialty and not another—are free to act on their own, to make decisions about how much to offer and how much to buy, and to vary the prices and qualities within a range tolerable to the over-all system of exchange.

But there is another kind of peasant market that does not depend upon the traditional interaction of customary monopolies in a closed regional system. To contrast this type with the sectional market we have just discussed, we shall call this kind of market the *network market*. We borrow the concept of the network from John A. Barnes, who has applied it to the social relations found in a Norwegian fishing community.¹⁷ In Norway there exist no enduring social groups of kinsmen built around descent from a common ancestor. Each individual, of course, has kinsmen, but—as in our society—each individual has a different set of kin. Each individual also has a different set of friends and a different set of neighbors. Barnes speaks of each person as being joined to other persons in a network. The network "is a set of points some of which are joined by lines. The points of the image are people, or sometimes groups, and the lines indicate which people interact with each other. . . . A network of this kind has no external boundary, nor has it any clear-cut internal divisions, for each person sees himself at the center of a collection of friends." We are in this case concerned not so much with kin, friends, and neighbors, but with producers and consumers linked in ties of economic exchange. In our use of the image, the points in the network are economic agents, and the lines which join them are ties of economic exchange. While the ties of kinship, friendship, and neighborhood represent enduring ties—ties which last at least for a substantial portion of an individual's lifetime—the economic ties we speak of may be purely temporary. A man may offer his pigs to B for sale one week, but to D, F, or Z in successive weeks.

The economic ties represented by our image of the network market are a great deal more shifting than those formed by a network of kinship or friendship. In a kinship network ties are between two particular persons and are relatively exclusive. Your uncle is *your* uncle, your friend *your*

¹⁷ John A. Barnes, "Class and Committees in a Norwegian Island Parish," *Human Relations*, VII, No. 1 (1954), pp. 39–58.

friend. But network market ties are inherently subject to the entry of third parties—other producers, middlemen or consumers—and the man who sells in a market network is *everybody's* friend (or everybody's enemy). Thus, the relation is affectively quite neutral. Moreover, it is subject to infinite complication.

A simple network market may exist where one peasant sells pigs, another woolen sweaters, a third hobnails for walking boots, a fourth lime, and where the pig-seller finally buys lime, the seller of woolen sweaters purchases hobnails. But, as we have said, the relations are ever subject to the entry of third parties and are therefore capable of ever-increasing complication. More and more middlemen and converters, processing this or that product, may intervene between the primary producers. Nor need the circulation of product and money be confined to the original habitat of the primary producers. Coffee raised in Colombia may furnish the raw material for the office break in Ann Arbor, Michigan; butter and cheese produced on Danish farms may make the English breakfast; machetes made in Connecticut may be sold in stores in Papanatla on the Mexican Gulf coast; German aspirin may cure a headache in Indonesia. Potentially, therefore, these chains of exchange not only involve ever larger numbers of middlemen, but they also add to the "horizontal" movement of goods and services among members of a peasant population increasingly complex "vertical" ties in which goods pass from the countryside to towns, from towns to inland cities, from cities to seaports, from seaports into overseas markets. Put in another way, exchanges of locally produced goods in a local market may form but a small range of exchanges in a regional market, regional exchanges but a small sample of a national network of exchange, national networks of exchange but a small part of international markets. The peasant may thus find himself not merely dealing with a large number of middlemen and processors, but also becoming involved in a market system with many levels of ever widening scope. Moreover, the peasant involved in such far-flung systems may discover that prices are no longer regulated by custom and by local exigencies, determined by the many-stranded relations of his local world, but by ever stronger forces of demand and supply which he may not entirely understand and which he certainly does not control.

In the sectional market, what the various producers bring to the market is determined by the traditional monopolies of the communities to which they belong. A man born into a village of potters may have a keen sense of what his product is worth; but he makes pots because he was born among potters and buys chili peppers from a man born among the raisers of chili peppers. In the open-network market, however, there is no predicting *a priori* who will offer pots for sale and who chili peppers. The offering of chili peppers and pots, as against leather goods and woolen blankets, is

no longer a matter of traditional monopolies and relations among these monopolies; it is subject to individual decision. A man may sell pots one season, chili peppers from his garden another, woolen sweaters after his womenfolk have spent the winter knitting them. Where the peasant enters an open-network market system, he enters a system in which decisions to produce are not made in advance, but are subject to fluctuations which may favor now one, now another product. The aggregate of pots or woolen sweaters in the total economy is the outcome of the aggregate of many separate individual decisions. In such an open-network market, what is produced and how much, and what is bought and at what price are determined ultimately by the relative prices of products. If demand for pots is high, more pots should be produced. If the demand for pots outweighs that for woolen sweaters, more pots will be made than woolen sweaters.

However—and this is an important *caveat*—there are constraints built into the peasant mode of existence that limit the capacity to participate flexibly in such a price-making market. If he operates within a paleo-technic system in which he himself eats part of what he produces, he will produce his food crop, no matter what other kinds of determinants may be present in the market. Suppose, though, that he operates within a neo-technic system which has caused him to produce a commercial crop. If he cannot readily switch from, say, coffee in order to plant tobacco because he cannot, except at considerable loss, cut down the coffee trees which represent a long-term investment, or because there are marketing arrangements for coffee but not for avocado pears, he will continue to produce and suffer with coffee, despite a decreasing price for coffee in the larger market and an increasing price of avocado pears or tobacco in that market. Although the larger open-network market requires continuous flexible responses from its members, the peasant response is apt to be inelastic.

Moreover, the peasant's position is determined not only by this relative inflexibility to adjust his production to price changes, but also by the changing relations the prices of his product bear to the shifting prices of other products. This rule holds within his immediate regional orbit and, even more importantly in the long run, within the wider market in which other regions and world areas compete with his produce. These price relations will change over time, and often cause gaps between the price of the agricultural produce which the peasant must sell and other products and services which he must buy. Such "price scissors" intimately affect the economic position of the peasantry. There are of course periods of prolonged decline in agricultural prices, when a given amount of produce will fetch less and less in industrial goods or agricultural labor. One such period of steady fall in produce prices, for example, was the period from about 1350 to 1500 A.D. in late medieval Europe. This fall was accompanied by a decline in land prices and land rentals, leading to decreasing revenue for

the overlords. In some regions, expectably, this development led to attempts to increase the burdens of the peasantry to maximize returns, while in other regions the patrons of peasants sought to lighten the peasants' burdens, in order to keep them on the land and to stem legal and illegal migration. Such conditions change markedly over time. Thus, a Silesian peasant holding which in 1500 would have shown a clear deficit could, 300 years later, show a clear surplus.¹⁸

As the peasant sector becomes more firmly committed to marketing through network markets and grows increasingly dependent upon prices set in those markets, it will also be affected by even quite small changes in pricing. This may have astonishing implications for the entire economy of a country. For example, it has been estimated that in the modern world

¹⁸ See Abel, *Geschichte der deutschen Landwirtschaft*, pp. 133-134.

A weekly market place in Ecuador. Such markets connect the peasant households with the economic systems of the nation and the world.
(Photo courtesy of the United Nations.)



a change of only five per cent in average export prices for primary products, including agricultural products from the so-called underdeveloped countries, would be roughly equivalent to the annual inflow into these countries of private and public capital and of government grants-in-aid lumped together. In recent decades price fluctuations have frequently been much larger than five per cent, thus causing serious economic dislocations among the peasantry, as well as in the larger society so affected.

Similarly important are short cycles of declining prices. Such cycles may characterize the agricultural year. Poor peasants may develop needs in the course of a year which force them to sell produce at hand immediately. They have no "withholding power." They frequently cannot, as wealthier peasants can, wait for the time when prices may be most advantageous. Subsequently, these same individuals may have to buy produce similar to what they sold in order to eke out their diminished supplies, often at higher prices. Hsiao-Tung Fei has given us an example from a village in Eastern China during the 1930's.¹⁹ Villagers who had to sell their rice early would borrow rice from a rice merchant, against a promise to repay the rice at interest when the rice harvest was completed. The market price of rice was \$2.3 per bushel. The borrowed rice had to be repaid at a price of \$4 per bushel. Similarly, a person short of money in October could borrow money at a rate equating one dollar lent with 162.9 pounds of mulberry leaves (which are used to feed silk worms in the process of producing silk thread). By harvest time, however, 162.9 pounds of mulberry leaves were worth three dollars, and the loan had to be repaid threefold, a system appropriately called "living money of mulberry trees."

Such exigencies may compel the peasant, in line with his consumption aspirations, to turn some special skills of his own into a part-time occupation capable of earning him money or to integrate some specialty with his agricultural cycle. Although his capacity to produce some new, other crop may be limited, his capacity to dispose of his surplus labor time offers greater flexibility. Thus, the peasants of Kaihsienkung in Eastern China not only raised rice but also silk worms in order to manufacture silk thread for the market. Fei has described the role of this supplementary craft in the life of the village. The average holding of land was about 8½ mow (1 acre equals approximately 7.9 mow). With each mow producing six bushels of rice in a normal year, the total produce of the average farm would be 51 bushels. The average household required 42 bushels for its own consumption, leaving nine bushels to sell for money. With market prices at the time of harvest ranging around \$2.5 per bushel, this surplus would yield about \$22. But the household required at least \$200 to cover

¹⁹ Hsiao-Tung Fei, *Peasant Life in China* (London: Kegan Paul, Trench, Trubner and Co., 1939), pp. 276-277.

its current expenses. "It is thus evident that life cannot be supported by agriculture alone."²⁰

In seeking a solution, the cultivator himself may look after the crops, while his wife becomes a trader, travelling widely, engaged in buying and selling small amounts of produce, as in Jamaica or Haiti. Or the peasant household may begin to sell part of its labor power to obtain wages. Thus, the Indians of the Guatemalan and Andean Highlands descend to the coast in annual migrations, just as the *aneilipimen* and *aneilipiwomen* of thirteenth-century England swept over England in search for labor at harvest time.²¹ Or some male members of the peasant household may remain on the farm, while others—able-bodied sons and daughters—go out to work for wages which are then brought back and contributed to the common pool of resources at home, as was the case in the seasonal migratory labor of prerevolutionary Russia, the *otkhodnichestvo*. A recent Soviet study of Viriatino, a Great Russian village located 200 miles southeast of Moscow, demonstrates that both the undivided great family and the pattern of seasonal emigration have persisted under Soviet rule.²² Thus, the peasant may find himself not only a participant in a produce market, but also in a market in which the one commodity exchanged for money is labor.

When the peasant becomes involved in network markets, therefore, he may be confronted with a proliferation of craft specialists and specialists selling middleman or commercial services with whom he must cope not only economically but also socially. The participants in the sectional markets discussed above confront this problem by social exclusion, grouping all specialists of a kind different from themselves and their section as strangers and potential enemies. All are members of groups, and social relationships may be regulated according to group membership. In sociological terms some are members of the in-group; others are members of out-groups. The peasant's own group is his positive reference group; the out-group is his negative reference group, with which he may entertain no more relationships than are dictated by the market.

The participant in a market network, however, must cope with the fact that every other participant in the market, peasant or nonpeasant, may play potentially both a beneficial and an exploitative role. The peasant stands, as it were, at the center of a series of concentric circles, each circle marked by specialists with whom he shares less and less experience, with whom he entertains fewer and fewer common understandings. This may

²⁰ Fei, *Peasant Life*, p. 202.

²¹ George C. Homans, *English Villagers of the Thirteenth Century* (New York: Russell and Russell, 1960), p. 136.

²² Stephen P. Dunn and Ethel Dunn, "The Great Russian Peasant: Culture Change or Cultural Development?" *Ethnology*, II, No. 3 (1963), pp. 320-338.

be put in another way. There are those close to him, peasants like himself, whose motives and interests he shares and understands, even when his relations with them are wholly tangential. They are "we others," as the Italians say, or, in Mexican parlance, *nosotros los pobres*, "we, the poor." These do not form a group characterized by enduring social relationships, but a category of people with whom interaction and understandings are possible on the basis of common premises. This is the positive reference category of the peasant. With persons falling within this category even-handed relationships are possible. Each may and will seek his particular advantage, but each will be aware of the narrow limits beyond which the seeking of advantage threatens to rupture actual or potential relationships. It is this equivalence of interests within the reference category, for example, which makes possible the personalized and sympathetic relations of *pratik* (favored seller and buyer) among market women in Haiti. There *pratik* relationships tie together producer and middleman, or middleman and middleman, or middleman and consumer. They smooth the transactions of buying and selling, of lending and borrowing; they influence price discounts and the concession of a "little extra" in a transaction.²³ Such a reference category may also include artisans who, like the peasant, make their living in small commodity production. The village smith, the town shoemaker, the scribe are not yet so removed from the life experience of the peasant that they appear as outsiders or strangers.

Characteristically, however, there is a shift of attitudes when the peasant confronts the person who has a lien on his surplus of rent or on his surplus of profit: the merchant, the tax-collector, the manager of a putting-out system who farms out craft production to the villages and collects the goods produced, the labor contractor who combs the countryside for able-bodied men. Not only do these people represent an actual or potential threat to him in his endeavor to balance the various funds that make his existence possible, but they are also connected to him by ties which are based on a single economic or social interest, usually motivated by the wish for gain. Economic interests are directly opposed, and are not counterbalanced by more personal involvements. Thus, social distance is reinforced by an absence of shared experience. Hence, where we find peasants involved in network markets, we also find that the merchant or storekeeper—even when he resides in the village—continues to be regarded as a stranger and outsider. He belongs to the peasant's negative reference category.

By the very fact that a peasantry forms an integral part of a larger society, however, the forms of peasant exchange are rarely autonomous. They may

²³ Sidney W. Mintz, "Pratik: Haitian Personal Economic Relationships," in *Symposium: Patterns of Land Utilization and Other Papers, Proceedings of the 1961 Annual Spring Meeting of the American Ethnological Society*, ed. Viola E. Garfield (Seattle: American Ethnological Society, 1961), pp. 54-63.

coexist with other forms of exchange. The *jajmani* system of the Indian peasant community thus coexisted with long-distance trade sponsored by the rulers, while the humble interchanges of the Indian villages in Middle America today coexist with transactions which link their sectional markets to the larger national and international markets. When we visit an Indian market in Mexico, for example, we see—in addition to villagers sitting in rows according to the character of their offering, patiently waiting for their purchasers—travelling merchants who bid for Indian produce or who have for sale industrial products that are manufactured outside the sectional market. In such situations, however, the community remains well-defined and integral, and we can represent the marketing system as a series of layers, one superimposed on the other. Here the wider market network affects local exchange arrangements, but does not succeed in dissolving them completely.

The Disposition of Peasant Surpluses

Where the market system came to dominate the society as a whole, however, it also dissolved the group monopolies which existed on the local level, whether embodied in patron-client relations or in the arrangements sustained within the sectional market. Here we find the marketing system penetrating into the community, and transforming all relations into single-interest relations of individuals with goods for sale. Under such circumstances, peasant marketing still does not resemble, in scale and scope, the commercial transactions familiar to us from the industrial countries of the world. The reasons for this lie, as we have seen above, in the limited productive capacity of the peasant, in his limited withholding power, in his limited purchasing power, in his attempt to keep the influences of the market at bay. Yet such peasant meeting places for commercial exchange effectively tie the peasant to the activities of the larger order, at once facilitating his requirements for exchange and threatening his social and economic balance. We note that when the peasant arrangements for the exchange of commodities become part of a market system, the market affects not merely the peasant's produce, and the goods and services he can command with it, but his very factors of production as well. It may attach prices not merely to pots and plowshares and potatoes but also to land and labor, the two factors which grant him a measure of autonomy in a context of asymmetrical relationships. That is, the market may come to affect not only the peasant's fund of profits, but also his fund of rent, and through both his precarious balance of subsistence, replacement, and ceremonial funds. To understand this more clearly we must

turn to a discussion of the several ways in which peasant surpluses are transferred to other segments of the population which hold liens on them.

For example, if we had looked at villages in eighteenth-century Oudh, in India,²⁴ we would have seen how in each village the land was held by a group of cultivator-landlords. Each such group in turn formed part of the jurisdiction of a political overlord, a *raja*. The system of assessing the returns of a village for dues and taxes, for tapping the cultivators' funds of rent, varied in different parts of India. In some areas, each cultivator paid individual dues to the overlord; in other areas, the whole village set apart a percentage of the harvest to be piled up in the "raja's heap." Whatever the method used to assess dues, each piece of land cultivated thus supported through a given year an entire pyramid of claims and counterclaims, from the lord who controlled the political entity of which the village formed a part right down to the outcast sweeper.

A similar situation obtained in the relationships between the lord of the manor and the villein in medieval Europe. The manor was not so much one large unified farm as a collection of claims to goods and services held by a particular person, the manorial lord. The lord granted land to his dependent cultivators. In return for grants of land, hunting rights, rights to pasture or woodland fuel, a dependent cultivator had to pay the lord produce or furnish labor services upon the lord's land. Each cultivator might have a quite different relationship with his manorial lord, drawing on different resources in the lord's hands, and owing different services in return. Hence, there were many different grades and kinds of dependent cultivators giving services to lords and receiving prerequisites from the lord's estate. The cultivators, moreover, might in turn furnish house sites to landless laborers in return for their labor or even lend out the land placed at their disposal to third parties without land, until each piece of land supported a complicated pyramid of claims and counterclaims. As in the Indian villages, there was a tendency to make the system hereditary, to pass from the father on to the son both the rights and duties connected with holding directly from a lord.

What these examples have in common is that some person or group of persons claims a right to the land used by the peasantry. Such a person exercises *domain* over the land, *domain* meaning ultimate ownership or control over the use of a given area.¹ Private property in land, giving the right to sell or otherwise dispose freely of a given stretch of land, a right found in our society, is only one form of domain. A person may not be

²⁴ Walter C. Neale, "Reciprocity and Redistribution in The Indian Village: Sequel to Some Notable Discussions," in *Trade and Market in the Early Empires*, eds. Karl Polanyi, Conrad M. Arensburg, and Harry Pearson (Glencoe: The Free Press, 1957), pp. 218-236.

allowed to sell land over which he has rights, or clear it of its peasant occupants, yet continue to exercise rights of domain over it, expressed in the right to exact tribute in return for the permission to use it.

Types of Domain

Three types of domain have traditionally affected peasantry: patrimonial, prebendal, and mercantile domain. *Patrimonial domain* has often been called "feudal," a term fraught with so many implications that it had better be avoided. Patrimonial domain over land is exercised where control of occupants of land is placed in the hands of lords who inherit the right to the domain as members of kinship groups or lineages, and where this control implies the right to receive tribute from the inhabitants in return for their occupancy.²⁵ The domain becomes the inheritance of a line of lords, their patrimony. Such rights can be pyramided, with lords of a higher order exercising inherited rights over lords of a lower order, and lords of the lower order exercising domain over the peasants who work the land. The peasant is always at the base of such an organizational

Peasant paying dues to landlord. (Rodericus Zamorensis, Spiegel des menschlichen Lebens (Mirror of Human Life), Augsburg edition, Peter Berger, 23 August 1488.)



pyramid, sustaining it with his surplus funds, which are delivered in the form of labor, or in kind, or in money.

Prebendal domain over land differs from patrimonial domain in that it is not heritable, but granted to officials who draw tribute from the peasantry in their capacity as servants of the state.²⁶ Such domains are not lineage domains, then; rather they represent grants of income—*prebends*—in return for the exercise of a particular office. The term *prebend*, used in this way by Max Weber, originally referred to stipends, or "livings," granted the European clergy.²⁵ This form of remuneration is characteristically associated with strongly centralized bureaucratic states—such as the Sassanid empire of Persia, the Ottoman Empire, the Mogul empire in India, and traditional China. The political organization of these empires attempted to curtail heritable claims to land and tribute, and asserted instead the eminent domain of a sovereign, a despot, whose claims overrode all inferior claims to domain. Any inferior domain was granted to officials in their capacities as servants of the sovereign.

Another form of prebendal domain, equally important, does not involve land, but income,²⁶ which the state—in form of the sovereign—derives from the peasantry. In this form of prebendal domain, the state official is given the right to attach a certain portion of the tribute due to the state and use it for his own purposes. This can be done in two ways: either by granting the rights to collect tribute in the form of taxes from certain areas to so-called tax farmers, who carry out the work of tax collection for the state and are entitled to keep a portion of the revenue for themselves; or by first centralizing the revenue of the state and then paying the officials a salary for their services. Tax farming was the dominant form of prebendal domain in the Middle East and Mogul India. Salary payment was customary in the more highly centralized state of China. Both tax farmers and salaried officialdom, of course, had many opportunities to collect funds which they never passed on to the higher authorities. Max Weber has estimated that even under the best of circumstances no more than 40 per cent of all revenue in China ever reached the central authority. The amounts varied from period to period, a variation which marks the growth or decline of government strength relative to that of its officialdom. Nevertheless, prebendal domain obviously implies a much greater degree of centralizing, a much wider scope of central authority, than patrimonial domain, which exhibits a greater autonomy on the part of the various domain holders.²⁷

A common feature of both patrimonial and prebendal domain was the degree to which their exercise was surrounded by what we have called

²⁵ Max Weber, *The Theory of Social and Economic Organization* (New York: Oxford University Press, 1947), pp. 378–381.

ceremonial. This was especially marked in the case of [patrimonial domain], where the lord often stood in an immediate personal—or at least personalized—relation to his dependent peasants. Many services rendered such a lord had ceremonial aspects, and on occasion the lord reciprocated in kind. It must be remembered that often the very relation between lord and peasant was formulated as a kind of contract in which the lord exchanged protection and access to land for the right to receive peasant dues. In thirteenth-century England, this contractual relation was stated, in symbolic terms, as a kind of compact. In the fourteenth-century lay *Piers Plowman*, Piers promises to “sweat and sow for us both,” while the lord is to “keep holy church and myself from wasters and wicked men.” The services brought by a peasant to his lord were frequently connected with major events in the ceremonial cycle, as when the peasant brought ale or hens at Christmas, eggs at Easter. In turn, the lord would offer his tenants a feast to celebrate Easter or Christmas, or to commemorate his wedding day. Similarly, the men who came to do the lord’s bidding in plowing or other duties were sometimes fed by him in return. Such a chain of gifts between the lord and his dependents served, in George Homans’ words, “to soften the sentiments of the two parties toward one another and to symbolize the reciprocity which was conceived as the foundation of their relationship.”²⁶

Where prebendal domain prevailed, similarly, an attempt was made to cloak in ceremonial the relation of the peasant to the sovereign, as the ultimate lord and protector of the land. The ruler was usually regarded as a son of heaven or steward of the supernatural forces on earth, upholding the order of the cosmos by upholding the order of the state over which he ruled. This ceremonial glory of the monarch, in turn, reflected upon all those who labored in his service and carried out his orders. Thus, until recently, a Chinese state official was regarded by the peasantry not merely as a technical administrator, but also as a ritual figure. Hsiao-Tung Fei tells us how in case of flood, drought, and locust plagues

... the people go to the district government and appeal for magical help. By ancient tradition the district magistrate was the magician of the people. In case of flood, he would go to the river or lake to demand the receding of the water by throwing his official belongings into the water. In case of drought he would issue an order to stop killing pigs and would organize a parade with all the paraphernalia suggesting rain, such as umbrellas and long boots. In case of locust plagues he would parade with the idol of *lu-wan*.²⁷

²⁶ Homans, *English Villagers*, p. 269.

²⁷ Fei, *Earthbound China*, p. 167. *Lu-wan* is the supernatural protector against the locust menace.

Such ceremonial might serve several functions. It would, as Homans suggests, serve to balance the asymmetrical relation between peasant and power-holder by compensating the peasant ritually. It would, at the same time, surround the figure of the power-holder with ritual value, thus underwriting the legitimacy of his domain as against the latent counterclaims of those upon whom such domain was exercised.

The third major form of domain over land is *mercantile domain*. Here land is viewed as private property of the landowner, an entity to be bought and sold and used to obtain profit for its owner.²⁸ As an entity to be bought and sold it is, according to the definitions of the economists, a commodity. Karl Polanyi has pointed out that this is a legal fiction, since land is a part of nature; it just is and is not *produced* to be sold.²⁹ Mercantile domain, like any other domain, asserts an overright over land, and like the preceding domains discussed above, the right to collect tribute in return for its use. This tribute is commonly called rent. Mercantile domain differs from the preceding forms of domain, however, in treating the land and the potential income that can be derived from it as an imaginary sum of money. Since land is treated as a commodity to be bought and sold, it has a price like any other commodity. Moreover, land—once bought—can be used to produce other commodities for sale, and its purchasing price can be reckoned as capital investment. If the owner lets the land to another, he can convert the tribute which he would receive under the older forms of domain into money rent, the amount of which would depend on the demand and supply for the commodity land in the given area. Here rent takes on the form of interest payment for invested capital—as capitalized rent, or as Sir Henry Maine called it, as competition rent.³⁰ Moreover, under such a form of domain, a landowner can borrow money, using his land as a security. He can mortgage his land, and in case of nonpayment the money lender can take over the right of domain to the land, attach the property, and sell it to the highest bidder to recover his money.

These three forms of domain over land—patrimonial, prebendal and mercantile—need not be mutually exclusive; in most actual cases they exist together. It is rather their combination, their “mix,” and the relative importance of the different forms which determines the organizational profile of a particular social order. Thus, patrimonial domain dominated the organizational profile of medieval Europe north of the Alps. But it coexisted with prebendal domains granted to both secular and ecclesiastical lords by the sovereign, with frequent sales of patrimonial rights by one patri-

²⁸ Karl Polanyi, *The Great Transformation* (Boston: Beacon Press, 1957), p. 72.

²⁹ Sir Henry Maine, *Village-Communities in the East and West* (New York: Henry Holt and Company, 1876), p. 182–184.

monial lord to another, with transfers of use rights to land (including the corresponding duties of paying tribute to the lord who held domain) on the part of peasants, and even with leases and charges of competitive rents.³⁰ Nevertheless, the patrimonial structure prevailed until the marketing system came to dominate society as a whole and increasingly transformed patrimonial into mercantile domain after the thirteenth century. In the East, on the other hand, where prebendal domain was long dominant, there were always periods and places where prebendal lords were able, either legally or illegally, to render their official domains heritable and/or marketable.

Moreover, the different ways of organizing social relations might occur at different levels. Thus, a lord could maintain patrimonial controls within the boundaries of his domain, but run his domain as a capitalist enterprise, a pattern which was followed in East Germany, in Russia, and in Latin America from the sixteenth to the nineteenth century. Or a lord might control some domains patrimonially, while holding others as prebends. Similarly, there are interstices of the present-day capitalist order in which patrimonial domains continue to exist, though patrimonial lords may have to treat their patrimonies in market terms in order to survive within a competitive situation. Moreover, where the lord was willing to transform his rights to labor and payment into monetary forms, he often sped the development of patrimonial into mercantile domain.

The mere fact that various forms of domain can coexist in the same social order, though in various mixes from society to society, should make us cautious in trying to rank these forms of domain on an evolutionary scale. This caution is reinforced when we realize the different forms of domain may coexist with any of the three arrangements for marketing which we have discussed above. We must realize that the forms of domain are but *forms*; it is the use to which they are put that is of the major social consequence. Thus, mercantile domain has been used differently by land owners truly bent on improving the very process of production and by those merely concerned to maximize their monetary returns without changing the bases of production. In Northwest Europe, the first alternative was taken, and inefficient and ineffective producers were eliminated in favor of efficient and effective ones. Recalcitrant paleotechnic peasants were either coerced to adopt new methods of production or were replaced forcibly by new groups of cooperative neotechnic producers. This change could be accomplished only in a setting of ever-widening markets, which provided an ever-growing fund of capital, and transformed all claims to domain into negotiable mercantile domains.

³⁰ Sylvia L. Thrupp, "Economy and Society in Medieval England," *The Journal of British Studies*, II, No. 1 (1962), pp. 5-8.

A different course was followed in those areas of the world in which either patrimonial or prebendal domains retained their strength, and in which mercantile domains were few, or in which the goods produced on patrimonial or prebendal domains entered the network market only partially or occasionally. Such areas were the Orient and Latin America. Whereas in expanding Northwestern Europe the claimants to mercantile domain invested their capital in transforming the paleotechnic ecotypes, and thus began to share in the risks of production, in these other, more traditional, areas, they acted to maintain the paleotechnic base of the system. They thus passed on the risks of production to the present, and merely rendered their means of collecting payments more efficient. This system has been called rent capitalism. Under it the rents attached to the various factors of production which the peasant manages can be accumulated, but they can also be sold in whole or in part to other interested parties. Under this system

the peasant productive economy became conceptually split into a system of production factors, for each of which a special and usually uniformly valued part in the gross proceeds was calculated. The following were, and as a rule still are today, held to be important factors of production: water (which usually remains combined with land in areas of sufficient rainfall or ample water supplied from rivers), seed, work animals (and other inventory, which is scanty enough), and finally human labor.³¹

The nadir of this system is attained, as in part of the Near East, "when the sharecropping farmer does not touch more than a meager share of the work of his hands." But it is even possible to split up farm work itself (as in plowing, harvesting, sometimes care of trees, and so forth) and to pay for it with appropriate shares of the product. The concept of the operating unit begins to dissolve into a series of individual tasks, and corresponding claims on income. Such a process of splitting into several tasks to which independent monetary values are assigned brings the peasant into debt for each of the various factors of production which he requires to make a crop. He may have to pay to get water, and if he does not have the money, he may have to borrow it and pay interest on it; or he may borrow money and pay interest to get tools or borrow work animals and pay a charge for their use.

Such a system quickly leads to attempts to turn the various titles to income into debt titles. Interest rates of 100 or 200 per cent are not uncommon. The reasons for such high interest rates are several, partly economic,

³¹ Hans Bobek, "The Main Stages in Socioeconomic Evolution from a Geographic Point of View," in *Readings in Cultural Geography*, eds. Philip L. Wagner and Marvin W. Mikesell (Chicago: University of Chicago Press, 1962), p. 235.

partly political.¹ One economic factor is a product of high population densities and relative scarcity of land, especially in zones of permanent farming with hydraulic agriculture: The demand for land drives up its price, and hence both the rents charged for its use and the rates of interest on loans incurred in the course of such use.² Another economic factor is that the poverty of the population itself compels cultivators to use the income derived from production to feed themselves.³ Poverty implies that subsistence takes priority over investment, and renders many cultivators unable "to make ends meet." Hence they must seek to get money through loans, and often must use such money to cover their subsistence. The moneylender, however, does not get his benefits from the consumption of his creditors, but from their production.⁴ Both the aggregate demand of many cultivators for loans and the desire of the moneylender to maximize his returns from their production tend to drive up interest rates.⁵ Lending to such a population with only a minimal capacity for repayment, moreover, freezes capital; that is, the moneylender cannot always or easily recover his money whenever he needs it. This situation again acts to drive up interest rates.

But there are also political reasons for this phenomenon.⁶ Where there is political instability, there is also a steady turnover in those who hold claims to land and money.⁷ Landlords and moneylenders must thus attempt to gain as much from their claims during their lifetime or their time in office as they can. This is also true of systems in which tax farmers hold prebendal claims to taxation of peasantry, and where they can increase their share by increasing the total of the surplus extracted.⁸ An additional factor may be the existence of a class of landlords and moneylenders whose real interests lie in living in urban areas and in assuming political office, and who see the exploitation of the countryside as a quick way of accumulating wealth to use in their political and social ascendancy.⁹ Such a system is self-limiting in that it reduces incentives by reducing the cultivating population's consumption to the biological minimum. Thereupon the cities benefit from the surpluses drained off from the countryside by urban rent-collectors, without generating expanded rural productivity.

The decisive contrast between the wholesale transformation of agriculture under the aegis of mercantile domain in Northwestern Europe, when compared with the relative stagnation of cultivation in areas dominated by rent capitalism, such as the Near East and India, lends strength to our assertion that although the *form of domain* as such is relevant to the way a peasant ecosystem is organized, providing the pattern for social relations,¹⁰ it is *the way the pattern is utilized by the power-holders which is decisive in shaping the profile of the total system.*¹¹ Mercantile domain may be used to keep cultivation technically stagnant, to maintain paleotechnic

peasant ecotypes, while drawing off whatever funds of rent and profit the peasant is capable of generating under these conditions. Or it may be employed to assail not only the surpluses generated in production, but the very character of that production itself. Thus, mercantile domain may exist in social orders in which the peasant forms the basis of all production. There it may order the *social relations* governing ownership and disposition of surpluses without, however, touching the productive base itself. On the other hand, it may, in a period of growing industrialism, become the main instrument of coercion in shifting use of the land from producers to neotechnic producers, affecting the very basis of production.

In the twentieth century a fourth type of domain has made its appearance, especially in the Soviet Union and Soviet China, but also in other countries which have undergone a major agrarian revolution, like modern Mexico or Egypt. We shall call this *administrative domain*. It shares certain features with prebendal domain, in that it is the state which claims ultimate sovereignty over the land, and the produce of the land is taxed by the state through a hierarchy of officials.¹² Yet where prebendal domain has left agricultural production largely untouched, contenting itself with drawing upon the funds of rent produced by the peasantry, *administrative domain* affects agricultural production as well as the disposal of its produce.¹³ Again, this is not an altogether novel principle in the organization of rights over land and labor. Experiments with outright state ownership and management of land have been carried on in several centralized bureaucratic societies, but this has always been a minor pattern, dominated by the spread of prebendal domain granted over a peasantry which made its own decisions in the process of production. In the twentieth century, however, we have witnessed the rapid spread of state-owned farms which are also managed by a group of technicians furnished by the state, leaving little discretion to the individual farming unit.

In the Soviet Union the dominant form of such administrative domain has been the *kolkhoz*, in which the major products, usually cereals, are farmed collectively, while each kolkhoz worker still retains a small "private" plot on which he grows subsistence crops or perishable foods that can be sold in local markets. Recent studies have shown that the kolkhozes are not an unqualified success. The private plots allotted to cultivators have proved vastly more productive than the collective farms. Although constituting only 3 per cent of the total sown area of the Soviet Union, these private holdings produce almost 16 per cent of the total crop output and nearly half of all livestock products. At the same time, the Soviet cultivators invest about two-thirds of their labor on the collective farms, one-third on their private plots. Thus, 30 million tiny plots continue to produce a major fraction of total output and absorb a considerable share of available labor

A Soviet government agricultural official talks to members of a kolkhoz. The kolkhoz combines collective and private farm allocation; the sovkhos provides for no connection of the laborer to the land. (Sovfoto.)



a base of power independent of peasant agriculture.³² Such a base of power may be military; or it may be commercial, as when a major source of income is derived from overseas trade; or it may be industrial, so that peasant surpluses are not the only major source of revenues. Put in another way, the capacity for experimentation of a paleotechnic system is limited; all the social and economic eggs are in one paleotechnic basket. Only in a situation where effective alternative options exist can a shift to a new order be made. In such a shift the form of domain is important in patterning the kinds of social relations which govern the transitional period and determine the structure of the emergent society. In and of themselves, they are, however, mere organizational patterns. The way in which these organizational patterns are employed is a matter of social organization and the organization of power, topics to which we shall turn in the next chapter.

power.³² In contrast, on the *sovkhos*, the other form of the administrative domain in the Soviet Union, farms are worked by squads of agricultural laborers who have no other connection with the land. Similar experiments with administrative domain have been carried out in China, of which the most recent has been the creation of communes, which similarly tried to group together large numbers of cultivators into production and consumption brigades under state auspices. In Mexico, most of the land expropriated after the Revolution was granted to communities of cultivators, constituted as corporate units, or *ejidos*. Each *ejido* in turn was to consist of inalienable plots granted to particular families. In a few areas, however, especially in the highly productive cotton-growing region of the North, the government has experimented with outright administrative domain over the lands allocated to cultivators, who are theoretical share-holders in a publicly administered corporation.

[Such wholesale reorganization of the paleotechnic peasant order, however, is possible only in special circumstances.] To accomplish this, two factors appear to be essential. First, there must be some kind of frontier which can serve as a safety-valve for populations displaced from the land through the introduction of methods which feed more people with less labor.³³ Such a frontier can be geographic, as when surplus population can be displaced to new lands, or it may be occupational, as when a growing industrial complex proves capable of absorbing men without land. But the existence of a frontier is not sufficient. The controlling group that initiates change in the ecotype towards neotechnic norms must possess, secondly,

³² D. Gale Johnson, "Soviet Agriculture," *Bulletin of the Atomic Scientists*, XX, No. 1 (1964), pp. 8-12.