Incubator Encyclopedia Article

Incubator

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The ancient Egyptians and Chinese both devised incubators to hatch chicks from eggs without the mother hen sitting on the eggs. This enabled hens to continue laying eggs. The Egyptian incubators were large rooms heated by fires; attendants turned the eggs at regular intervals so they would warm evenly. Some Chinese incubators were warmed by fire, others by rotting manure. The Italian inventor Jean Baptiste Porta drew on the ancient Egyptian designs to build his 1588 egg incubator, but was forced to abandon his work by the Inquisition. Dutch inventor Cornelius Drebbel also invented an incubator to hatch eggs.

Knowledge about egg incubation was revived and introduced throughout Europe by the inventive Frenchman René-Antoine Ferchault de Réaumur (1683-1757) around 1750. Réaumur's device was warmed by a wood stove; temperature was controlled by a thermometer, also invented by Réaumur, which gave rise to the temperature scale named after the inventor. The success of Réaumur's incubator--Louis XV (1710-1774) enjoyed helping the chicks hatch--helped boost commercial production of foodstuffs at the beginning of the industrial era.

After Réaumur's death, the incubator was further developed by Abbé Jean-Antoine Nollet (1700-1770) and later by Abbé Copineau, who used alcohol lamps as a source of heat. Today's incubators are electrically heated and turn the eggs automatically; large ones may hold up to 75,000 eggs.

A neonatal incubator is a device consisting of a rigid boxlike enclosure in which an infant may be kept in a controlled environment for medical care. Incubators to house prematurely-born babies unable to maintain their own body temperature were developed in the 1880s by placing pans of hot water beneath enclosures. A number of "incubators with living children" were demonstrated in Turin, Italy, at the 1898 Italian Exhibition. Today's neotatal incubators are made of plastic and Plexiglas. The device may include an AC-powered heater, a fan to circulate the warmed air, a container for water to add humidity, a control valve through which oxygen may be added, and access ports for nursing care. Incubators contribute greatly to ill and premature infant survival rate, even very low birth-weight infants.