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A GUINEAFOWL RESEARCH PROGRAM IN NIGERIA

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INTRODUCTION

The Wildlife and Range Ecology Division of the Kainji Lake Research Institute, Kainji, Nigeria, has recently initiated a research programme on guineafowl *Numida meleagris galeata* (Pallas). The purposes of this communication are to familiarise ornithologists in West Africa with the program and to solicit their help in making field observations on guineafowl in West Africa.

There are two species of guineafowl in Nigeria; the Crested Guineafowl *Guttera edouardi* is restricted to the rainforest and derived savanna zones, and the Helmeted Guineafowl is found throughout the hinterland savannas. The major problems facing forest Crested Guineafowl are loss of habitat resulting from increasing urbanisation and from farmland development for cocoa, oil palm, rubber etc., coupled with uncontrolled hunting. Wild stocks of the Helmeted Guineafowl are widely distributed throughout Nigerian savannas, but are being threatened by over hunting during the dry season and egg collection during the rains.

In many villages in the savanna areas of West Africa guineafowl are kept semi-wild and free ranging. At present Nigeria, the most populous country in tropical Africa, continues to import meat as poultry and egg prices rise. Because of inability to meet the animal protein needs through present levels of domestic meat production, the Government is encouraging food production by means of the recently launched programme "Operation Feed the Nation" (OFN), and it is because of that that our researches on feral and wild guineafowl are being developed.

OBJECTIVES AND SCOPE

It is in line with the OFN programme that research on the conservation and improved utilization of guineafowl has been initiated by the Kainji Lake Research Institute (KLRI). Little is known about the biology of wild or feral stocks of guineafowl in Nigeria (Fabiyi, 1972), although some studies have been made elsewhere in Africa (Steyn 1967; Mentis, Poggenpoel & Maguire 1975; Swank 1977), and there is a considerable body of literature on the management of guineafowl else-

where (Blum, Guillaume & Leclercq 1975; Fracanzani 1966; Oothuizen & Markus 1967).

KLRI research aims to: (a) investigate the biology and ecology of *N. m. galeata*; (b) assess its abundance in the wild and under semi-domestication; (c) study the species' social organisation and population dynamics; and (d) identify the health and socio-economic factors essential in establishing guineafowl as a producer of meat and in conserving and exploiting the bird.

Ecology

At present studies of soil, vegetation, and general habitat requirements of guineafowl in the Kainji Lake Basin are being carried out in the Kainji Lake National Park and along the shoreline of Kainji Lake. Information on the requirements of feral guineafowl is being sought from villages near Kainji and Yelwa. At KLRI a stock of 30 wild-captured, 50 feral and 100 domesticated "Golden Sovereign" guineafowls has been established. Chicks are being raised on varying feed regimes.

The kinds of field observations being solicited by the author include sight and breeding records together with any further relevant notes that the observer might have. They will supplement data that we are already accumulating on diet, clutch size and productivity, behaviour and social organisation. This will be the basis for recommendations on conservation of wild birds, and improved utilization of domestic ones.

Parasitology

At the Veterinary Research Institute, Vom, Nigeria, feral guineafowl were found to be infected with cestode worms of the genera *Raillietina**, *Ascometra*, *Cotugnia*, and *Porogynia*, with the nematodes *Gongylonema**, *Capillaria*, *Acuaria**, *Habronerma*, *Tetrameres**, *Strongyloides*, *Ascaridia**, *Heterakis** and *Subulura**, and the acanthocephalan *Empodius* (Fabiyi, 1972b). The asterisked seven of these fourteen internal parasites are known also to infect chickens. Thus there is a strong possibility that guineafowl could serve as an alternative host or disseminator of parasites to chicken if they are raised in the same range (Fabiyi, 1972a).

At KLRI fleas and mites, intestinal parasites (cestodes, nematodes and bacteria) and blood parasites (*Plasmodium*, *Haemoproteus*, *Leucocytozoon*, *Babesia*, *Salmonella*, and *Lankersterella*) have been isolated from the wild and feral birds, and they suggest that parasitic infections are a major factor maintaining the bird at its consistently low level of productivity. Any collection of external and internal parasite could augment our present list or emphasise the extent and frequency of infestation. Specimens will be acknowledged and when identified the results will be communicated to the collector. Specimens may be sent in solution of 5% formaldehyde or 70% alcohol in

appropriate size specimen bottles.

Productivity

Offiong (1976) attempted raising guineafowl from the Potiskum area of north-eastern Nigeria, but he was unable to keep a captive stock because their productivity was so low. In 1973 he imported chicks of the commercially available "Golden Sovereign" guineafowl marketed by Pollastra Pulham Ltd., U.K. This exotic breed reputedly has high productivity; they are slightly bigger than the local guineafowls but like them lay eggs only in the rainy season. Some "Golden Sovereigns", obtained from Vom, have been established at the KLRI aviary in New Bussa, and are freely interbreeding with the local guineafowl. The exotic chicks were raised for 15 weeks on 16%, 18% and 20% protein levels. The metabolic efficiency was highest among birds fed on 16% protein and the indications are that, although the rate of feed intake and growth is low for lower levels of protein, the birds can handle poor (non-protein rich) feed to considerable advantage. As such they appear suitable for consuming farm wastes and roughages.

SOCIO-ECONOMIC CONSIDERATIONS

The results of a questionnaire confirm that there are no taboos against raising or eating guineafowl among the various ethnic and religious groups in Nigeria. It has also been established that feral guineafowl raised in the north and transported to southern Nigeria fetch high prices (Ayeni and Oyedipe, 1977). A market survey of guineafowl consumption was recently carried out at guineafowl market stalls in the large towns of Ibadan and Ilorin. It showed that in the north where the guineafowl is commonly farmed and hunted, it is more widely consumed than in the south. But in the south the bird is already gaining greater acceptance, and the potential of guineafowl as new source of meat in more homes is therefore quite clear. When respondents were asked whether they preferred (1) free-ranging guineafowl, (2) domesticated guineafowl, (3) free-ranging chicken, or (4) chicken raised on agricultural farm, they showed a preference for guineafowl and rated chicken low. At Ilorin the reason for preferring free-ranging guineafowl was that the meat is stronger and more palatable. In Ibadan the reason for preferring domesticated to free-ranging guineafowl was that domestic birds are "neater". The Nigerian palate favours lean meat with a natural flavour ("bushmeat") which is chosen in preference to fatty meat. The high crude protein (88%) and moisture (75%) content; and the low fat (8%) and ash (4%) content of guineafowl meat makes for its high rating in Nigerian diets.

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