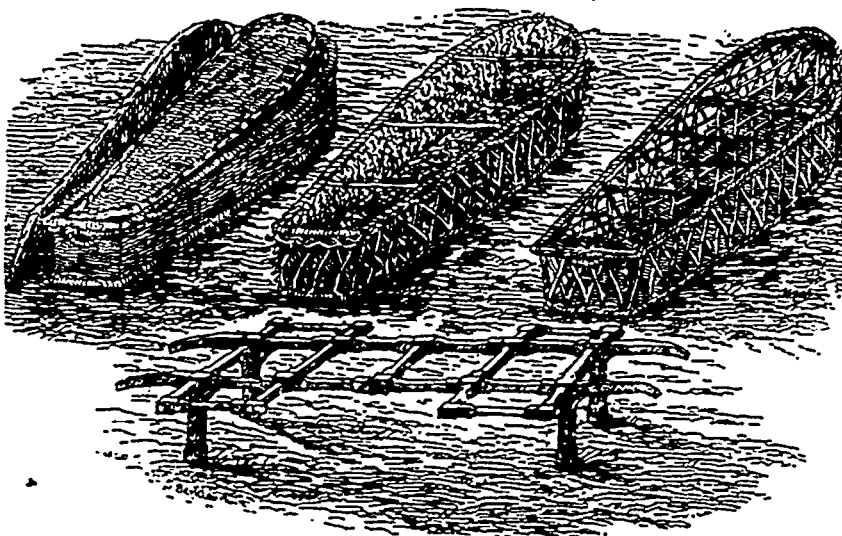


IMPROVED BRIDGE CONSTRUCTION.



WICKER COFFINS.

or a brisk walk after dressing, commonly restore the lost balance.

The plan of permitting the wet clothes to dry on the wearer is very objectionable. The abstraction of heat from the body by the evaporation of moisture in the clothes produces a marked depression of the body-temperature, and a severe cold. This is most strikingly seen in the effects of a wetting in the Tropics. The smart shower or downpour is quickly followed by a hot sun and a breeze, and the loss of heat under these circumstances is considerable. The person is "chilled to the bone," and the effects are felt for a long time afterwards. The effect of the evaporation under these circumstances is illustrated by the Tropical plan of placing water in a vessel of porous clay, wrapping a wet cloth round it, and exposing it to a breeze. The water becomes distinctly cold.

The effect of a strong impression is equivalent to a longer action which is not so marked; and Behier, in the treatment of hyperpyrexia by the cold bath, found that either a long exposure or very cold water were necessary to produce a marked impression in the hyperpyretic condition. So a sudden sharp cooling, and a longer and slower process, alike produce those lowered temperatures which lead to severe and often fatal consequences.

But if "taking cold" is "being cold," how, it may be asked, does a feverish condition result? It is the normal course of a cold to cause a high temperature and then to

defervesce. This is due to a want of promptness in the regulatory arrangements.

The question of the increased production of body-heat to meet great loss of heat has been much disputed. Liebermeister, Rochrig, and Zuntz maintain that such is the case, while Winternitz and Senator dispute it. There can be no doubt that the enormous amounts of fat devoured by the Esquimaux are consumed and go to the production of body-heat. For, however, much, by the use of furs, &c., he may reduce the loss of heat by the skin, there is still the loss entailed by respiration, by the hot expired air, to be accounted for.

On exposure to cold, the skin ordinarily becomes cool and marbly, from contraction of the cutaneous vessels; so the loss of heat is checked, and the blood is kept in the internal parts, the heat-producing area. A cold bath, or exposure to cold, often causes a rise of temperature in the internal parts and Liebermeister found that, in a cold bath, not only the loss, but also the production of heat, is increased, the production being in inverse proportion to the temperature of the bath. The amount of blood on the skin, the cooling surface, is diminished on exposure to cold, and so the bulk of blood in the heat-producing area is increased, and, by this combined action, a sufficient body-temperature is obtained.

Where there are an increased loss and an increased production of heat simultaneously, they neutralise each other. Where there is much muscular exercise, there is perspiration; where there is much loss of heat, there is increased production of heat. In those inured to exposure, an immediate increase in the production of heat probably exists. In others, a lack of promptness in the heat-producing process occurs, a delay indeed, and then the chill and lowered temperature are followed by a time of increased production of heat, and a feverish condition results. Instead of the evolution of heat being instituted at the time of the excessive loss of heat, it comes on slowly and forms a reactionary disturbance—an oscillation of the balance; being much depressed, it rocks to an equal extent in the opposite direction. Habit endows the system with an educated power of maintaining the balance; disuse lessens the power. The more people take care, in the common way, against cold, the more susceptible they become and the less exposure is sufficient to disturb their more

mobile body-balance.

Instead of feeling any surprise that a chill is followed by subsequent fever, it is what we might, *a priori*, expect.

It does not follow, however, that, because there is great loss of heat, there is also keen sensation of cold. In fact, the large flow of warm blood to the skin, or extremities, prevents the sensation of cold; which sensation is often acute when the internal temperature is normal, or even higher. Compare the cold hands of the snow-baller; and yet, surely there is more actual loss of heat with the latter than with the former? Some people assert that it is impossible that they could have caught cold, as their hands and feet were warm. Precisely so; to maintain the temperature of the extremities the body temperature generally was lowered. On the other hand, a frost-bitten limb may be the price of a life. If the warm blood had not retreated to the central area, death from general loss of temperature might have resulted; the maintenance of the temperature of the periphery would probably have lowered the body-heat beyond the danger point.

Alcohol has been abandoned in Arctic regions. It dilates the cutaneous vessels and increases the loss of body-heat. The drunken man perishes of cold, when the abstainer survives.

When the exposure follows a long continued warmth, the cutaneous vessels do not contract, but become dilated or paralysed, and then a large bulk of warm blood courses