



chapter six

A Revolution in Technology

The Shift from East to West

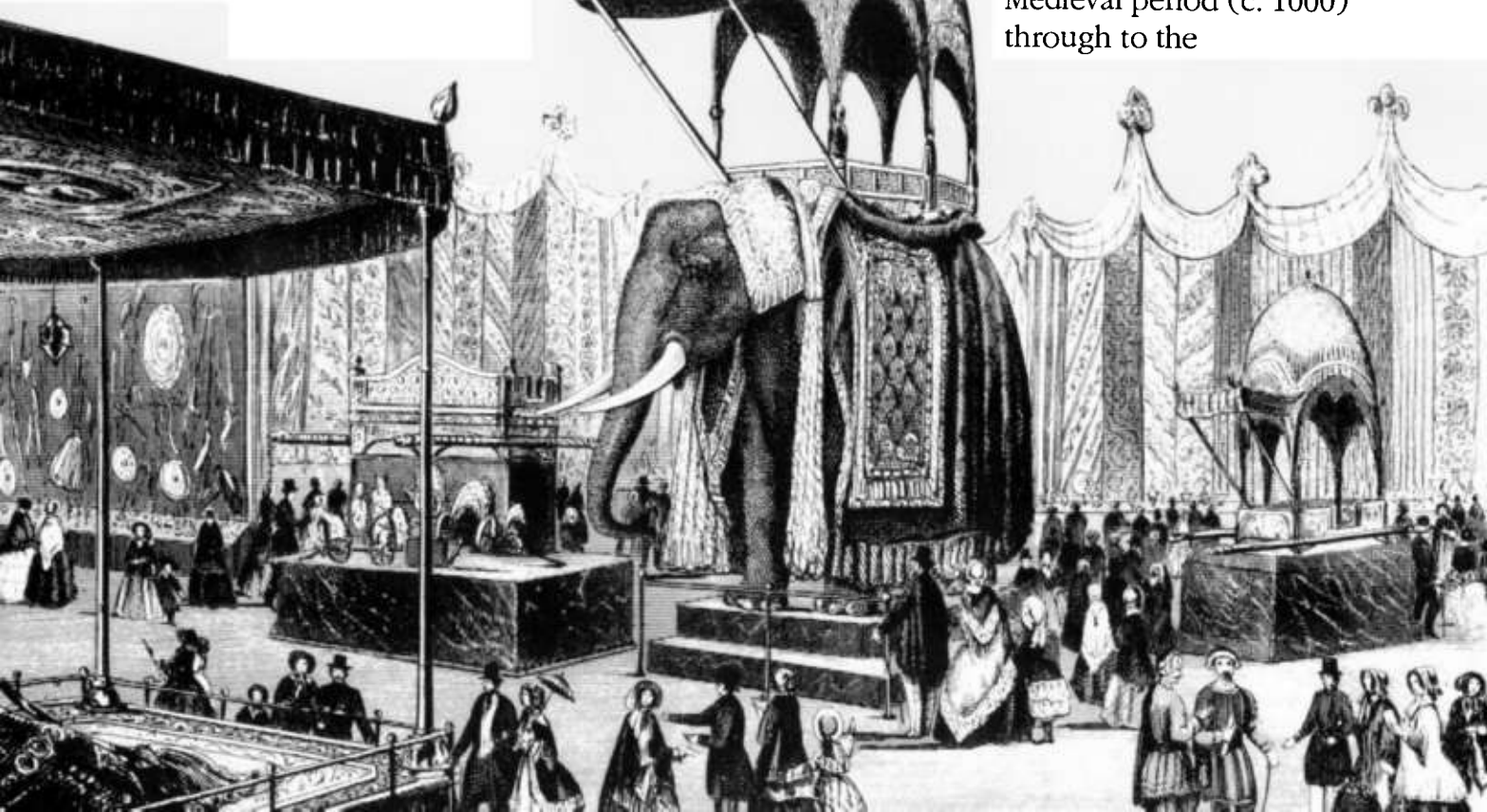


▲ *Mid-19th Century Chinese painting of European passengers disembarking from a British ship, which combines sail, steam and paddle power.*

▼ *Part of the Great Exhibition held in the Crystal Palace in London in 1851. Although displaying goods from all over the world, this exhibition clearly showed the superiority of western technology in the 19th Century.*

With the decline of Roman power, Western Europe had become something of a backwater and there was a general stagnation in its technology, arts and scholarship. Byzantium continued in the Graeco-Roman tradition, but from the Seventh Century the rise of the Arab empire, and the extraordinary flowering of the Islamic culture that followed, eclipsed Byzantium's ancient glory. As we have seen in this book, for nearly a thousand years the flow of ideas in technology and science was largely from Asia into Europe.

Gradually, the balance began to change. Profiting from the learning of Asia and Byzantium, Western Europe began to emerge from its 'dark ages'. From the Medieval period (c. 1000) through to the





◀ View of a European iron foundry in c. 1900. The development of new processes in iron production laid the foundations for the Industrial Revolution that was to transform Europe from an agricultural society to an industrial one.

Renaissance, more European cities became actively involved in trade, generating the wealth to finance new universities and places of learning. Increasing European naval expertise led to discoveries from the Fifteenth Century which opened up still further possibilities for trade – a route to India around Africa, bypassing the Middle East, and even of a ‘New World’, America. By the start of the Eighteenth Century, Europe’s command of the seas had led to its increasing domination of the world’s trade markets and the slow erosion of the ancient trade patterns of the Silk and Spice Routes.

It was from this strong position, and no doubt partly because of it, that from the mid-1700s the so-called Industrial Revolution began in Europe, transforming its economy from one based on agriculture to one centred on ever-expanding industrial cities. In little more than a century, the revolution in Europe was largely complete with the United States of America not far behind. The European and American output of trade goods entirely outstripped that of Asia, swamping their markets. The Indian textile industry collapsed, for example, unable to compete with the steam-driven looms of Europe.

China and Japan were the two nations to resist most determinedly the onslaught of European traders. It was not until 1842 and 1854 respectively that they were finally forced to open their ports to foreign trade. Both received a vast influx of European goods, but also increased the possibilities for their export trade. The Japanese, in particular, embraced western technology and science, and went out of their way to modernize and industrialize in a plan to make their country as rich and influential as the western powers. The first railway in Japan was opened in 1872, only 47 years after the opening in England of the very first railway of all. In much the same way as Europe had adopted and developed the technology and science of Asia during the Renaissance, the way was now open for Asian countries to do the same with the technology of the West.



▲ Pottery models of European merchants, made in China c. 1730. This type of figure was made as a souvenir and taken home by the merchants and sailors.