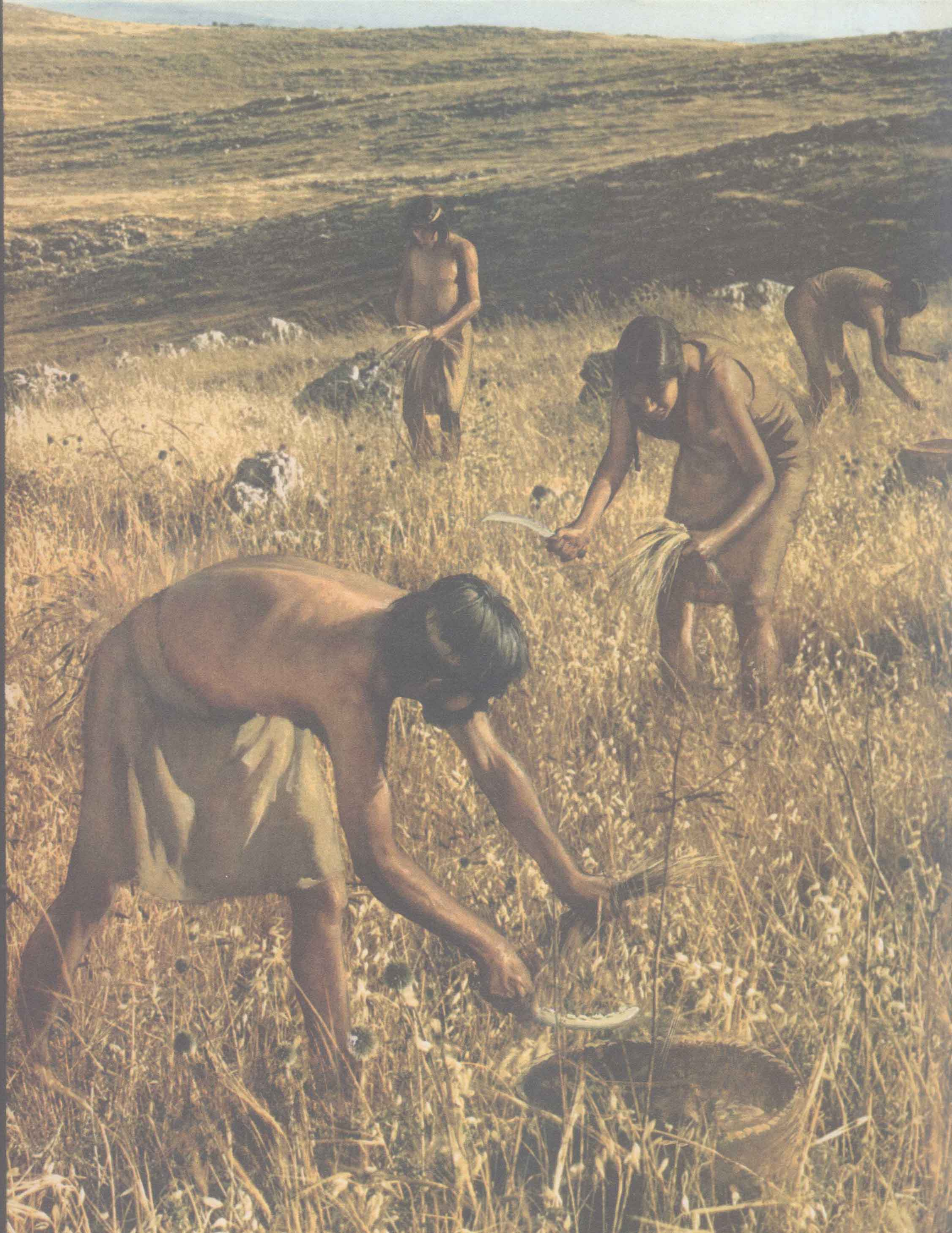


# The first farmers





# The First Farmers



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The Emergence of Man

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# **The First Farmers**

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by Jonathan Norton Leonard  
and the Editors  
of TIME-LIFE BOOKS

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TIME-LIFE BOOKS  
New York

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**The Cover:** Ancient farmers of the Near East harvest a ripe stand of newly domesticated wheat. Using flint-edged sickles made of bone, they toss their harvest into woven baskets. Because the wheat is so recently developed from the wild variety, which scatters its seeds easily, the men and women take care to hold the topmost, grain-bearing part of the plant as they cut it. The figures were painted by Burt Silverman on a photograph of Near Eastern wheat that is almost exactly the same as that grown by the first farmers in 8000 B.C.

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# Introduction

Of all the cultural innovations created by man, certainly one of the most profound in its effects has been the invention of agriculture. This seemingly simple discovery of planting, cultivating and harvesting food provided the basis for larger populations and opened the way to all of the complex societies and higher civilizations that followed. Why and how it came about after more than a million years of hunting are questions that archeologists and natural scientists are today trying to answer.

Although interest in the origin of food production is as old as the interest in prehistory itself, it is only in recent decades that intense research has been undertaken on the origins of farming. Research since 1948 has focused attention especially on the Near East, where wheat and barley, sheep, goats, pigs and cattle had all been domesticated by about 6000 B.C.

Yet the very newness of this work imposes limitations on the reconstruction of what actually happened. Only a small number of sites have been excavated; furthermore, few have undergone the extensive clearance necessary for a complete understanding of the life and cultural activities of the farmers themselves.

Although research has so far concentrated on the initial steps in food production, the spread of agriculture is also an important study—with broad implications. The gradual expansion of the agricultural colonizers was not without cost. Game was driven off or killed, forests and grasslands were slashed and burned, plowed up or overgrazed.

The arrival of the farmers meant the departure or gradual extinction of the bands of hunters and gath-

erers. With what dismay these simple hunters must have watched the transformation of their beloved hills and valleys, and with what distaste they must have viewed men willing to forgo their freedom of movement for the security of the barnyard!

The farmers, on the other hand, challenged by new needs and opportunities, must have welcomed the rise of amenities undreamed of previously, with an affluence potentially available for the community as a whole: surplus food not only to ensure the needs of the local people but to exchange with others for coveted objects and raw materials; innovations in technology and architecture; and systems of irrigation and improved transport.

Thus, farming activities not only caused a change in the countryside but they also fostered the growth of a biological and psychological environment that had formerly been experienced only in those rare areas where an accidental richness of wild-food resources had permitted large groups to settle permanently in one place.

With the rise of agriculture around the world, however, man had to deal increasingly with problems of sanitation, pollution and communicable disease, and psychologically he withdrew from the natural world into the more subtle and threatening world of unseen social pressures. Within the expanding complexities of this new social universe, with all its jealousies and passions, he had to redefine his relations to his fellow men and to the unseen forces around him. In the end, this need led to perhaps his greatest achievements: a conscious sense of moral order and the concept of law.

**Robert H. Dyson Jr.**

University Museum  
University of Pennsylvania



# Chapter One: The Near East—Cradle of Agriculture





The few mud-walled, thatch-roofed huts stood in the bend of a shallow stream, a lonely cluster of life in an oak-dotted plain that sloped gently up to snowy mountains. As far as the eye could reach, there was no other settlement. Downstream a flock of goats herded by a young boy was grazing on sun-shriveled herbage. Closer to the village several women carrying baskets and holding wooden sickles set with sharp slivers of flint moved among irregular patches of tall yellow grass, each stalk of it tipped with double rows of tawny seeds. The grass—a primitive wheat—looked little different from similar grasses growing wild on the distant mountainsides. But it was different: it had been deliberately planted by the villagers, not sown haphazardly by the wind.

Suddenly a cry from the boy upset the village calm. The men picked up stone-tipped spears; the women working in the tall grass grabbed their partially filled baskets and began to run toward the village. What disturbed the villagers could be seen out on the plain: an approaching file of men, women and children—some 20 individuals in all. They were strangers, and their rugged appearance showed that they were hunters. One of the men had the carcass of a newly killed wild sheep slung over his shoulders. When the newcomers neared the stream bank opposite the village, they held up their hands to demonstrate their peaceful intent. They had not expected to find people living in mud huts where only a year before there

had been no dwellings at all—only a place for wanderers such as they to camp.

As nomads and villagers stood eying one another across the stream, one of the strangers pointed to the sheep carcass and then to the baskets of seeds. The villagers understood his meaning, and a woman brought a basket of wheat and set it down near the stream bank. The hunter carrying the sheep held up two fingers, and the woman placed a second basket beside the first. The strangers conferred in a huddle; then the hunter laid the carcass down. A man from the village waded across the stream with the two baskets of grain and touched the sheep lightly. The hunter touched the baskets in turn. The bargain was closed. The villager carried the sheep back to his people, and the wanderers shouldered the baskets of wheat and marched off among the oaks.

This encounter is of course imagined, but there is little doubt that it could have happened. There must have been many such episodes in the ancient Near East when bands of nomadic hunter-gatherers exchanged wild game for villagers' grain and thus brushed against a marvel that would soon change the face of the earth. The villagers, crude and difficult though their life may have been, lived on another plane of existence. They were among the world's first farmers, people who had learned to cultivate a food-producing plant—not simply to gather naturally occurring plant food but to make it grow in a place where it did not grow ordinarily.

This seemingly simple advance first took place in about 8000 B.C. in the Near East, somewhere in or near the Fertile Crescent, the hilly arc of inhabitable land that curves around the north of the empty Ara-

*It was in hills like these in Israel that nomadic bands of hunter-gatherers began settling down 10,000 years ago. What attracted the wanderers to such areas was a bountiful supply of wild barley and wheat. Once they learned how to plant and raise these grains themselves, they ushered in a new way of life for mankind—farming, the basis of civilization.*



bian Desert. Today the astonishing way in which this advance took place is becoming increasingly clear as archeologists fine-comb the soil and sand of ancient agricultural sites. From the mud-walled ruins of farming villages that were far more advanced than anyone had even dreamed for so early a date, and from evidence as seemingly ephemeral as the husks of seeds and the bony cores of animal horns, the investigators have been able to piece together one of the greatest and most exciting episodes in human evolution, the birth of agriculture.

If it had not been for the first farmers, there would be no civilization today, and man would doubtless still be a hunter-gatherer, roaming the face of the earth in small bands. When those early agriculturists began domesticating wild wheat and barley and the sheep and goats on the hillsides around them, they were, in a sense, also domesticating themselves. Nothing as revolutionary had happened to man in a million years or more—certainly not since his *Homo erectus* ancestors had developed speech, mastered fire and learned to hunt together in effectively cooperating groups.

Within three or four thousand years after farming appeared in the Near East, it was also invented independently in at least three other parts of the world, most notably North China, Mexico and Peru. Spreading from these centers to neighboring regions, it worked a gradual but dramatic change in man's status on the planet.

Before the rise of farming and its related activity, the breeding of domestic animals, man was a rare and inconspicuous inhabitant of the earth. Like the other animals, he lived on the casual bounty of nature, adapting to the natural environment around him

and changing it only in minor and transient ways in his efforts to increase his supplies of food.

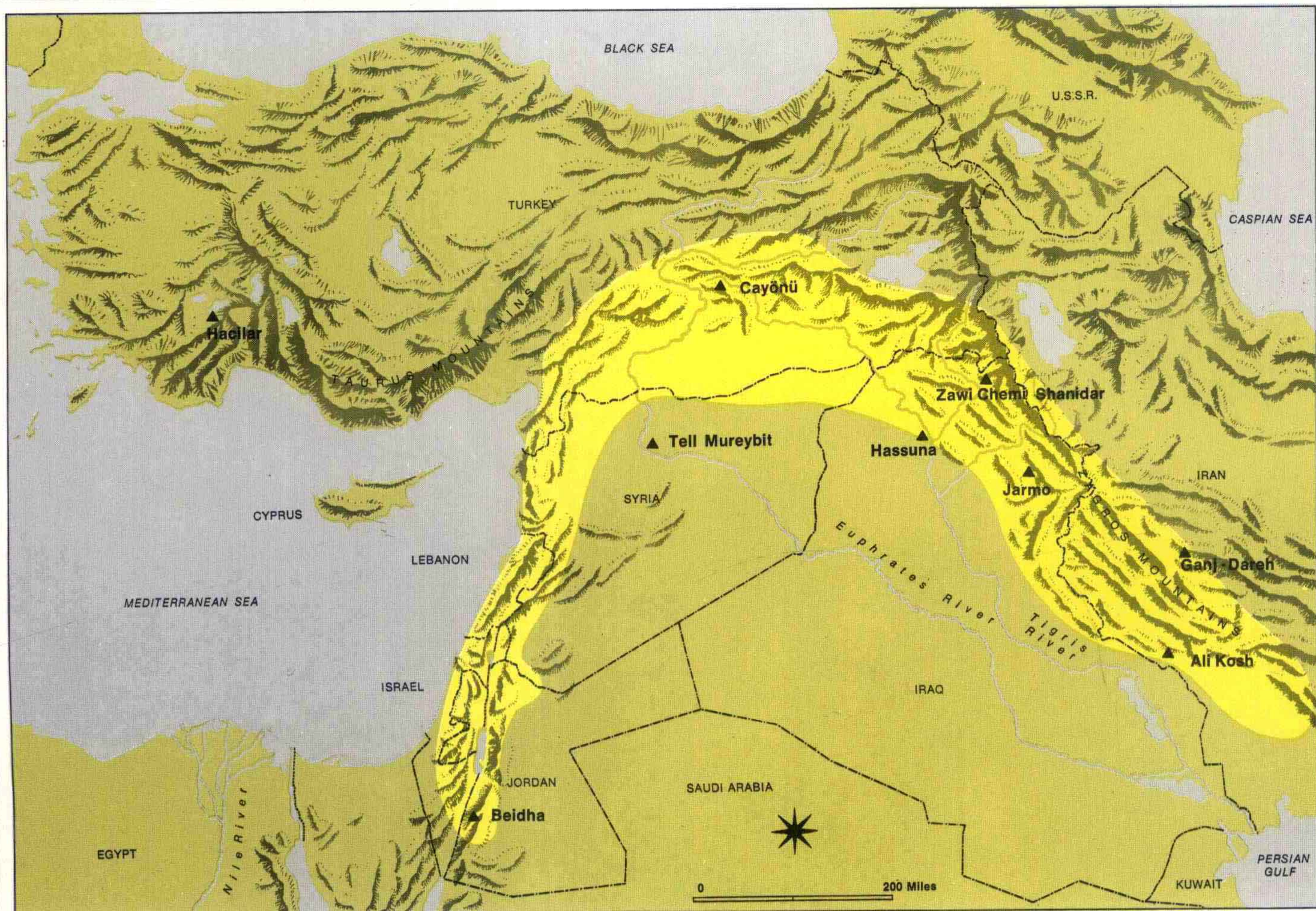
Farming transformed man into an entirely different kind of organism: one with many other organisms—plants and animals—subjected to his will. His first hesitant steps in this direction produced amazing results. No longer did he merely adapt to the natural environment; now he began to alter it, and in major ways. Farming gave him the power to shift the balance of nature so that his own ecological system would provide more of what he needed. For example, by encouraging the growth of a relatively few food plants, like wheat and barley, the farmer at the same time discouraged many inedible wild plants that, unless weeded out of the fields, would absorb much of the moisture and many nutrients in the soil and might even choke out the food crops entirely. In much the same manner, he altered the balance of animal life in many areas, either by domesticating certain food-producing animals and directing their evolution or by discouraging the activities of other creatures that harmed his crops or killed his herds.

Finally, when the farmer had achieved an environment suited to his needs, he extended it to land where it could not naturally exist. In forest country, for instance, he cut down trees to open up space for the light-loving plants he cultivated; in arid regions he devised ways to bring the life-giving waters of rivers to acres that otherwise would yield nothing but scrubby brush. Eventually he even extended his man-made environment to steep mountainsides and, by carving them into terraces that would hold patches of soil, transformed them into productive farmland.

The result was the production of more food within a given area. And once man had a much larger food

*Text continued on page 14*





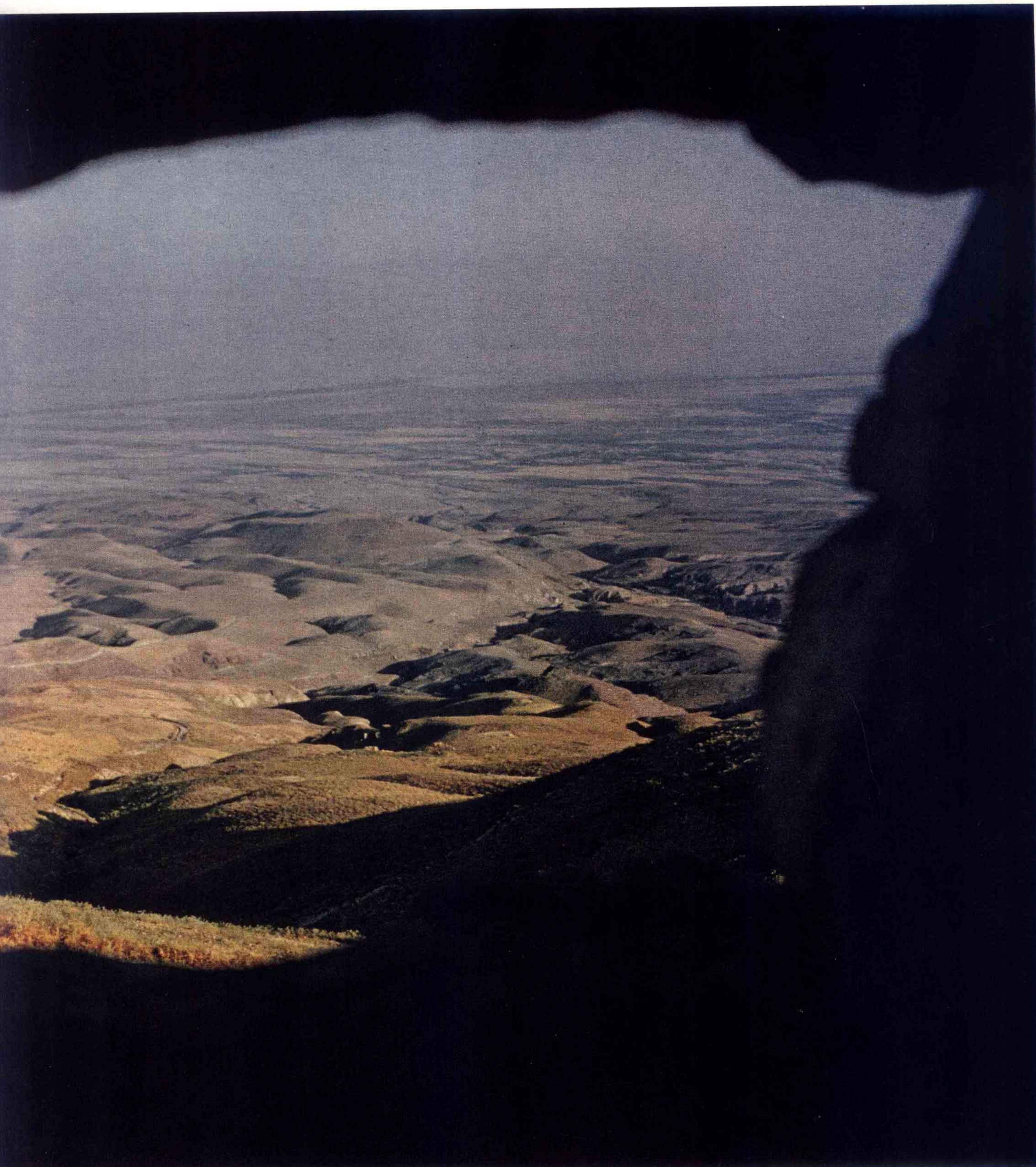
This topographical map of the Near East shows the hilly flanks where agriculture began in 8000 B.C. and the overlapping territory where the barley and two types of wheat that the early farmers first domesticated still grow wild in massive stands (yellow area). The hilly flanks region is made up of the foothills of the Zagros and Taurus mountains and the uplands of northern Israel, and is so called because it flanks the Fertile Crescent, the strip of productive land curving from Iran around Iraq and Syria to the Valley of the Nile. Sites of some of the villages associated with early farmers and referred to in the text are indicated by triangles.





*Seen from a cave, the Jordan Valley, site of some of the earliest agricultural settlements in the world, unfolds below hills that even today support*





nds of wild grain. Groups of prehistoric farmers were drawn from the sloping terrain into the valley by its patches of well-watered, fertile soil.



supply ready at hand, the groundwork was laid for civilization. The tempo of human life speeded up, as if an oxcart were hitched to a jet engine. Farming greatly accelerated developments that had already started to appear among certain hunter-gatherers living in favored places: it encouraged permanent settlements in place of nomadic wanderings, inspired the invention of new tools and techniques, and stimulated the elaboration of arts and crafts. It triggered an explosive increase in population, encouraging not only larger families, but large and complex societies, which in turn fostered government, trade and communication among great numbers of people.

After the Neolithic Revolution, as anthropologists call the development of farming, man was no longer an inconspicuous rarity. Armed with his new skills and power, he became not simply the dominant animal on earth but the planet's dominant form of life.

Today farming feeds most of the world's inhabitants, but until 8000 B.C.—only yesterday in the million-year history of humanity—all people on earth were hunter-gatherers. Indeed, for something like 99 per cent of his time on earth, man led such an existence. In a few places where nature was especially bountiful the hunters settled down in villages, but the overwhelming majority lived in small bands that were forced to wander restlessly in search of food. When a band had killed or driven away most of the game animals in its vicinity and depleted more attractive vegetable foods, it went somewhere else, guided by knowledge of seasonal products and animal habits. For a long time scholars generally assumed that these ancient foragers led a precarious existence, forever hovering on the brink of starvation. A phrase of the 17th Century English philos-

opher Thomas Hobbes—that people in a state of nature lead “nasty, brutish and short” lives—was repeated in learned circles almost to the present day.

Actually, to judge from recent studies of existing hunter-gatherer societies, this way of life is not as bad as might be supposed. Observations of the affairs of the Kung Bushmen of the Kalahari Desert in South Africa, for example, have yielded a great many surprises. Although the Kung live in a wasteland that no one else wants—a semidesert with only six to nine inches of rain per year—they seldom suffer from lack of food. Some 60 to 80 per cent of their diet is of vegetable origin. Their single most important foodstuff is the hard-shelled, protein-rich mongongo nut, the product of a drought-resistant tree, but the Bushmen also eat 84 other vegetables of varying attractiveness. During the comparatively rainy summer, January to March, they eat only the fruits, berries and melons they like best. During the dry season, May to October, they fall back on roots, shoots, bulbs and other less palatable, though no less nutritious, foods, especially after they have exhausted all the mongongo nuts within easy reach of water holes that have not yet gone dry. If really pressed, they can carry water with them on trips to draw on nut trees lying at a greater distance.

Nearly all the Kung's vegetable food is gathered by the women. The men may pick up a few nuts occasionally, but their normal job—when they feel like exerting themselves—is hunting. A few men do a great deal of this physically demanding work; others do little. The successful hunter earns prestige by bringing a lot of meat into camp, but he may not get much more meat to eat than anyone else. A traditional sharing system distributes it to everyone.



Anthropologist Richard B. Lee of the University of Toronto, who made an elaborate study of the Kung Bushmen a number of years ago, estimates that they eat on the average 2,140 calories per day and 93.1 grams of protein, more than enough for such small people (Kung men average only five feet in height). The labor required to earn this ample diet is not great. No one works regular hours, but Lee estimates that a woman can gather enough food in one six-hour day to feed her family for three days. Men who really like to hunt or are eager to improve their social status by bringing back meat to vary the otherwise monotonous diet may spend a good deal of time searching for game, but the most enthusiastic hunter Lee encountered worked only 32 hours per week.

Many other nonagricultural tribes lead similarly easy lives, eating crudely but well and having plenty of time left over for dancing, religious rituals, ceremonial visits and sometimes less innocent pastimes such as gambling and warfare. There is no good reason to doubt that the ancient hunter-gatherers followed roughly the same pattern, with differences dictated by the regions in which they lived and the kinds of wild food available.

This ancient way of life, with its freedom, its leisure and its usually abundant supply of rough but nutritious food, seems attractive enough to make anthropologists wonder why it was ever abandoned by the hunter-gatherers of prehistoric times. There must have been compelling reasons to force men to take up the endless drudgery of farming.

Until fairly recently, most scholars agreed that the initial shift from foraging to farming was motivated by natural forces. A widely accepted theory, pro-

posed in the 1930s by the British authority V. Gordon Childe, laid the change-over to a shift in climate at the end of the last ice age, around 10,000 B.C. According to Childe, fertile, well-watered areas thinly inhabited by hunter-gatherers dried up as the glaciers retreated. Many rivers stopped flowing. Deserts of shifting sand replaced forests and grasslands. In order to survive, the hunter-gatherers were forced to take refuge in a few remaining well-watered places, such as the Valley of the Nile in Egypt. Crammed together there, these refugees were stimulated by necessity to cultivate food-producing plants instead of relying on nature's limited bounty. They also fed and protected some of the wild animals driven into the oases by the scarcity of water elsewhere.

This theory was challenged in 1960 by Robert J. Braidwood of the University of Chicago, who pointed out in a paper based upon 10 years' work that the changes known to have taken place in the Near Eastern climate were not nearly so drastic as Childe had assumed. Moreover, he argued, the transition to farming was less likely to have occurred in a crowded river valley or an oasis than in some other part of the Near East where conditions were particularly favorable—where men and wild but domesticable plants and animals existed side by side. And since the earliest agricultural settlements then known—those of the Valley of the Nile, dating from around 4500 B.C.—were already fairly advanced, Braidwood conjectured that farming probably originated much earlier than anyone believed.

To test his theories, Braidwood planned an expedition that would be a departure from most previous ones to the Near East. Earlier archeologists, searching mainly for treasures with which to enrich the





*Sparse vegetation, picked at by scattered sheep and goats, is all that remains of prehistoric agricultural efforts in an eroded, overgrazed region of*