SEVENTEENTH CENTURY OCEAN VOYAGES

Conditions on board ship during lengthy 17th century ocean voyages were appalling, not only by modern standards but also by the standards of the time. All the ships leaked. Even with regular use of the pumps, water was constantly sloshing in the bilge. The water was also fouled by the casual sanitary habits of the age. Roaches and rats swarmed everywhere. No sleeping quarters were provided, except perhaps for the master and pilot. Ordinary seamen slept on or below deck wherever they could find room. There was no waterproof clothing.

Explorers' ships were less crowded than those that followed, for later vessels were jammed with soldiers, settlers, and merchants in addition to the crew. But the later travelers at least were following known routes and knew the duration of their voyage, within the limits imposed by wind and sea.

Sheer discomfort and stench probably did not mean much to those who were used to the sea as traders or fishermen. But the voyages of discovery created major problems in the way of food supply. In part this reflected the large number of men needed to handle the sails of the early exploring vessels and for whom stores of food that would last for the whole voyage had to be carried. But there were other factors that added to the difficulties: the tendency of grain and ships' biscuits to become sour or to swarm with weevils; the speed with which even the best made wine or water casks sprang leaks because of the continual lurching of the ships.

Food problems limited a captain's ability to sail where he chose and induced him to proceed by indirect, island-hopping paths whenever he had a choice, rather than by more direct and often less dangerous courses. Sometimes the captains assumed great risks to insure an adequate supply of food for their crews. For example, when John Davis was attempting to make a passage through the treacherous Strait of Magellan in 1591, he sent a landing party ashore in small boats with instructions to kill and salt the penguins which nested there. The preserved meat would be a valuable supplement to the ship's provisions on the journey's next leg.

What a shortage of food meant is grimly described in the remarkable detailed chronicle of Magellan's Pacific crossing: "We ate only old biscuit reduced to powder, full of grubs, and stinking from the dirt which the rats had made on it. We drank water that was yellow and stinking. We also ate ox hides which were under the main yard so that the yard should not break the rigging. . . We also ate sawdust, wood, and rats."

As this account indicates, the food not only ran short, but went bad. Shipboard menus consisted of dried or salted meat, salted fish, biscuits, rice, dried peas, cheese, onions, garlic, oil, vinegar, water, and wine. From the evidence of the records, seamen seem to have eaten about 3,500 calories a day, a perfectly adequate diet if it had been consistently available. Men in the Renaissance ate meals we should think dull. They had little meat and their choice depended on the season. Eating at sea swung from frugality during

voyages to gluttonous orgies after making a landfall, a pattern that corresponded exactly to eating habits ashore. The difference for the sailor lay in the terrible quality of the food during the times of scarcity: the putrid water, the fresh food petering out after a few days, the very salty unhealthy diet; the salted and dried provisions which turned into slimy messes, covered with worms.

On a long trip, sailors relied on rains to replenish the water supply. Pero de Queiros was notable for using a primitive furnace to distill fresh water from the ocean; generally, however, water was collected during rainstorms in buckets or as it dripped from heavy mats hung from the rigging. But when the rains failed, there was no other source.

Disease was widespread on long journeys and with good reason. Sailors ate a minimum of fresh vegetables; they were cramped and crowded, infested with fleas and lice, and often drenched for days on end. While clean salt water slipped below the keel and fresh air blew over the decks, the crew was all too likely to be literally rotting with scurvy.

The logbooks spoke of various kinds of fever, sometimes of plague; but scurvy, caused by a vitamin C deficiency, was the occupational disease of deep-sea mariners. A voyage to India was considered favored if only 1 out of every 5 men died of scurvy. Though the disease is popularly associated with the tropics, it attacked seamen in sub-polar waters with equal virulence.

Horrific contemporary descriptions tell us what the disease was like: "It rotted all my gums," wrote one sufferer, "which gave out a black and putrid blood. My thighs and lower legs were black and gangrenous, and I was forced to use my knife each day to cut into the flesh in order to release this black and fouled blood. I also used my knife on my gums, which were growing over my teeth. . . When I had cut away this dead flesh and caused much black blood to flow, I rinsed my mouth and teeth, rubbing them very hard. . .And the unfortunate thing was that I could not eat, desiring more to swallow than to chew. . . Many of our people died of it every day, and we saw bodies thrown into the sea constantly, 3 or 4 at a time. For the most part they died with no aid given them, expiring behind some case or chest, their eyes and the soles of their feet gnawed away by the rats."

Adapted from Age of Exploration. Time-Life Books.