CONCLUSIONS
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1. Lethal concentration giving 50% mortality (LC$_{50}$) was determined in static bioassay system as stated Doudoroff et al. (1951).

2. LC$_{50}$ values were determined by probit analysis and Dragstedt-Behren's method as described by Carpenter (1975). LC$_{50}$ value for 40hrs. to Phenthoate to Pila globosa was found to be 14.22 ppm.

3. After determining the LC$_{50}$ values some physiological and biochemical studies in the snail, Pila globosa were conducted at lethal 14.22 ppm and sublethal 4.8 ppm concentrations.

4. After carbohydrates, lipids form main energy source in snails. In the present study several lipid parameters were studied in order to understand the toxic impact of Phenthoate at cellular and subcellular levels. Total lipids, phospholipids and cholesterol were found to be increased whereas neutral lipids, glycerol and fatty acids decreased significantly in foot, mantle and hepatopancreas tissues of the snail, Pila globosa after exposure to lethal and sublethal concentrations of Phenthoate. These alterations observed in the tissue lipid parameters of snail, Pila globosa clearly indicate that there is turnover of lipids along with other metabolites like carbohydrates and proteins.
5. The tissue specific triglyceride acyl hydrolase and phospholipase showed an increase and decreased activity levels respectively in Phenthoate exposed snails.

6. In the present study it is observed that though the process of lipogenesis and lipolysis were visualised, the rate of synthesis of total lipids and phospholipids and cholesterol is increased under lethal and sublethal Phenthoate stress indicating the possibility of mobilization of certain carbohydrate and protein reserves which help in the lipogenesis. Moreover in the Phenthoate exposed snail tissues the rate of synthesis of lipids in the form of total lipids phospholipids and cholesterol is of very high order when compared to the utilization pathways.

So the present trend obtained for lipogenesis under Phenthoate stress in the snail tissues is justifiable.

7. Based on the data presented in chapter IV on tissue respiration and R.Q. values, the author reported a possibility of the conversion of carbohydrate metabolism to fat metabolism in phenthoate exposed tissues of the snail, *P. globosa*.

8. In chapter IV, based on the data of phenthoate exposed mantle and hepatopancreas tissue homogenates as well mitochondrial oxidation of fatty acids, it is reported that a part of the T.C.A. cycle involving NAD-linked dehydrogenase becomes inactivated while the later segment starting from FAD-linked substrate such as succinate is activated. The data of the V chapter further supports that the succinate oxidative metabolism appeared to be predominant in the phenthoate exposed snail tissues and this may be one of the adoptive mechanisms of the Phenthoate exposed snail tissues to overcome the stress condition.
9. The author after assessing the effect of $\frac{1}{3}$rd and LC$_{50}$ doses of phenthoate on the general metabolism of the snail *P. globosa* tissues, further examined the effect of $\frac{1}{5}$ LC$_{50}$, $\frac{1}{7}$ LC$_{50}$, $\frac{1}{10}$ LC$_{50}$ and $\frac{1}{15}$ LC$_{50}$ doses of phenthoate on the hepatopancreas tissues lipase and phospholipase activity and found that the lower doses like $\frac{1}{7}$ LC$_{50}$ - $\frac{1}{15}$ LC$_{50}$ concentrations of phenthoate are tolerable by the snail *P. globosa* and the other doses like $\frac{1}{3}$ LC$_{50}$, $\frac{1}{5}$ LC$_{50}$, $\frac{1}{10}$ LC$_{50}$ and $\frac{1}{15}$ LC$_{50}$ doses are most toxic ones to the snails *P. globosa* over 48 hours and the enzymes of lipid metabolism like lipase and phospholipase may be considered as ideal biomarkers for assessing the toxicity of OP pesticides like phenthoate in experimental models.