

R. Acid carbol.....	ʒij.
Tr. opii	ʒss.
Ol. olivæ ad.....	ʒviiij.

Sig. Apply three times a day.

If the cold to which a part has been subjected has been severe enough, or the alteration in temperature great, *frost-bite* is the result, even in persons of healthy constitution. The parts then become stiff, the skin pale or white, entirely insensible, the blood being driven from the surface to the deeper structures of the body. If the cold be exceedingly intense the part is destroyed at once, when, instead of the blood being driven to the internal organs, it will be more or less retained in the affected parts; these presenting a mottled, livid appearance. A similar appearance is seen when the ether spray is too long applied to a part, and due to the same condition, viz: blood stasis.

In regard to the constitutional effect of cold, we find there is, first, a stimulation; second, a depression. The primary excitement passes off, and a state of sleepiness ensues followed by torpor which, if not relieved, terminates sooner or later in death.

As the effect of cold is to drive the blood from the surface to the viscera and nerve centres, we find them seriously congested; death often being due to cerebral hæmorrhage, or engorgement.

The *sequelæ* of frost bite are numerous and important. Among the most interesting may be mentioned Sloughing, Ulceration, Gangrene, Pyæmia, Congestion, and Inflammation of the Lungs, Tetanus, Ulceration of the Duodenum.

In regard to the latter condition it may be noted in passing as strange that intense heat to the skin producing a burn, and intense cold, resulting in frost-bite, may be followed by the same result in the duodenum, viz: ulceration. Whether this can be accounted for by the vicarious action of Brunner's glands (the sudoriparous glands in both cases having been destroyed) is a point we cannot at present settle.

Treatment of frost-bite. One of the first and most important points in this is, to restore the circulation gradually. Too rapid re-action must be avoided. The venous circulation may be assisted by gentle friction along the course of

the veins, and by light coverings of flannel; the arterial by slight warmth, and mild local stimulation, only resorting to these measures, however, if the natural reaction seems insufficient. On the other hand, if the reaction appears too rapid, it must be kept fully under control by such means as elevation of the parts, or the use of ice water.

It is a difficult point to determine how long torpor may exist without destroying the vitality of a part. Sir John Franklin remarks that an animal may be restored to life even after the whole body has been frozen.

By the appearance of the skin for some time after a frost-bite we cannot tell how far the injury has extended; therefore, we must wait for the line of demarcation to form. By operating before this is distinctly observed, we are likely to remove healthy tissue, and may even cause supervention of pyæmia. If gangrene is evidently present, however, and the line is slow in forming, the application of a stimulating linament will hasten the ulcerative process. The prescription given previously will, when freely applied, lessen the fætor, and reduce the tendency to a septic condition. So soon as the line is distinctly formed it may be necessary to amputate. During the whole period the strength of the patient must be kept up by all required means, and anodynes used if required. Should tetanus threaten, all dead and irritating parts must be removed.

The results in the present case fully justify the line of treatment here marked out. When first seen it seemed impossible that much of the foot could be saved. It appeared as though a Syme's, or a Pirogoff, or, at best, a Hancock's operation would be the result. But, by the expectant system, this patient has been brought, with comparative safety to his present favourable condition. Instead of being a cripple for life, as was at one time feared, and as too hasty operative interference might have ensured, he will have almost as good use of his feet as previously. The small loss of bone which he has suffered is certainly remarkable considering the nature of the injury; and to-day the parts are progressing so rapidly to complete recovery that his discharge in an excellent condition is a matter of the near future.