INTRODUCTION
In Nigeria, a lot of emphasis has been placed on modern poultry production and management using exotic breeds of chickens. Despite this, most of the chickens consumed in the country are local breed purely raised in the villages as free-rangers, particularly in the northern Nigeria where modern poultry production is not well developed (Gadzama & Strivastava 1986).

Gadzama & Strivastava (1986) found that exotic breeds of chickens appeared to be less tolerable to the high environmental temperature and dry condition of the Northern areas. They further inferred that during the hot period, quite a large number of exotic breeds die due to heat stroke while the local breeds have acclimatized to these conditions.

However there are a lot of factors that hinder the development of poultry industry to its full capacity. These factors include poor management systems and diseases. Poultry diseases are the major cause of financial loss in poultry production (Oluyemi & Rober, 1979). Intestinal parasitism is a common problem in poultry especially those rangers, particularly in the northern Nigeria where modern poultry production is not well developed (Gadzama & Strivastava 1986).

The collected tracts were kept separately for the two sexed. The specimens were immediately taken to the laboratory for observation and analysis. At the laboratory each gut was spread on a tray and the different segments identified and tied with a thread. Each section of the alimentary tract was then cut and placed in a separate labelled Petri-dish, slit open and the content washed gently into a Petri-dish. Each washed tract was then scraped to remove the lining membrane. The other organs remaining in the carcass were examined for parasites using binocular dissecting microscope.

Identification of Ascaridia species followed the criteria of Mozgovoi (1953) and Lamaire (1936). That of Gongylonema was based on description by Lamaire (1936) and Fain (1955). Heterakis and Subulura were identified using the criteria adopted by Lamaire (1936) and Soulsby (1965). Tapeworm species were largely determined using the criteria described by Lamaire (1936) and Reid (1962).

RESULTS
Out of the 200 birds examined for helminth parasites, 174(87.8%) were infected with different species. The parasites recovered were, four species of nematodes; namely Ascaridia styphlocerca Stossich 1904, Gongylonema congoense Fain 1955, Heterakis brevispiculum Gendre 1911, Subulura brumti Lopez-Neyra 1922 and five species of cestodes; Raillietina echinobothrida Megnin 1880, Raillietina tetragona Molin 1858, Choanoaetenia infundibulum Bloch 1779, Raillietina magnunimida Jones 1930 and Raillietina cesticillus Molin 1858 (Table 1). Many of the birds harboured more than one species of helminth parasites.

Keywords: Helminthes, Prevalence, Local chickens, Bauchi, Nigeria
Prevalence of species
Table 1 shows the percentage prevalence of the species and the location where they occur. Gongylonema congoense, H. brevispiculum and S. brumpti were the most frequently encountered nematodes in the survey, while Ascaridia styphlocerca was rare and uncommon.

Cestodes were the most abundant of the helminth parasites. The most species were R. echinobothrida, R. tetragona and R. cesticillus while C. infundibulum was a rare species. Presence of R. maginumida appears to be the first country report for the species in chickens in Nigeria.

**TABLE 1: PREVALENCE OF HELMINTH SPECIES AND SITE OF RECOVERY IN BIRDS EXAMINED.**

<table>
<thead>
<tr>
<th>Parasite</th>
<th>Location</th>
<th>No. of birds infected</th>
<th>% infected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascaridia styphlocerca</td>
<td>Intestine</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>Heterakis brevispiculum</td>
<td>Caeca</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>Gongylonema congoense</td>
<td>Crop</td>
<td>61</td>
<td>40.5</td>
</tr>
<tr>
<td>Raillietina echinobothrida</td>
<td>Intestine</td>
<td>84</td>
<td>42</td>
</tr>
<tr>
<td>Raillietina tetragona</td>
<td>Intestine</td>
<td>77</td>
<td>38.5</td>
</tr>
<tr>
<td>Raillietina magninumida</td>
<td>Intestine</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Subulura brumpti</td>
<td>Caeca</td>
<td>31</td>
<td>15.5</td>
</tr>
<tr>
<td>Choanotaenia infundibulum</td>
<td>Intestine</td>
<td>7</td>
<td>3.5</td>
</tr>
<tr>
<td>Raillietina cesticillus</td>
<td>Intestine</td>
<td>21</td>
<td>10.5</td>
</tr>
</tbody>
</table>

**DISCUSSION**
This study has shown that domestic fowls in Bauchi are heavily parasitized by a large number of helminth parasites. A feature of this survey was the absence of trematodes agreeing with several workers (Fabiyi 1972, Gadzama and Strivastava 1986, Oyeka 1989, Fathu et al. 1991; Luka & Ndam 2000, Yorijo et al., 2005) in different parts of Northern Nigeria, who similarly found no trematode infestation among the birds examined. The absence of these worms could be due to their complex life cycles requiring at least an intermediate host which is aquatic. The absence of water is helping to break the life cycle and hence reducing the spread of the worms.

Davainea proglottina, a common tape worm in many parts of the world was also not encountered during the present survey, a finding similar to those of (Fabiyi 1972, Gadzama & Strivastava 1986, Luka & Ndam 2007, Yorijo et al. 2005, Adang et al. 2008) even though Oyeka (1989) reported a prevalence of 3.3% of the parasite in chicken in Anambra State. The intermediate hosts of this small tapeworm are certain arionidid and limacidid slugs and helbicilid, zonidid, physidid and succineidid snails (Fabiyi 1972). It is possible that these are scarce or do not occur in this part of the country.

Among the nematodes known to occur commonly in chickens, Capillaria sp. was also not recorded in this study. This further conforms to the finding of Fabiyi (1972), Gadzama & Strivastava (1986), Oyeka (1989), Fathu et al. (1991), Luka & Ndam 2007) and Yorijo et al. (2005). The reasons for the absence of this parasite could not be explained.

Higher cases of Ascaridia and Heterakis sp. were observed by Fabiyi (1972) than in this report. One reason could be the source of the birds examined by him, and could have originated from deep litter system which favours infection with these species.

The generally high prevalence rate observed in this report could be due to the fact that birds kept under free range nowadays are not normally fed with grains in the morning (which use to be the practice in the early years) before going out for grazing. The lack of this practice could be attributed to the present poor economic condition of the country. This therefore makes the birds intensify their feeding on the invertebrate hosts, thereby increasing chances of becoming infected with those species requiring intermediate host. The high percentage prevalence recorded in most of the cestodes and Gongylonema congoense which require dung beetles and cockroaches as intermediate hosts supports this assertion.

In a study conducted in Ghana, Hodasi (1969) revealed that susceptibility of male and female domestic chickens to infections are equal. However, the lower prevalence observed in females than males in the present study could be due to the fact that female birds reduced their feeding range during incubation period and concentrate more on the grains and food remnants being served to them (as most farmers take good care of them by giving them food and water to compensate for the time spent during incubation), hence reducing the chances of infection. Also, male birds go far in search of food, increasing the possibility of picking infections. Further work is required to support the above reasons. Some of the nematodes and cestodes found require dung beetle, grasshopper, and cockroach as well as crustaceans, earthworm and snail as intermediate hosts and could constitute problems in chickens reared on free range.

**AKNOWLEDGMENTS**
We appreciate the assistance of Mallam Umar Galadima of Department of Biological sciences, Gombe State University and Mr. Zamani of Abubakar Tafawa Balewa University, Bauchi, Biological Laboratory for observation and identification of the parasites. We also appreciate the assistance of the workers at the dressing unit at Muda Lawal and Wunti Markets Bauchi for collecting the specimens.

**REFERENCES**


