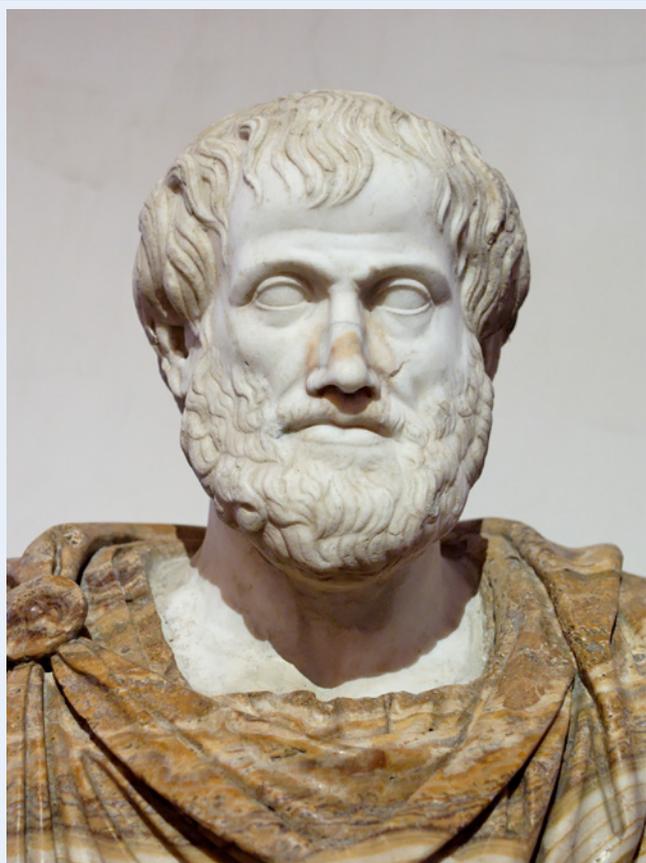
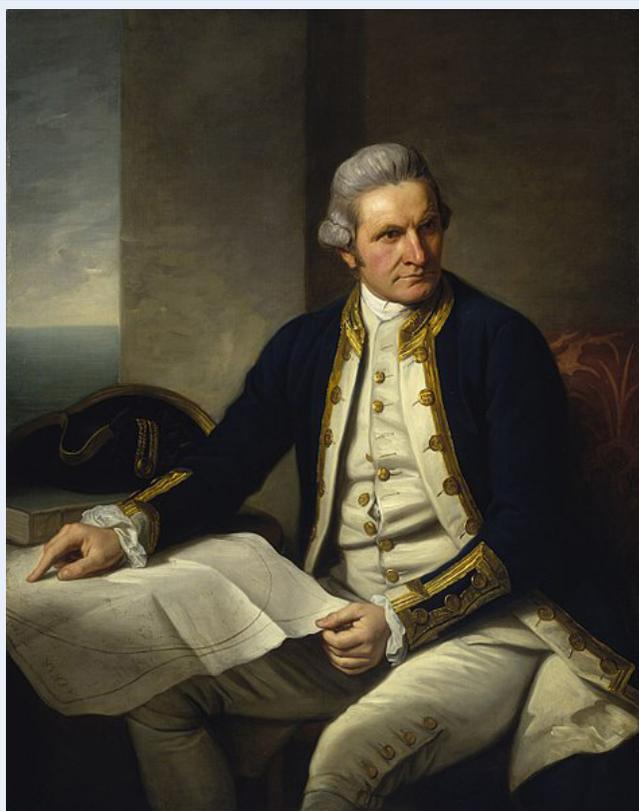


FIGURE 1-2



The Greek philosopher and early marine biologist Aristotle.²

FIGURE 1-3



Captain James Cook, the first scientific oceanographer to make skillful measurements.³

In fact, nearly half of the population on our planet lives within 150 miles of a coastline. Close to one-third of the petroleum and natural gas that we use is harvested from the ocean floor. Moreover, the ocean is a primary shipping and communications route. The ocean has been utilized by humans for thousands of years.

The History of Marine Biology and Oceanography

The history of marine biology and oceanography really starts with the history of voyaging. As people gained skills in seamanship and navigation, knowledge of the ocean expanded. The history of ocean exploration began with early Melanesians nearly 10,000 years ago, although early exploration was confined primarily to coastal areas. Later, ancient Pacific Islanders, who were talented voyagers, began exploring vast reaches of oceans in the Polynesian Triangle starting at least as early as 1500 BCE. These ancient Pacific Islanders were knowledgeable about marine life and had detailed information about wind, waves, and navigation patterns that had been passed down through oral traditions.

At approximately the same time, ocean exploration was also underway in the northern hemisphere. Phoenicians were among the earliest Western ocean explorers, and they developed nautical charts and thus the written record of marine biology. The Phoenicians sailed around the Mediterranean Sea, Red Sea, and Black Sea as well as the eastern Atlantic Ocean and the Indian Ocean. Ancient Greeks were also quite knowledgeable about marine life. Aristotle is sometimes considered the first marine biologist, as he described many ocean life forms and recognized that gills were the breathing apparatus of fish.

During the early Middle Ages, the formal study of marine life waned in Europe. During this time, the Vikings continued to explore the northern Atlantic and were skilled voyagers who learned about the ocean. During the Renaissance, Europeans again began to investigate the world around them. Ferdinand Magellan set sail on the first expedition to circumnavigate the globe. The advancement of scientific voyaging continued with an English sea captain, James Cook, who was a skillful navigator, cartographer, writer,