ing worn and the kind of work done will also have a retarding effect. The experimental evidence now available, of the laws governing the cooling of the human body is of great value in predicting just what may be expected of a definite air velocity at a given temperature and moisture content when directed upon the body of lightly clothed individuals. Complete reports with other detailed examples of the use of Laboratory Comfort Data are to be found in the JOURNAL A. S. H. V. E.

CHAPTER XVII

SYSTEMS OF VENTILATION

VENTILATION whether natural or mechanical, means the displacement of vitiated air from any enclosure and its replacement with fresh air. The systems may be classified as follows:—

Method of Supply	Method of Exhaust
Window	Gravity
Gravity	Fan
Fan	Gravity
Fan	Fan (with or without recirculation)

The movement of air in natural ventilation systems is produced by the difference in density between the column of air in the ducts and the outside air. The greater the difference in temperature between the two columns of air the more rapid the air movement.

In mechanical systems the circulation of air is maintained positively and uniformly regardless of outside air conditions.

The Fan System for Heating and Ventilating consists of a combination of a fan operating in conjunction with a blast heater, with or without a system of air distributing ducts. An air washer or humidifier may be added when required without otherwise changing the type of system. For heating purposes only, the fan system may or may not be used, depending on circumstances and the requirements to be met. The fan system may be used to supply both heat and fresh air for ventilation, or it may be used in conjunction with some form of direct radiation which is to care for the heat losses. When used for ventilating purposes, the fan will be required to supply whatever amount of air is specified to meet the ventilation requirements. The system may be arranged so that the fan may blow the air through the heaters, or draw the air through the heaters. Each arrangement possesses its own peculiar advantages, but the selection depends largely upon the individual requirements of the installation.

The draw-through apparatus is usually employed in factory buildings on account of its compactness as well as the advantage gained by connecting directly to the piping system. In this case the temperature of the air delivered will be the same to all parts of the building. The blow-through apparatus is used in public buildings, or wherever different temperatures and independent temperature regulation are required for different rooms of the building. The use of the by-pass around the heating coils permits the mixture of hot and cold air in any desired proportions, by the use of a mixing damper at the point where the two ducts from the heater, and from the by-pass, join to form one duct leading to the room. In the case of public buildings, the fan frequently