sthesia; whereas a large amount, though the cough and choking sensation which the greater volume of vapor produces may cause the patient to resist and struggle, is certain to bring about a satisfactory condition of insensibility.

3rd. *Phenomena of Etherization.*—A strong, full-blooded man is pretty sure to resist the approaches of anæsthesia under any circumstances. This may sometimes be overcome by warning him before hand of such a possibility, and inducing him to resolve not to struggle; the last impression on his mind influences him even in his stupor. Resistance is also liable to be made by almost all patients just before complete anæsthesia takes place, but the ether rarely requires to be suspended. Occasionally the respiration becomes embarrassed during the period of excitement, partly from the struggle itself, and partly perhaps from the increased flow of saliva, which is a common phenomenon of etherization, or from the position of the tongue or head of the patient, and a condition may sometimes show itself characterized by lividity, rigidity, and convulsive motions of the extremities. These phenomena, it it an observation of Dr. H. J. Bigelow, of this city,* are in reality the tetanic symptoms which, as Dr. Brown-Sequard has shown, precede the approach of asphyxia. Although alarming to the inexperienced, the state is in fact devoid of danger, provided the ether be momentarily suspended; this being done the refusal to breathe soon gives place to a long-drawn inspiration, and in most instances complete insensibility immediately ensues. In such a case it is interesting to observe how readily the spasm yields, and how complete is the muscular relaxation which follows the free respiration of air unmixed with ether. It should therefore be borne in mind, that when there is muscular rigidity with lividity, the suspension of etherization will transform this into the relaxation of anæsthesia. Persons of intemperate habits succumb to ether slowly, and with greater reluctance and more opposition than persons unused to intoxication.

The pulse should be watched by a competent person from the outset, and its failure either in strength or frequency, lead to a more cautious use of the ether. It must, however, be remembered, that in experiments with anæsthetics upon animals, the heart has been found to be the *ultimum moriens*;† the respiratory movements, therefore, should not be forgotten or neglected, but any slowness or irregularity in their performance should at once receive attention. Dr. H. J. Bigelow has drawn attention to the distinction between the effects of anæthesia upon the pulse of the healthy subject suddenly reduced by accident, and a similar or even stronger pulse in a person exhausted by long and grave disease. In the former case the vitality is unimpaired, and the pulse even when hardly perceptible, rises with anæsthesia. Ether, therefore, is not to be withheld from a patient to be operated on, even in a state of collapse after severe accident, but great caution is demanded in its use with patients who are near death from chronic and exhousting disease, and who require operations.‡

The best test of complete etherization is the snoring of the patient; and no operation unless slight, should be undertaken until this symptom presents itself. The relaxation of the muscles of the extremities may occur without insensibility. The important distinction between *snoring* and *stertor* is, however, to be borne in mind. Whilst the former is caused only by the relaxation of the muscles of the palate, the latter arises from spasm of the vocal cords and partial closure of the rima glottidis, and thus becomes the immediate forerunner of the train of spmptoms already referred to as indicative of partial asphyxia. Stertorous respiration demands, therefore, a brief suspension of inhalation; one or two inspirations of fresh air will, as already mentioned, almost instantly dispel the system.

In conclusion, the Committee observe, that the "dangers of Chloroform are

* Unpublished Records of the Boston Society for Med. Improvement.

†Du rôle de l'alcohol et des anesthésiques dans l'organism, Lallemand, Perrin et Duroy, Paris, 1860, p. 398.

‡ Unpublished Records of the Boston Society for Med. Improvement.