of phenoxyacetate and on the amino acid moiety of the phenoxyacetyl-L-amino acid. The acylase activity was highest with phenoxyacetyl-L-alanine and decreased with higher homologues of aliphatic amino acid. The presence of phenyl, heterocyclic or hydroxyl groups on the side chain or the absence of the α -carboxyl group in the amino acid moiety did not decrease the inducer effect of the compound. Phenoxyacetyl-D-alanine failed to induce the enzyme formation by the organism, indicating that the enzyme formation exhibited marked stereospecificity towards the amino acid moiety of phenoxyacetyl-amino acid. Although the phenoxyacetyl-amino acids served as good inducers of the enzyme, none of them was acted upon as a substrate by the enzyme.

Effect of Hydrogen Peroxide on Buffalo Milk Proteins

By A. SRINIVASAN (*Department of Chemistry, Loyola College, Madras-34, India*)

The use of H_2O_2 for the preservation of milk and in the production of special varieties of cheese has aroused interest in recent years. In tropical countries, because of the high atmospheric temperature and humidity and also because of the non-sterile conditions used for milking, fresh milk readily turns sour. The addition of small quantities of H_2O_2 (0.03–0.1 %, w/w) to fresh milk not only preserved the milk for over 36–48 h but also effectively controlled and diminished the bacterial count. The composition of the various constituents, particularly the proteins, and the flavour of milk were not affected by the addition of H_2O_2 . Moreover H_2O_2 was readily destroyed by the catalase activity, leaving no trace of it in the milk. Hence the use of H_2O_2 for the short-term preservation of milk assumes special significance in tropical countries.

Studies on the effects of different concentrations of H_2O_2 , over different time-intervals, on the composition of buffalo casein and whey proteins (Lakshminarayana & Dastur, 1968) have shown that at lower concentrations it acts as a short-term preservative, whereas at higher concentrations (0.2–0.5 %, w/w) it affects the flavour and the protein content and attacks the amino acids, particularly the sulphur-containing amino acids and tyrosine (Srinivasan, 1969).

Laxminarayana, H. & Dastur, N. N. (1968) *Dairy Sci. Abstr.* 30, 177–186

Srinivasan, A. (1969) Ph.D. Thesis, University of Madras

Comparative Study of the Thyroid-Gland and Submaxillary-Gland Peroxidases

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A peroxidase (EC 1.11.1.7) was isolated from the soluble supernatant of the thyroid gland of goat and purified to homogeneity as ascertained by immunodiffusion, chromatography, ultracentrifugation and polyacrylamide-gel electrophoresis. General properties of the enzyme were studied and the prosthetic group was characterized as ferric protoporphyrin IX. Many of the molecular properties of this enzyme are similar to those of the goat submaxillary-gland peroxidase purified previously. Both the thyroid-gland and the submaxillary-gland peroxidase are found to be serologically similar and do not catalyse an iodination reaction. Their behaviour towards some common inhibitors and their molecular weights are comparable, but they show slight differences in their catalytic properties. However, there is a distinct difference in the electrophoretic mobilities of the two enzymes. The amino acid compositions of the two enzymes were also compared. The electrophoretic, chromatographic, enzymological and immunological properties of goat thyroid-gland and submaxillary-gland peroxidases suggest that peroxidases exist in multiple molecular forms not only in plants but in mammalian systems also.

Effect of α -p-Chlorophenoxyisobutyrate on Oxidative Phosphorylation

By S. R. PANINI (*Department of Biochemistry, Indian Institute of Science, Bangalore-12, India*)

The effect of the antihypercholesterolaemic drug ethyl α -p-chlorophenoxyisobutyrate (clofibrate, Atromid-S) on oxidative phosphorylation by rat liver mitochondria was studied. The sodium salt of the free acid inhibited State 3 oxidation with NAD^+ -linked substrate (glutamate+malate) as well as with succinate. The concentrations for 50% inhibition were 2.2 and 3.5 mM with glutamate+malate and succinate respectively. The respiratory-control index decreased with increasing concentrations of the drug. The concentration required for a 50% decrease in respiratory control was 1.0 mM with both glutamate+malate and succinate. The inhibition exerted by the drug on State 3 oxidation was released by 2,4-dinitrophenol. However, at high concentrations of the drug the reversal was either partial or negligible. High concentrations of the drug stimulated O_2 uptake with ascorbate+cytochrome c as substrate. The concentration of the drug required for 50% stimulation was