CHAPTER 6

SUMMARY

The present research work communicates the pathological changes in haemopoietic system (lung, trachea, heart and spleen) due to natural infections and hematology on certain parameters in healthy quails in Japanese quails (*Coturnix coturnix japonica*) with special reference to Durg District area.

A total 501 quails were observed. Live healthy quails were used for evaluation of hematological values of Hb, PCV, Total RBC Count and Total WBC Count and fecal sample observations. Dead quails were used for histopathological observations. Ingesta of dead quails were also observed for parasites/protozoans.

Results indicated that:

1. The young quails (age ranging from 1-4 weeks) and older quails (age ranging from 20-24 weeks) showed lower values for all hematological parameters studied than the normal adult quails (age ranging from 5-19 weeks).

2. Heatstroke affected quails showed elevated values of Hb, PCV, Total RBC Count and Total WBC Count than the normal values.

3. Coccidial infection decreased the values of all the hematological parameters except Total WBC Count which was elevated.

4. Mortality was 40% in case of heatstroke and 15.62% in case of coccidiosis.
5. Observation of fecal sample/ingesta revealed that *Eimeria* species is the causal organism for coccidiosis.

6. Pathological alterations were found in all the four tissues under taken for observation. Pathological alterations were also seen in intestine in case of coccidial infection.

- Quails suffering from coccidiosis showed enteritis and hemorrhage in intestine.
- Out of 501 naturally dead quails 343 samples revealed different pathological conditions in various organs. 207 samples (41.31%) revealed different pathological conditions in lungs, 24 samples (4.79 %) showed different pathological alterations in trachea; 82 (16.36%) samples had cardiac lesions and 30 samples (5.98 %) were having affected spleen.

- Different pathological conditions found in concerned organs were as follows:
  - **Lung** showed different types of pneumonic changes which were: Suppurative pneumonia (70 cases, 33.81%), Interstitial pneumonia (40 cases, 19.32%), Fibronious pneumonia (12 cases, 5.79%), Emphysema (20 cases, 09.66%), Hemorrhagic pneumonia (50 cases, 24.15%), and Broncho pneumonia (15 cases, 7.24%).
  - **Trachea** revealed Tracheitis (18 cases, 75%) and Hemorrhage (06 cases, 25%).
  - **Heart** exhibited Necrosis (43 cases, 52.43%), Endocarditis (20 cases, 24.39%), Edema (03 cases, 3.65%) and Hemorrhagic Endocarditis (16 cases, 19.51%)
  - **Spleen** showed Hemorrhage (06 cases, 20%). Necrosis
(12 cases, 40%), Amyloidosis (02 cases, 6.66%) and Depletion of lymphocytes (10 cases, 33.33%).

CONCLUSION

The investigations and results of the present study indicated that

• The normal hematological values in quail are slightly lower than the reported values. It may be due to local environment, nutrition and management of farm.
• The hematological values increased with age and decreased in older age. The young quails (1-4 weeks of age group) and older quails (20-24 weeks of age group) showed lower values for all the hematological parameters than the adult quails. This confirmed the findings of earlier workers.
• High temperature affects the hematological values. It may cause high mortality. The hematological values (Hb, PCV, Total RBC Count & Total WBC Count) were higher in heat stroke affected quails.
• Quails affected by coccidiosis exhibited slightly lower values for Hb, PCV, Total RBC Count and a little higher value for Total WBC Count.
• Coccidial infections were related with season and age. Young quails were susceptible and older quails were relatively resistant. Coccidiosis was found more during monsoon season. Mortality was 15.61%, which may cause substantial loss.
• A significant number of quails suffered from various pathological conditions in the concerned organs (343/501). The most widely affected organ was lung followed by heart, spleen and trachea, the least affected organ.
• Present investigation indicated that occurrence of pneumonic inflammation were prominent in lung and necrosis in heart.

Certain pre-disposing factors like climatic conditions; stress (especially stress related to temperature), infectious agents and also the ill and unhygienic farm conditions would be responsible for such high % of occurrence of pathological condition.
Suggestions for further work:

To get more pathological information following recommendations are suggested herewith:

- Complete hematological investigations including blood serum parameters can be carried out.

- There is need to study the hematological alterations in relation to different pathological conditions.

- Biochemical as well as immunological studies can be undertaken for further studies.

- There is need to study the specific pathogenicity of different species of coccidian by single oocyst isolation technique and infection with a particular species of coccidia.

- Studies related to isolation and identification of causative organism responsible for various pathological conditions can be carried out.

- Further investigations should be carried out to assess the gravity of diseases in relation to the economic impact which may help to establish the control regimen accordingly.