3. When cane-juice has been clarified with lead subacetate and mercuric nitrate added to the clear solution, a white precipitate is thrown down. This precipitate contains any amide bodies present and by some chemists this use of mercuric nitrate has been proposed or used as a proof of the presence of amide bodies. This is altogether unwarranted, for the mercuric nitrate precipitate contains any guanine present, so that the formation of a precipitate in this case is not only no indication of the amount of amide present, but no evidence of their presence at all.

KOHALA, HAWAII,
March 15, 1899.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE PENNSYLVANIA STATE COLLEGE AGRICULTURAL EXPERIMENT STATION.]

A CONTRIBUTION TO THE CHEMISTRY OF BUTTER-FAT.[1]

BY C. A. BROWNE, JR.

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THE results on the chemistry of butter-fat herewith presented constitute partly the work on regular experiments at the Pennsylvania Experiment Station, and partly extra work performed at odd moments as the other duties of the laboratory permitted.

Nearly all of the analyses were on samples of butter made at the Station Creamery, and representing for the most part the product of a herd of high-grade Guernseys. The figures given in the tables, accompanying this article, need not be taken, therefore, as typical of butter-fats in general, though we believe them to be, on the whole, fairly representative. The differences, if there are any, in the chemical composition of butter-fat from different breeds of cows, is a subject at present being investigated at this station.

We have chosen, for the sake of convenience, to divide our subject into three distinct heads; *viz.*,

1. The physical and chemical constants of butter-fat.
2. The chemical composition of butter-fat.
3. The chemistry of rancidity in butter-fat.

Each of these divisions will constitute a separate paper.

[1] Read by title before the New York meeting of the American Chemical Society, December 28, 1898.