ABSTRACT OF INAUGURAL LECTURE

NAME: PROFESSOR JOHNSON OLAYIDE ADEJINMI

TITLE: PARASITES: PEDESTAL THREATS TO PUBLIC VIGOUR

Parasites are organisms that depend on other living organisms (hosts) for shelter and source of food, and in return caused damages and unwanted deaths of hosts. The dependence may be diverse, partial or total at certain stages or throughout the lives of the two associates [until death do them part]: the parasite (benefiting organism) and the host (non-benefiting organism). Animal parasites generally include: helminths, protozoa and arthropods and they are categorized as Endoparasites – those resident on the inside of the host (helminths and protozoa) and Ectoparasites - those resident on the external surface of the host (arthropods).

This lecture focused on threats posed by parasites (helminths, protozoa and arthropods) to profitable animal production and human well-being, and outlined measures to ameliorate their effects. Using prevalence and laboratory studies, we carried out investigations on helminths and protozoan cysts in the faeces of zookeepers and animals at the University of Ibadan Zoological Garden, helminth parasites of some wildlife in Asejire Game Reserve, and the public health importance of market meat exposed to refuse flies and air-borne micro-organisms. Our studies on arthropods of Veterinary/ Medical importance include Bionomics (effects of temperature, water flooding, photoperiod and sodium chloride solution) of dog ticks: *Rhipicephalus sanguineus* and *Haemaphysalis leachi leachi* in Ibadan, Southwestern Nigeria; *Culicoides* species and *Anopheles gambiae* (vector of African malaria).

The results of these studies showed that helminths and protozoa constitute a major impediment to efficient and profitable livestock production; there is possibility of transmission of parasites from humans to zoo animals and vice-versa because of the frequency of contact between humans and non-human primates than with other zoo animals that are less approachable; the consumers of market meat exposed to refuse, flies and air-borne microorganisms and improperly processed wildlife meat "(bush meat)" run the risk of infection with helminths and other pathogenic organisms.

The results on bionomics of dog ticks showed that temperatures of 25^0C-30^0C are optimal and favourable for dog ticks' survival and hatchability of their eggs; flooding up to five days did not affect the survival of dog ticks, but flooding would have to be more than five days to have a deleterious effect on their eggs. Engorged adult female dog ticks did not oviposit neither did their eggs hatched when immersed in saturated sodium chloride solution. It could therefore be an effective mechanism of controlling dog ticks.

The results of studies on *Culicoides* species showed that out of fifteen species identified, four (*Culicoides oxystoma*, *C. schultzei*, *C. subscultzei* and *C. nevilli*) were reported for the first time in Nigeria, bringing the total number of *Culicoides* species in the country to thirty-seven. Transposable element *Topi* 2 in *Anopheles gambiae* mosquitoes was the only element observed from Bakin-Kogi, Nigeria and can be employed as gene drive for production of transgenic mosquitoes that will permanently alter standing populations of mosquitoes such that they are incapable of serving as vectors for parasites and pathogens.