INTRODUCTION

The abomasum is endowed with the biochemical property of clotting milk when fed to young calf. This is due to the secretion of rennin, the enzyme with milk clotting property. During the first week of the life of the calf, its stomach undergoes pronounced modifications. Indeed, at birth, only the abomasum plays an important role in digestion due to the closure of the oesophageal groove. Until recently it was thought that the animal abomasum secretes rennin from birth and that this enzyme disappears at weaning, being replaced by pepsin. It is now known that the veal (dried abomasum) of the unweaned calf always secretes pepsin to some extent.

As true with other proteolytic enzymes of the digestive tract, rennin exists in its inactive form, Pro-rennin. The activation of pro-rennin to rennin appears to stimulate other enzymes of the digestive tract, namely pepsin and trypsin. Such a process, whether autocatalyzed or brought about at low pH is accompanied by release of peptides from their molecular entities.

While myriads of data are available on the isolation and manufacture of rennin from both slaughtered calf stomach (8, 19, 35, 39, 41) and from fistulated calves (7, 25, 49, 52, 56, 57, 58), little is known on its mechanism of synthesis and secretion in the abomasum. Nain et al. in
their work with fistulated calves and kids, at this Institute, furnished information on the secretory profile of rennin in fistulated calves when fed with different types of milk whey. The type of whey appears to control the prorennin-rennin conversion. Another revelation was the role of certain additives in the secretion of rennin. That rennet obtained from fistu-

lated animals differs from the conventional Hansen rennet, has been amply documented by these workers. The occurrence of this glaring dissimilarity between these two preparations with the knowledge that their residence in same (abomasum), leads one to look into this more closely.

The distinct advantages offered by the fistulation technique to tap rennet was recognized and utilized. Therefore, it was thought worthwhile to have an insight of the mechanism of synthesis and secretion of rennin in the abomasum. Such an endeavour will help to elucidate whether rennin formed in the abomasum is synthesized by the abomasum cells and is secreted by these cells. Furthermore, the knowledge gained by delving into the matter of utilization of dietary amino acids for rennin synthesis in the abomasum in relation to fistulation technique, would be of immense value.

The present work delineates a humble approach made in this direction using 14C-amino acids.