THE CREATION OF TWO WORLDS

To understand the magnitude of what Columbus did when he crossed the Ocean in 1492, we must look back to the beginnings of world history. Here, we are going to examine the breakup of Pangaea and the creation of two human worlds around 10,000 years ago. These events will give us the background we need to consider the Columbian impact.

I. The Breakup of Pangaea and the Decentralization of Evolution

A. The earth came into being several billion years ago. It is fifth in size of the planets that rotate around our sun.

B. Some 225 million years ago a single supercontinent, called Pangaea, contained all the world's dry land. The existence of a single original continent has been proved in part by:

1. Fossil Distribution
2. Rock Sequences
3. Glaciation

C. This continent began to break apart around 180 to 200 million years ago forming the great landmasses of Eurasia, Africa, Australia, Antarctica, and the Americas.

D. On these fragments of Pangaea, life forms developed independently, and in may cases uniquely.

E. To cross these undersea seams is to step from one of those paths to another, almost to step into another world.

F. The breakup of Pangaea and the decentralization of the processes of evolution began 180 or 200 million years ago.

II. Human Development and Culture

A. The most adaptable and therefore most widely distributed of today's large land animals are human beings, and this has been true of the members of the species Homo Sapiens and their hominid predecessors for a very long time.

B. Human Origins (first in East Africa)

1. 4 million BCE: Australopithecus

    a. 4 feet tall
    b. gathers fruits and nuts
    c. brain size, 700 cubic centimeters
    d. bipedal
    e. nuclear families

2. 2.5 million BCE: Homo habilis (“handy man”)

    a. first hominids to use tools (chipped stones)
    b. scavenges for meet
    c. brain size, 800 cubic centimeters

3. 1.7 million BCE: Homo erectus (“upright man”)

    a. brain size, 1000 cubic centimeters
    b. more sophisticated tools
    c. three main advances: shelter (caves/simple houses); clothes; fire

4. 1.5 million to 500,000 BCE: Homo sapiens (“thinking man”) [these are designated as “archaic” and then later “Neanderthal” and are supplanted by Homo sapiens sapiens)

    a. further develop and use three advances of Homo erectus to spread
    b. By 750,000 BCE in Europe and China

5. 100,000 BCE: Homo sapiens sapiens appear

a. vie with other hominids until about 40,000 - 30,000 BCE
b. by 40,000 - 30,000 BCE alone among hominids on earth
c. by 40,000 - 30,000 BCE all over Africa and Eurasia

C. What made hominids and humans so successful?
While other creatures had to wait for specific genetic changes to enable them to migrate into areas radically different from that of their ancestors –had to wait for incisors to lengthen into daggers before they could compete successfully, or had to wait for hair to thicken into fur before they could live in the north –humans and hominids did not.

D. Hominids and humans made not a specific but rather a generalized genetic change: They developed bigger and better brains wired for the use of language and for the manipulation of tools.

E. That growth of nerve tissue crammed into the skull began several million years ago, and enabled the hominid creation of culture. "Culture" is a system of storing and altering patterns of behavior not in the molecules of the genetic code but in the cells of the brain. That change made the members of the genus Homo nature's foremost specialists in adaptability.

F. Humans developed at the core of Pangaea, Eurasia plus Africa, and yet there were whole continents and myriads of islands we had not explored or settled 40,000 years ago.

G. These early humans were about to do something of the same magnitude as moving from earth to another planet. They were about to leave their Old World of life forms with which their ancestors had lived for millions of years and go to worlds where neither humans nor hominids nor apes of any kind had ever existed, worlds dominated by plants, animals, and microlife whose forms had often diverged sharply from the patterns of life in the Old World.

III. The Movement from Eurasia to Australia and the Americas

A. 40,000 years ago, humans walked from Africa and Eurasia into Australia.

B. Around 12,000 to 15,000 years ago humans walked into North America by way of the Beringian land bridge that connected Siberia and Alaska during the last ice age.

C. 10,000 years ago, the larger ice caps melted, excepting those in Antarctica and Greenland, and the oceans rose to approximately their present levels, inundating the plains that had connected Alaska and Siberia.

D. Cultural drift in North and South America was in perfect consonance with continental drift. The Americans were isolated for their brothers and sisters in Africa and Eurasia.

E. So, we have two worlds developing in isolation from one another. One in the Western hemisphere and one in the eastern hemisphere.

IV. The Old World Neolithic Revolution

A. According to classic definition, the Neolithic Revolution began when humans started to grind and polish rather than chip their stone tools into final form, and it ended as they learned to smelt metal in quantity and work it into tools that stayed sharp longer and were more durable than their stone equivalents. In between, the story goes, humans invented agriculture, domesticated all the animals of our barnyard and meadow, learned to write, built cities, and created civilization.

B. In their Neolithic Revolution, the peoples of the Old World conscripted wheat, barley, peas, lentils, donkeys, sheep, pigs, and goats about 9,000 years ago. (The dog was domesticated much earlier; in fact, it was the only Paleolithic domestication.) Cattle maintained their independence for a few more millennia, and camels and horses for even longer, but by 4,000 or 5,000 years ago the humans of southwestern Asia and environs had completed the domestication of all but a few of the crop plants and livestock most crucially important to Old World civilization, then and now.

C. Meanwhile, the peoples of the New World had their own Neolithic Revolution or Revolutions, most spectacularly in MesoAmerica and Andean America, but theirs, relative to that in the Old World, began

slowly, accelerated tardily, and spread as though the Western Hemisphere were somehow less hospitable to the techniques and arts of civilization than the Eastern. Few animals were domesticated and many peoples remained hunter-gatherers.

V. Disease and Varmints

A. As part of their Neolithic Revolution, Old World peoples also produced and sustained weeds, vermin (lice, fleas, and internal parasites), and varmints (mice, rats, roaches, houseflies, and worms).

B. These "enemies" relied on filth created by close-quarter human and animal living. And with filth and these "enemies" came a more serious problem: invisible diseases.

C. The New World peoples did not have a problem with disease because the hunters and gatherers had, at most, only one kind of domesticated animal: the dog, while New World farmers and herdsmen domesticated no more than three or four species. Most societies were mobile and filth did not build up like it did in the Old World civilizations.

D. The Old World's civilized peoples had herds of cattle, sheep, goats, pigs, horses, and so forth. They lived with their creatures, sharing with them the same water, air, and general environment, and therefore many of the same diseases. The synergistic effect of all these different species living cheek by jowl - humans, quadrupeds, fowl, and the parasites of each - produced new diseases and variants of old ones. Pox viruses oscillated back and forth between humans and cattle to produce smallpox and cowpox. Dogs, cattle, and humans exchanged viruses or combined different viruses to produce three new maladies for each other: distemper, rinderpest, and measles. Humans, pigs, horses, and domesticated fowl in contact with wild birds- shared and still share influenza, periodically and perpetually producing new virulent strains for each other. When humans domesticated animals and gathered them to the human bosom - sometimes literally, as human mothers wet-nursed motherless animals - they created maladies their hunter and gatherer ancestors had rarely or never known.

VI. Conclusion:

A. By 3,000 years ago, give or take a millennium or so, "superman," the human of Old World civilization, had appeared on earth. He was not a figure with bulging muscles, nor necessarily with bulging forehead. He knew how to raise surpluses of food and fiber; he knew how to tame and exploit several species of animals; he knew how to use the wheel to spin out a thread or make a pot or move cumbersome weights; his fields were plagued with thistles and his granaries with rodents; he had sinuses that throbbed in wet weather, a recurring problem with dysentery, an enervating burden of worms, an impressive assortment of genetic and acquired adaptations to diseases anciently endemic to Old World civilizations, and an immune system of such experience and sophistication as to make him the template for all the humans who would be tempted or obliged to follow the path he pioneered some 8,000 to 10,000 years ago.

B. When the men and women of the Eurasia came in Contact with the men and women of the Americas in the late fifteenth century, two worlds collided. The diseases, varmints, vermin, cattle, and plants of the Old World gave the people from that area a tremendous advantage as they sought to conquer the peoples of the New.