I then painted the soft palate and the fauces with a four-per-cent. solution of hydrochlorate of cocaine. A very slight improvement was perceptible, but after an hour the gagging returned. We both persevered doing this, but it was of no permanent avail. Finally, I made her protrude her tongue, and I sprayed it with the solution. To the surprise of both of us, she instantly for the first time in her experience, sucked the plate into place without the least unpleasant sensation. The effect—and the set—remained for two days, but on the third the old gagging returned, and I could not persuade her to make another effort. The interesting question is, what is the physiological explanation of the cause? Is it not exceptional as illustrating a deviation from the well-known neurosis associated with the nerves of the teeth, as in inflammation of the pulp. Evidently the tongue alone was the sentient seat from which a centripetal current travelled towards the fauces, reappearing as a centrifugal impulse, which excited reflex irritability of the nerves of the stomach, and contraction of the viscus. Yet it was not until the act of suction was performed that the retching occurred. The plate could be put into the mouth and the teeth closed on it without exciting nausea, but the instant the tongue touched it in sucking, the gagging occurred. Was not the dorsum of the tongue in a hypersensitive condition, and did not the spray paralyze the papillæ, as well as by reflex action, the nerves of taste, the glosso-pharyngeal, and the lingual or gustatory? Was not the tongue the stimulation that produced the irritation?

I am indebted to Dr. T. Wesley Mills, Professor of Physiology McGill College, Montreal, for the following hasty notes on the above :—

Case of Nausea Produced Reflexly.—In this case there seems to be little doubt but that the afferent impulses travelled from the tongue by way of the fifth nerve, were the sources of the nausea. The tongue is very readily affected by all foreign sensations, such as that referred to in the account of the present interesting case. But as the nature of reflex depends not only on the *quality*, intensity, site, etc., of the stimulus, but very largely on the *contraction of the central cells* acting as centre, it becomes a question whether in the present instance there was increased excitability (activity) of the nerve endings, of the nerve itself, the central cells, or all of these. Many facts go to show, that the central cells are of most importance in determining the issue, as witness the readiness with which cerebral events (emotions, recollections) cause nausea.

The case in question seems to me to illustrate this aspect of the subject. As in the case of other centres, so in this instance, the tetanus "vomiting centre" had, partly from repeated stimulating and partly from cerebral influences, become irritable, *i.e.*, discharged impulses with undue readiness. This centre seems to be especially liable to get into this condition, so that even a vomiting (or regurgitating) habit may be formed.