CHAPTER VI

CONCLUSIONS

From the work embodied in this thesis the following overall conclusions could be drawn.

1. Bilateral ovariectomy had adverse effects on the structure and functional integrity of the uterus.

2. Acyclicity occurred.

3. Ovariectomized rats treated with three different dose regimens of estrogen and progesterone showed recovery in structure and metabolism of uterus imposed by total ovariectomy. Treatments of Groups I and IIIA were more effective.

4. Ascorbate turnover increased with active mobilization of bound ascorbate to the free form and its increased utilization.

5. Unilateral ovariectomy caused compensatory hypertrophy of the remaining gonad associated with its histological and biochemical changes.

6. The uterine and ovarian changes have been correlated with the changes in ovarian steroids, serum gonadotrophins and feedback on the hypothalamo-hypophysial gonadal-axis.

8. The extracts also showed anti-anabolic, anti-implantation, antifertility and abortifacient effects.

9. The uterine contractility was enhanced and the cycle was irregular.

10. Aqueous extract had more potent effect than the alcoholic and more so on the ovary than the uterus.

11. Withdrawal of treatment caused recovery in structure and metabolism of the ovary and uterus and also restored the fertility.

12. The effects of Carica papaya seed and Vinca rosea leaf were by and large same, but the former was more potent.


14. Extra-uterine and intra-uterine copper wire devices altered the histophysiology of ovary and uterus.

15. Cyclicity was altered and fertility was reduced.
16. The effects are attributed to the spermicidal, anti-implantation effects of copper as well as the local toxic effects of accumulated copper in the tissues.

17. The protective effect of ascorbic acid in copper toxicity has been emphasized.

18. Prostaglandins $E_1$ and $E_2$ altered estrogen and progesterone dependent parameters in ovary and uterus.

19. A growth promoting effect was observed.

20. The redox milieu of ovary and uterus were affected.

21. The two PGs caused partial antifertility effects and acyclicity.

22. The mechanism of action is either direct on the ovary or via hypothalamo-pituitary gonadal axis.

23. Vitamin C deficiency caused marked changes in histology, metabolism of ovary and uterus, disruption of regular cycles, reduction in uterine contractility and fifty percent reduction of fertility.

24. The metabolic importance of vitamin C in female reproduction have been elucidated.
Based on the work presented in this thesis, the following investigations could be undertaken to further evaluate the efficacy of the contraceptive techniques used and the repercussions of nutritional deficiencies on reproductive functions.

1. Detailed studies on different estrogen and progesterone combinations should be undertaken to develop a safe dose regimen of a contraceptive.

2. Administration of ascorbic acid along with the steroids would help in lowering the dose of the steroids as the former simulates the anabolic action of the latter.

3. The precise mechanism controlling compensatory hypertrophy of gonads ought to be investigated.

4. The effects of plant alkaloids as potential antifertility agents should be investigated.

5. Studies on hormonal profiles, electrolyte concentrations in uterus need to be carried out.

6. The reversibility studies should be extended till complete normalcy is restored.

7. The side effects on liver, kidney, adrenal and brain functions should be studied.
8. Toxicity studies in detail need to be done.

9. Development of a copper device which would cause least side effects ought to be investigated.

10. The effects of Cu on vital organs, in light of copper toxicity and the role of ascorbic acid should be studied.

11. Prostaglandins are used as abortifacients and therefore their manifold effects in the female reproductive functions must be clearly understood.

12. The implications of vitamin C deficiency and contraceptive treatments ought to be investigated.

13. The role of ascorbic acid in female reproduction needs to be further elucidated in the light of recent data.