**Abstract**

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The study of Parasitology, has developed into a multidimensional approach in helminth research such studies includes Physiological, biochemical, surgical, immunological, ecological, phylogenetic and chemotherapeutic aspects, histochemical etc. host parasite relationship is a great importance in the study of Parasitology (Chang).

The parasitism is a natural way of life, among the large no. of organisms and parasite diseases are the major problem leading to morbidity and mortality in the tropical countries and in India also, these problems leading not only in mammals but also in birds, reptiles and fishes. There has been a rich tradition in this world to study the parasites of different types, their structure, life cycle, and pathogenicity to their hosts, diversity parasitic attack, the mechanisms to fight parasitic infections and controlling parasitic infections by using drugs etc., now all have become very crucial. Very less work has been done in the world, where a large number of scientists are engaged in research on all aspects of the life of parasites.

Adult cestode parasites in the gastrointestinal tract of the vertebrate and human beings, It contains a number of parasites. The taxonomic position of the parasites is as follows: Platyhelminthes, Cestoda. The Cestodes parasite that parasitic in human and vertebrates can cause parasitic diseases. Chinese ancestors in Tang dynasty had already been concerned about this. Chao Yuan fang recorded that “… the worm is an inch in length with white colour…” Discussion of diseases origins, 610 A.D. From Zhao (1983) and it is infected by eating the beef that is roasted by porking with mulberry twigs. So we can see that Chinese ancestors had cestode knowledge much earlier. The little problem is that they take the gravid proglottids as the whole worm and had no complete idea about this worm, nor had recognition of the life-history. (Cheng, 2011).

The birds are important component of ecosystem, having a very good food and nutritive value and consumed by many people as
basic food. Besides this birds also enhance the beauty of nature. It
Significant role of the rural economy, as a source of income for small
holder farmers. In addition, both poultry meat and eggs, are affordable
sources of protein, hence chickens play an important role in the
provision of animal protein for the rural population.(Eshetu 2001)
Poultry is bred in family run farms and commercial farms worldwide.
Chickens and eggs provide an important source of animal protein,
minerals and carbohydrates for poor families and can give small cash
income when sold at the market. (Johanne Poulsen 2000). In animal
husbandry now a day’s farmer reared the *Gallus gallus domesticus*
bird for allied business but due to parasitic infection birds are not well
developed. Many problems of helminth impact on the body of animal
host in natural population remain unstudied. (Waghmare,Gomase
2010). As birds are voracious feeder, they consume various types of
food which acquires helminthes infections. The tapeworm causes
great suffering to the birds, which cause high morbidity and
complication and high economic loss to nation. They cause the
diseases like taeniasis, hydatidcyst, hemorrhages, anaemia, diarrhea,
and diphyllobothriasis and disturb ecological balance also. Multiple
helminthiases is common in poultry that are kept extensively while
heavy infestation is common in intensively managed stock in which
they cause severe pains that affect the normal activities of the birds
resulting to death.

On the basis of archaeological and paleoclimatic evidence
most authors consider chickens were first domesticated from the
Indisan and Southeast Asian red jungle fowl (domestic form *Gallus
gallus*) well before the sixth millennium BC and became established in
China about 6000 BC. They were domesticated in India about 2000
BC and introduced to Japan via Korea about 300 BC-300AD. The Iron
Age was the main period for dispersion of chickens throughout
Europe, derived from China via Russia (West and Zhou, 1989). Red
jungle fowl (*Gallus gallus*) is considered the progenitor of the modern
chicken breeds used today in commercial agriculture (Daghir, 1995).
The exact time and place of domestication are unclear and this may have occurred more than once during human history. It's believed that the modern chicken derives from birds kept by the people of the Harappan culture (2500-2100 B.C.), primarily for fighting purposes. (Aengwanich and Tanomtong 2007) These birds were found in central and south India (Gallus g. sonnerati), East India (Gallus g. murghi), Burma and Malaysia (Gallus g. spadiceus) and Thailand and Cambodia (Gallus gallus) (Appleby et al., 1992). The most commonly encountered cestodes in scavenging system is Cotugnia, Raillietina, Davainea, Choanotaenia, etc poultry reared under free range condition are likely to be infected with cestode (tapeworms) all tapeworm of chicken have indirect life cycle with intermediate hosts such as earthworm, beetles, flies, ants or grasshoppers. The intermediates hosts are essential to perpetuate the life cycle and infections are therefore rare in indoor system. (Anders Permin and Jorgen 1998).

Adult tapeworms are found in the intestine of birds which show some direct effects by invasion and destruction of host cells and tissue, by production of toxic substances and metabolites; as well as by producing mechanical obstructions. The indirect effects of cestode infection to birds include reduction in host productivity (weight loss, reproduction etc.); increased utilization of feed and reduction in breeding efficiency, ultimately causing a disease to human being also, so this aspect is having socio-economic impact. Parasitic diseases are among the major public health problems of tropical countries including India. They infect man also severely invading domestic animal and wild life.

Thus, the host parasite relationship results in the gain of one organism and the loss of another and lead to various diseases and disorder. Naturally, it is important to study this relationship, not because of their Parasitological value but for the relative existence of humankind.

Biology and clinical management with the latest clinical and scientific development in haematology. We welcome the contributions
of new workers the growing use databases prompted us to add an overview of printed and electronic resources for haematologists. Technological advances have quickly propelled haematology forward certain diseases primarily affect the blood and or organs that form or destroy blood. The particular branch of medicine that deals with these is termed haematology. Haematology is such an engrossing subject that it is not surprising that haematologist. Haematological studies’ considering that progress in avian hematology is based largely on a few domesticated species (Bounous & Stedman, 2000) the results of this research could be of significative importance as comparative data of avian living in their natural habitat. In general, documents about blood cell characteristics and haematological values of free ranging red jungle fowl are limited. Therefore, the objective of this study was to establish the hematological values of the free ranging red jungle fowl. Basic knowledge from this study is important to assess the general health, clinical pathological diagnosis and in-depth study of this bird.

The thesis entitled "To Study the Prevalence of Cestode Parasites in Gallus gallus Domesticus with Special Reference to Haematological Aspect” which include five chapters

Section A. Taxonomy.
Section B. Histopathology.
Section C. Haematology
Section D. Seasonal Variation.
Section E. Bibliography.

Section-A: Taxonomy deals with taxonomical study of cestode parasites. These studies were based on their morphology and using drawing and light microscope photography. Drawing and measurement were done by camera Lucida. The keys were consulted for identification: Yamaguti 1958. The host G. domesticus (Linnaeus, 1758) was dissected and intestines were examined for cestode infection.
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The species of cestodes are collected from orders viz. Cyclophyllidea and belong to two families viz. Davaineidae and Dilepidinae. The genera which are reported in this part are as follows:

1. **Cotugnia, Diamare**, 1893
2. **Raillietina, Fuhrmann**, 1920
3. **Amoebotania Cohn**, 1900
4. **Amoebotania Remy**, 1952

**Section-B: Histopathology** deals with histopathological study done by standard micro technique procedure to prepare transverse serial section and longitudinal serial section of infection and non-inflectional tissue of host; with scolex attached to the epithelium of mucosa (villi), Scolex also damage the intestinal tissue of host *G. gallus domesticus* (Linnaeus, 1758). The worm attached to the mucosal layer of intestine and invaded the host intestinal tissue. The transverse sections of infected intestine show the damage to intestinal villi and submucosa. Due to the attachment it has disturbed the structure of intestinal region and broken the intestinal villi. Histopathology includes the study of non-infected and infected intestine of host with reference to the cestode parasites.

**Section-C: Haematology** deals with haematological aspects in infected and Normal host i.e. *Gallus gallus domesticus*. The blood was collected from the wing (brachial, metatarsal or cervical) vein where it runs over the muscles surrounding the humerus, With the help of syringes and kept in a bottle containing anticoagulant i.e. EDTA. The blood parameters studies are total erythrocyte count and leucocytes count which was estimated by dilution chamber technique using Hayem’s fluid as diluents (Benjamen, 1985), Total leukocyte count was estimated by the standard dilution technique using diluting fluid (4% glacial acetic acid and two drops of genital) (Talib and Khurana, 1995), Packed cell volume was determined by using Wintrobe tube (Wintrobe, 1934). Haemoglobin percentage is estimated by Sahli method (Sahli, 1962), Differential leukocyte count was done by preparing blood smear and staining with “Leishman stain blue” or Gimsssa stain by
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Mender method. From the value of PCV, Hb, RBC, the MCV (mean corpuscular volume), MCH (mean corpuscular hemoglobin), MCHC (mean corpuscular haemoglobin concentration) were estimation.

It was observed that Increase in WBC count, MCV while decrease in RBC count these parameter of infected *G. domesticus* experiences significant increase and decrease as compare to the normal *G. domesticus* (Normal)

Section-D: Seasonal Variation deals with the seasonal variation of cestode parasites in the host *Gallus domesticus* this part is illustrated with the help of Table June 2009 to May 2011 for the period of two years and their graph. After the analysis of data the present study indicates that the infection of genus *Cotugnia Diamare*, (1893) is high in Rainy season, moderate in summer and low in winter season. Were as slightly deference in genus *Raillietina Fuhrmann*, (1920) and *Amoebotania Cohn*, (1900) infection is high in Rainy season, moderate in winter and low in summer season. Thus it can be concluded that the environmental factors and feeding habitat are influencing the seasonality of parasitic infection either directly or indirectly.

So the present work will helpful to focusing on all the aspects stated above i.e. Taxonomy, Histopathology, Haematology and Seasonal Variation of cestode parasites from Bird (*G. domesticus*) from Aurangabad District.

The systematic list of host with their parasites and parasites with their hosts is also described, in addition to this the list of paper publication

The last Section-E deals with Bibliography.