The Columbian Exchange - [J.R. McNeill](http://www.learnnc.org/lp/people/149)

Geologists believe that between 280 million and 225 million years ago, the earth’s previously separate land areas became welded into a landmass called Pangaea. About 120 million years ago, they believe, this landmass began to separate. As this happened, the Atlantic Ocean formed, dividing the Americas from Africa and Eurasia. Over the course of the next several million years in both the Americas and in Afro-Eurasia, biological evolution followed individual paths, creating two primarily separate biological worlds. However, when Christopher Columbus and his crew made land in the Bahamas in October 1492, these two long-separated worlds were reunited. Columbus’ voyage, along with the many voyages that followed, disrupted much of the biological segregation brought about by continental drift.

After Columbus’ arrival in the Americas, the animal, plant, and bacterial life of these two worlds began to mix. This process, first studied comprehensively by American historian Alfred Crosby, was called the Columbian Exchange. By reuniting formerly biologically distinct land masses, the Columbian Exchange had dramatic and lasting effects on the world. New diseases were introduced to American populations that had no prior experience of them. The results were devastating. These populations also were introduced to new weeds and pests, livestock, and pets. New food and fiber crops were introduced to Eurasia and Africa, improving diets and [fomenting](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#foment) trade there.

## The flow from east to west: Disease

By far the most dramatic and devastating impact of the Columbian Exchange followed the introduction of new diseases into the Americas. When the first inhabitants of the Americas arrived across the Bering land bridge between 20,000 and 12,000 years ago, they brought few diseases with them. Why? For one reason, they had no domesticated animals, the original source of human diseases such as [smallpox](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#smallpox) and measles. In addition, as they passed from Siberia to North America, the first Americans had spent many years in extreme cold, which eliminated many of the disease-causing agents that might have traveled with them. As a result, the first Americans and their descendants, perhaps 40 million to 60 million strong by 1492, enjoyed freedom from most of the infectious diseases that plagued populations in Afro-Eurasia for millennia. Meanwhile, in Asia and Africa, the domestication of herd animals brought new diseases spread by cattle, sheep, pigs, and fowl.

Soon after 1492, sailors [inadvertently](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#inadvertently) introduced these diseases — including smallpox, measles, mumps, whooping cough, influenza, chicken pox, and [typhus](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#typhus) — to the Americas. People who lived in Afro-Eurasia had developed some [immunities](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#immunity) to these diseases because they had long existed among most Afro-Eurasian populations. However, the Native Americans had no such immunities. Adults and children alike were stricken by wave after wave of [epidemic](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#epidemic), which produced catastrophic [mortality](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#mortality) throughout the Americas. In the larger centers of highland Mexico and Peru, many millions of people died. On some Caribbean islands, the Native American population died out completely. In all, between 1492 and 1650, perhaps 90 percent of the first Americans had died.

This loss is considered among the largest [demographic](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#demographic) disasters in human history. By stripping the Americas of much of the human population, the Columbian Exchange rocked the region’s ecological and economic balance. Ecosystems were in [tumult](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#tumult) as forests regrew and previously hunted animals increased in number. Economically, the population decrease brought by the Columbian Exchange indirectly caused a drastic labor shortage throughout the Americas, which eventually contributed to the establishment of African slavery on a vast scale in the Americas. By 1650, the slave trade had brought new diseases, such as [malaria](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#malaria) and [yellow fever](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#yellow-fever), which further plagued Native Americans.

## The flow from east to west: Crops and animals

Eurasians sent much more than disease westward. The introduction of new crops and domesticated animals to the Americas did almost as much to upset the region’s biological, economic, and social balance as the introduction of disease had. Columbus had wanted to establish new fields of plenty in the Americas. On his later voyages he brought many crops he hoped might flourish there. He and his followers brought the familiar food grains of Europe: wheat, barley, and rye. They also brought Mediterranean plantation crops such as sugar, bananas, and citrus fruits, which all had originated in South or Southeast Asia. At first, many of these crops fared poorly; but eventually they all flourished. After 1640, sugar became the [mainstay](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#mainstay) of the Caribbean and Brazilian economies, becoming the foundation for some of the largest slave societies ever known. The production of rice and cotton, both imported in the Columbian Exchange, together with tobacco, formed the basis of slave society in the United States. Wheat, which thrived in the temperate latitudes of North and South America and in the highlands of Mexico, eventually became a fundamental food crop for tens of millions of people in the Americas.

The Columbian Exchange brought horses, cattle, sheep, goats, pigs, and a collection of other useful species to the Americas. Before Columbus, Native American societies in the high Andes had domesticated llamas and [alpacas](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#alpaca), but no other animals weighing more than 45 kg (100 lbs). And for good reason: none of the other 23 large mammal species present in the Americas before the arrival of Columbus were suitable for domestication. In contrast, Eurasia had 72 large animal species, of which 13 were suitable for domestication. So, while Native Americans had plenty of good food crops available before 1492, they had few domesticated animals. The main ones, aside from llamas and alpacas, were dogs, turkeys, and guinea pigs.

Of all the animals introduced by the Europeans, the horse held particular attraction. Native Americans first encountered it as a fearsome war beast ridden by Spanish conquistadors. However, they soon learned to ride and raise horses themselves. In the North American great plains, the arrival of the horse revolutionized Native American life, permitting tribes to hunt the buffalo far more effectively. Several Native American groups left farming to become buffalo-hunting nomads and, incidentally, the most [formidable](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#formidable) enemies of European expansion in the Americas.

Cattle, sheep, pigs, and goats also proved popular in the Americas. Within 100 years after Columbus, huge herds of wild cattle roamed many of the natural grasslands of the Americas. Wild cattle, and, to a lesser degree, sheep and goats, [menaced](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#menace) the food crops of Native Americans, notably in Mexico. Eventually ranching economies emerged, based variously on cattle, goats, or sheep.

## The flow from west to east: Crops and cuisine

## America’s vast contribution to Afro-Eurasia in terms of new plant species and cuisine, however, transformed life in places as far apart as Ireland, South Africa, and China. Before Columbus, the Americas had plenty of domesticated plants. By the time Columbus had arrived, dozens of plants were in regular use, the most important of which were maize (corn), potatoes, [cassava](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#cassava), and various beans and squashes. Lesser crops included sweet potato, papaya, pineapple, tomato, avocado, [guava](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#guava), peanuts, chili peppers, and cacao, the raw form of cocoa. Within 20 years of Columbus’ last voyage, maize had established itself in North Africa and perhaps in Spain. It spread to Egypt, where it became a staple in the Nile Delta, and from there to the Ottoman Empire, especially the Balkans. By 1800, maize was the major grain in large parts of what is now Romania and Serbia, and was also important in Hungary, Ukraine, Italy, and southern France. Maize appeared in China in the 16th century and eventually supplied about one-tenth of the grain supply there. In the 19th century it became an important crop in India. Maize probably played its greatest role, however, in southern Africa. Over the centuries, maize became the primary peasant food in much of southern Africa.

Despite maize’s success, the humble potato probably had a stronger impact in improving the food supply and in promoting population growth in Eurasia. The potato had little impact in Africa, where conditions did not suit it. But in northern Europe the potato thrived. It had the most significant effect on Ireland, where it promoted a rapid population increase until a potato [blight](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#blight) ravaged the crop in 1845, bringing widespread famine to the area. After 1750, Scandinavia, the Low Countries, Germany, Poland, and Russia also gradually accepted the potato, which helped drive a general population explosion in Europe. This population explosion may have laid the foundation for world-shaking developments such as the Industrial Revolution and modern European [imperialism](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#imperialism).

While maize and potatoes had the greatest world historical importance of the American crops, lesser crops made their marks as well. In West Africa, peanuts and cassava provided new foodstuffs. Cassava, a tropical shrub native to Brazil, has starchy roots that will grow in almost any soil. In the [leached](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#leach) soils of West and Central Africa, cassava became an [indispensable](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#indispensable) crop. Today some 200 million Africans rely on it as their main source of nutrition. Cacao and rubber, two other South American crops, became important export items in West Africa in the 20th century. Indeed, almost everywhere in the world, one or another American food crops caught on, complementing existing crops or, more rarely, replacing them. By the late 20th century, about one-third of the world’s food supply came from plants first [cultivated](http://www.learnnc.org/lp/editions/nchist-twoworlds/glossary#cultivate) in the Americas. The modern rise of population surely would have been slower without them.

1. What is the Columbian Exchange?
2. What diseases spread from Europe to the Americas? Why were Native Americans unable to resist these diseases? What was the consequence of the spread of these diseases?
3. What important crops were introduced to the Americas by Europeans as a result of the Columbian Exchange?
4. What important domesticated animals were introduced to the Americas by the Europeans? Explain how the horse transformed the lifestyle of Plains Indians.
5. Explain how history might have been different if horses and large domesticated animals existed in the Americas and not in Eurasia before the Columbian Exchange.
6. What American crops were introduced to Europe and Africa as a result of the Columbian Exchange?
7. In what ways did the Columbian Exchange make African Slave trade possible, economically important and necessary in the minds of many Europeans?
8. What do you believe the greatest effect of the Columbian Exchange was? Be sure to explain why.