

INTRODUCTION.

v

Some material alterations were made in the interior arrangements, which experience suggested as necessary to the accommodation, health, and comfort of the officers and men. One of the principal of these consisted in applying a thick close lining of cork all round the ships' sides, and on the under part of the upper decks, fore and aft. Shutters and plugs of the same material were also fitted to every window, sky-light, and illuminator, so as completely to surround the inhabited parts of the ships, during the winter months, with this substance. Care being thus taken to prevent the rapid escape of the warmth, recourse was also had to the most effectual means of producing and distributing it. With this view, an apparatus was fixed on the orlop deck of each ship, between the sail-room and the main hatchway, on a plan proposed and executed by Mr. Sylvester, for conveying a current of heated air into the several inhabited apartments. It is described by Mr. Sylvester to "consist of a wrought-iron vessel, about twenty-two inches square, placed upon pillars resting on a cast-iron frame upon the beams of the orlop deck. This vessel, or cockle, was four feet high, close at the top, having an opening in front for the ash-pit and feeding-door, and another behind for the discharge of the smoke into a perpendicular iron tube. The fire-place is within this vessel, and the heat is given to its interior surface. On the outside is an iron covering containing tubes, which approach, nearly at right angles, to the surface of the cockle; these are divided into two portions, one below to receive the cold air, which impinges upon the cockle; the other above, for the discharge of the warm air. These two cavities are separated from each other by a second casing about four feet square below, for the cold air, and terminating in two feet square at the upper-deck, where a part of the warm air is dis-