the bars, also serves to decrease clinkering, and should be resorted to when necessary.

iv. Hot flue gases.—The temperature of the flue gases should be recorded by a pyrometer. If this temperature is found to increase at any time above the average obtained for the same rate of steaming and flue gas analysis, the cause should be investigated. It will probably be due either to improper baffling, or to a deposit of soot or scale on the boiler heating surface.

The practicability of using the heat of these gases for heating the feed water or other purposes, should be carefully examined, and where feasible, the necessary plant should be installed.

v. Radiation Losses.—All boiler settings should contain good insulating material, and all steam and hot water pipes should be covered.

vi. Heat Transmission.—The flue gases should pass over the heating surfaces of the boiler at as high a velocity as the draft available will allow. Baffles must be maintained in good repair to prevent short circuiting of the gases. The tubes and plates through which the heat is conducted must be kept clean on both sides.

vii. Exhaust Steam.—Whenever possible, exhaust steam should take the place of live steam for heating purposes. The exhaust steam from the feed pumps and other auxiliary steam engines should pass to a feed-water heater.

viii. Heating Buildings.—A definite temperature to which it is decided to heat the buildings must be decided upon, and should be maintained throughout the building by regulating the heat supply. As far as possible, all air except that required for ventilation must be excluded from the buildings. When steam is used for heating, return the condensed steam to the boiler.

ix. Drying Products.—When steam is used for drying substances it is necessary to see that the steam formed by the evaporating of their moisture can easily pass off through a vent. The product should be so arranged in the drier, that it may dry evenly; and the steam should be turned off immediately the product is dried to the desired consistency.

x. Measurements.—Account, as far as possible, for every heat unit in the coal. Organize a staff who will see that no heat is wasted unnecessarily.