

be damaged or thrown overboard for the preservation of the ship and cargo, there is no general average; and the owner of such goods is the *sole loser*.

*Fourth.*—And yet, if damage be done to the ship, or any of the cargo, carried according to *custom* in the hold or *otherwise*, for the preservation or benefit of the whole concern, the deck loading, or any portion of it preserved thereby, must contribute, in the ratio of its value, to make good the sacrifice.

---

**HEAT.**—Heat is more common and more universally diffused, than any other substance connected with our earth. Every particle of air, water, earth, metals, every tree and leaf, every quadruped, fish or insect, contains more or less heat. And various bodies feel cold, not because they have no heat, but because they have less than our bodies, and therefore take it from them. Most bodies contain heat stored up within them, which is not perceptible to our senses, and may frequently be brought out and rendered sensible. Water which is even cold to the hand, when mixed with three times its quantity of sulphuric acid, is rendered more than boiling hot. The heat is thrown out of the water, because it becomes more solid than before, and cannot retain all the heat it had in store. If water be mixed with lime, and cause it to slack, a portion of it becomes as solid as the lime itself, and of course can retain but a small quantity of the heat it had when liquid, and consequently throws off, or renders sensible an intense heat, and sometimes sets on fire ships or other vessels which contain it.

A piece of iron, which does not feel hot to the hand, may be made red hot, by giving it upon an anvil a few quick and smart blows, which press out the insensible heat and render it sensible.

The air contained in a fire syringe, by a sudden compression, may be made to throw off heat enough to set fire to timber, or a piece of cotton prepared for the purpose.

The friction of machinery, and of the limbs of trees, sometimes brings out so much insensible or latent heat, and renders it sensible, as to throw a manufactory or forest into conflagration.

Although many bodies are not hot, but intensely cold, when tested by our senses, they may still be rendered more cold, or made to give up heat, which is proof that they contain it. And it is supposed that every particle of matter, from the highest point in the atmosphere, to the centre of the earth, and even every atom of matter in other worlds and other systems, contains a portion of heat, to whatever degree of cold it may be reduced.

Heat is not only common and almost universal in its existence, but is less so on its application. Being deprived during the winter of a portion of the heat which the suns sends us in rich abundance during the summer, chills our earth and locks it up in frost; and but for a seasonably returning spring, it would cease to afford sustenance either to the animal or vegetable creation. If he should withhold, even but a portion of his heat from our earth for a single year, it would present one vast and dismal gloom without a man an animal or a plant living upon its surface.—*Family Lyceum*.

---

EXTRACTS OF LETTERS FROM MR. AUDUBON.—“I have to announce you the discovery of a new wren, or as I must call it, a