

always preceded for a longer or shorter period by this sign, the period-ranging as a rule from a few hours to three or four days, occasionally to a few weeks, and in one case coming under my observation, to some months. Probably some cases of death, particularly when very sudden, may not be preceded by this symptom, but I am inclined to think that the relative proportion of such cases is small.

Shortly after I read my paper on this subject before the Huron Medical Association; my attention was called to an article⁷ by R. A. Chase, of Philadelphia, describing a closely allied but different respiratory symptom, which he terms sterno-mastoid breathing. Chase thus describes it: "After grave symptoms have set in, and generally not very long before death supervenes, it will be seen that the head of the patient moves up and down in a rocking fashion, synchronously with the breathing, or rather it may better be described as a forcible raising of the head and chin, giving a fanciful beckoning motion to the head. This action, a veritable death's call, is brought about by the strong contraction of the two sterno-cleido-mastoid muscles in an effort to facilitate breathing. Every other symptom of the dying state may at times improve or even pass off, but after sterno-mastoid breathing has once begun, the patient never revives, passing at varying rates into the decline, surely and progressively to the end. One may see whimsically in it the portal to the valley of the shadow of death, that once entered no one ever turns back."

In a record of one hundred cases observed by himself and colleagues, the duration of this symptom was found to range from seven hours to one minute. The medium length of time it lasted before death was twenty minutes. Chase formerly had the impression that this important sign was never absent in the dying, being present even in cases of sudden death, appearing in the one or two final gasps. In recent years, however, this belief has had to be modified, and he is assured by a longer experience that there is a small proportion (from five to ten per cent.) in which it may not be detected. In one or two cases he has known this symptom to cease for a few moments, only to be promptly resumed.

Since reading Chase's paper, although I have had several patients under my care die, I have only had one case in which I was able to see the patient close enough to the time of death to observe this symptom. In my notes of his case, which was of a sub-acute nature, I have mention of the fact that tracheal breathing of medium extent was present twenty-five days before death. Fifteen hours before death it was noted as being well marked,