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A note on the estimation of carbon dioxide in serum by the Van Slyke method in the presence of ether.

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When serum contains an amount of ether such as is present in an animal fully anesthetized, an appreciable error is introduced into the analysis of the CO_2 content by the Van Slyke method, using the ordinary technique with either the constant pressure or the constant volume machine. This is due to the extraction of a considerable part of the ether during the initial extraction of the gases and to the reabsorption of most of this ether by physical solution during the absorption of the CO_2 with alkali. By the ordinary technique the apparent CO_2 content may be too high by as much as 10 volumes per cent.

A modification of the technique has been developed which makes it possible to measure the CO_2 in the presence of ether. This consists essentially of reextraction of the alkaline solution after absorption of the CO_2 with alkali. The CO_2 remains held by the alkali but the ether is again extracted in part into the gas phase. An empirical correction must be introduced to correct for a greater solubility of the ether in the acidified solution than in the alkaline solution.