References

Bratton, M., 1989, "Beyond the State: Civil Society and Associational Life in Africa" *World Politics*, 41 (3,

Fowler, A., 1991, "The Role of NGOs in Changing State-society Relations: Perspectives from Eastern and Southern Africa", *Development Policy Review*, 9(1,

–, 1995, "NGOs and the Globalisation of Social Welfare: Perspectives from East Africa. In Semboja, J. and O. Therkildsen (1995a,

Gibbon, P., ed., 1995, Liberalised Development in Tanzania, Uppsala: Nordiska Afrikainstitutet.

–, 1995b, "Merchantisation of Production and Privatisation of Development in Post-Ujamaa Tanzania. In Gibbon, P., 1995a,

Johns Hopkins University, 1996, The John Hopkins Comparative Non Profit Sector Project, Field Study 8.

Haberson, J., 1994, "Civil Society and Political Renaissance in Africa". In Haberson et al. *Civil Society and the State in Africa.* Lynne Rienner Publishers.

Hyden, G., 1993, "Governance and the Study of Politics" in G. Hyden and M. Bratton (eds,, *Governance and Politics in Africa.* Lynne Rienner Publishers.

–, 1995, "Bringing Voluntarism Back in: Eastern Africa in Comparative Perspectives", in Semboja, J. and O. Therkildsen (1995a,

Kiondo, A., 1995, "When the State Withdraws: Local Development Politics and Liberalisation in Tanzania" in Gibbon (1995,

Munishi, G., 1995, "Social Services Provision in Tanzania: the Relationship Between Political Development Strategies and NGO Participation", in Semboja, J. and O. Therkildsen (1995a,

Robinson, M., & N. Swainson, 1998, *Tanzania - Good Governance.* Assessment, IDS Sussex.

Semboja, J. & O. Therkildsen, eds., 1995a, Service Provision Under Stress in East Africa, Copenhagen: Copenhagen Centre for Development Research.

–, 1995b, "A New look at Service Provision in East Africa", in Semboja, J. and O. Therkildsen (1995,

Sivalon, J., 1995, "The Catholic Church and the Tanzanian state in the provision of social services" in Semboja, J. and O. Therkildsen (1995,

World Bank (1989, *Sub Saharan Africa: from crisis to sustainable growth.*

–, 1997, *World Development Report: The State in a Changing World.*

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Animal Husbandry in 19th Century Nigeria: A Study of the Etsako Practice

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Introduction

A highly neglected area in the economic history of Nigeria, and even of West Africa, is animal husbandry. For example, in R.O. Ekundare's 450 page book *Economic History of Nigeria*, only about a page is devoted to livestock.[1] A.G. Hopkins 336 page *Economic History of West Africa has* only half a page on livestock.[2] G. Ogunremi, in his chapter contribution to *Topics on Nigerian Economic and Social History*, was more interested in the use of animals as beasts of burden than on animal husbandry, since his focus was on transportation.[3] This neglect is surprising, because animals have a long history in Nigeria as beasts of burden,[4] sacrificial objects[5] and table fares.[6] Therefore the history of animal husbandry, showing developments in rearing animals for their various uses, is an important aspect of Nigerian economic history. This paper is, therefore, an attempt to redress part of the neglect.

The paper is also a micro-study of animal husbandry in 19th century Etsako, during the last century of her pre-colonial history. Studies of pre-colonial African economic activities are difficult because of the scarcity of relevant source materials. Even the oral sources that are available, and their accurate interpretations, are threatened by the rapid rate at which knowledgeable elders are dying off.[7] Economic historians of Africa must therefore focus more on the pre-colonial period so as to reconstruct Africa's economic activities for posterity, before the sources get permanently lost. Detailed expositions in micro-studies, such as this, show that contrary to the views of Trevor Roper, pre-colonial livestock activities were not the result of the gyrations of barbarous tribes,[8] rather they were often based on scientific

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principles that, as will be seen below, are now being belatedly confirmed and appreciated. Developing an increased appreciation of pre-colonial knowledge systems is another aim of this paper.

Also, micro-studies such as this are very useful for three reasons. First, they provide details that are usually difficult to find. Second, they correct distorting generalisations, and so facilitate the writing of a more accurate economic history of Nigeria. Third, they also provide data for works of synthesis. It is therefore hoped that this work will encourage other academics to contribute to the writing of the history of animal husbandry in other Nigerian or African communities and to facilitate the writing of an accurate history of animal husbandry in Nigeria.

Finally, as Etsako studies are still in their infancy, compared to those on Igbo, Yoruba, or even Benin, there is a need for scholars to build knowledge of the Etsako in their various fields. This paper is therefore an effort to deepen the understanding of animal husbandry, an important part of the Etsako economy.

Who are the Etsako? They are a small Nigerian community, made up of three local government Areas, namely, Etsako West, Etsako Central, and Etsako East, located in the north-eastern part of Edo State of Nigeria. The area is bounded in the north by Kogi and Kwara states, in the west by the Owan and Akoko-Edo peoples, in the south by the Esan and in the east by the River Niger. In pre-colonial times the Etsako were identified by the practice of couples splitting each other's incisor teeth as a sign that they were married. This is why the people were called Etsako, meaning those who split their teeth. This practice was replaced by wedding rings in the colonial and post-colonial periods.[9]

In our study of 19th century animal husbandry among these people, we shall first discuss how the Etsako acquired livestock, followed by a study of their breeding techniques, as well as an analysis of available veterinary services and their efficacy. Then we shall examine the disposal method of stock, and conclude with an appreciation of the evolutionary trends and scientific components of 19th century Etsako animal husbandry.

Acquisition of Livestock in 19th Century Etsako

The livestock that were reared in Etsako during the last century of pre-colonial era were fowls, ducks, goats, pigs, dogs and sheep. However,

because of space limitations, we shall focus only on fowls, goats and sheep in this paper. Unlike northern Nigeria,[10] cattle were not common in this area. It has been shown elsewhere that they were introduced by the Nupe in the closing decades of the nineteenth century.[11] Therefore, cattle were not generally reared as livestock in 19th century Etsako.

There were two ways for a farmer to gain ownership of livestock. One was by direct acquisition, meaning gift or purchase. In this case, one had complete control over the livestock and their offsprings.[12] The other was what J.O. Ijoma has called the contract of agistment, or livestock tenancy. In this case someone took care of the livestock and shared the offspring with the livestock owner. The advantage rested with the owner, for the sharing of offspring was always at the ratio of two to one in favour of the owner. Thus, a goat that gave birth to only one offspring at a time had to produce three times before the caretaker could acquire one. Death of the animal or its return to the owner terminated the contract of agistment.[13]

This arrangement was very popular in pre-colonial Etsako because it adapted the rearing of livestock to the low capital formation of the people. The adaptation was a general phenomenon in many Etsako pre-colonial economic activities. For example, in the exchange of goods, trade by barter was often resorted to as a means to complement the use of all-purpose means of exchange, such as cowries and brass rods.[14] In agricultural activities, a contractual association in which members worked for one another in rotation was adopted in place of wage labour.[15] Thus, investment capital was not needed in order to engage in economic activities like trade and agriculture. In the same way, through the contract of agistment, many Etsako people whose incomes were generally low at this time were able to acquire livestock without the necessity of raising the initial capital for buying them. It was thus advantageous to both the caretaker and the owner of the livestock, though the owner gained more.

Outright gifts were only sparingly given to avoid transferring absolute advantage from the giver to the recipient. Also, no one went to the market to buy livestock except during emergencies, and that was only if one had money. For those who wished to breed livestock, the necessity to purchase was not high. There was always a relative or friend with whom one could make a contract of agistment and thereby acquire livestock.[16] The contract of agistment, therefore, was the commonest means of acquiring livestock in pre-colonial Etasko. Outright gifts and purchases were comparatively less common.

Breeding Techniques

The free-range technique was adopted for tending livestock in nineteenth century Etsako.[17] In the context of our period, this technique was reasonable. For by trial and success the Etsako discovered that penning livestock was uneconomic and counter-productive. Livestock owners had great difficulty providing penned animals with enough food and mineral concentrates to sustain them and to keep them healthy. Also, the poor availability of veterinary services increased the risk of disease when animals were crowded. Besides, rotational bush fallowing, the main means of farming, allowed the soil to recover its fertility, reducing the need for farm-yard manure. Therefore, it was not necessary to confine livestock in order to obtain manure.[18]

Free range was resorted to because of its obvious advantages. Though mortality was a problem, free range was a cheap and effective method for keeping and breeding livestock. Animals were usually fed in the morning and evening with grains, left over foods, and food wastes like plantain and yam peels. The main purpose was not to feed them but rather for the left over food to act as a homing device. If a recognizable sound was made as the animals were fed, as soon as this sound was repeated they would congregate in the compound expecting to be given food. Farmers used this type of Pavlov's simultaneous conditioned response[19] to bring livestock together, at least every morning and evening. During this time the farmer would inspect the health of his stock, take note of missing animals, and take immediate remedial action. Some of the advantages of confining animals were thus also gained. For most of the day, however, livestock foraged for food in nearby bushes, thus saving the farmer the feeding costs he would have incurred by confining them. Livestock also acquired some of the vitamins necessary for their health by eating green leaves and grass. Open range, in contrast with confinement, thus greatly reduced the cost of keeping and breeding animals.[20]

Fowls, however, were given extra care during their breeding period. A farmer had to make sure that he had a crowing cock, or that there were some in nearby houses. This was usually easy, for everyone needed cocks to monitor the passage of time. But sometimes epidemics wiped out most of the fowls in a neighbourhood, making cocks very scarce. If this was the case, as soon as a hen started to crackle, signifying its readiness to lay eggs, a farmer's children had to take it every morning to a compound where there was a cock, tie one of its legs to a stake with a long rope to enable it to forage

for food, and return every evening to fetch it. This continued until the farmer was satisfied that cocks had crossed the hen several times and that it was at the point of laying. However, if he had the money, the farmer simply bought a crowing cock in the market. But given the low capital formation of the people, the former method was often resorted to.[21]

Generally, when a farmer observed, by the frequent crackling, that his hen was at the point of lay, he prepared a laying place for it. This was usually a thick layer of sand overlaid or arranged with dry grass. A more urgent crackling accompanied with an unusual agitation was interpreted to mean that the hen was looking for a place to lay an egg. It was then caught and enclosed in the prepared laying spot with a basket. Not only did the porosity of the basket guarantee adequate ventilation, but it also enabled the farmer to see the laid egg, as well as preventing a premature release of the fowl.

The prepared laying spot was usually away from normal domestic traffic or household disturbances. If no place in the kitchen was suitable, any corner of the house or compound protected from rain would do. Once the hen had settled in her laying spot and was allowed to leave on her own, she always traced her way back to the laying spot.[22]

In many cases, fowls laid their eggs in nearby bushes and later reappeared at home with their young ones. The danger here was that snakes might swallow the eggs or kill the fowls. During the rainy season, the eggs might not hatch if they got wet.[23] The local people solved the problem of a hen laying in the bushes by closely monitoring their fowls. In this way it was possible to track them to their laying places. If the hens laid in the bushes, the eggs were brought to safer and more conducive places for hatching and the fowls were covered under baskets. Once they laid in the new places, the fowls always returned to them. But if, on the other hand, the fowls had started incubation, the transfer could make the fowls reject their eggs. All that was left for the farmer to do then was to protect the fowl and eggs as best as he could. However, fowls could be prevented from laying in the bush by regular morning and evening feeding and the alert observation of farmers.[24]

The total number of eggs laid by a fowl could be greatly increased through a farmer's intervention. Removing some eggs immediately and leaving one or two every time the fowl laid an egg greatly increased the hen's productivity. When the fowl was seen to be about to start incubation, the eggs removed were returned. This technique increased the laying power of hens by about

200%. From an average of not more than eight or nine, hens could in this way be encouraged to lay over twenty-four eggs. Modern experimental tests have confirmed this.[25] A problem that sometimes developed was that if the eggs became too many, the fowl might not be able to incubate them effectively. As fowls normally stayed on their eggs for about twenty-one days, with about two or three days of grace, the eggs that did not hatch by the twenty-fourth day would most likely be abandoned. Thus if the system was adopted only for the hatching of eggs, it could be counter productive. But it was often tried on hens that were known to be good brooders. On the whole, however, it was used to increase the production of eggs, either for consumption, ritual offerings, or sale of day old chicks.[26]

The use of this technique to increase the production of day old chicks appears to have been a calculated risk. Success with it was greatly improved by a careful preparation of the laying/hatching spot. A thick layer of sand, fringed by a thick cap of grass, acted as heat insulators that prevented the undue diffusion of heat away from the eggs. The incubation spot was also often carefully chosen to avoid unnecessary cold draughts of air that could lead to an undue loss of heat. Food was provided for the fowl as soon as she left the eggs. This reduced the time it took for her to forage for food and encouraged it to return quickly to the eggs. While leaving the eggs was an aspect of temperature control and an avenue for the fowl to exercise and relieve itself, the exposure of the eggs to cold for too long was not in the interest of the hatching process, especially if the eggs were many. With exposure, the temperature fell, and it took a long time to raise it to an effective level.

Breeding goats and sheep was simpler. As with fowls, morning and evening feedings conditioned them not to go far from the house and encouraged their return to sleep in the open courtyard of the compound. Yam, plantain, fermented cassava peelings and grains were common feeds. Special care was given to pregnant goats and sheep. Thus, if it became necessary to restrain them, it was preferable to tether them with a rope tied to one of their fore legs rather than on the neck. In the latter case, the strain of the struggle for freedom could lead to miscarriage. Animals were valued according to the number of offspring they could produce at one time. Thus, those that produced triplets and quadruplets were specially prized because they helped to increase stock very rapidly.[27]

Veterinary Services in Nineteenth Century Etsako

The mortality rate for animals was highest during the rainy season, usually from March to October.[28] This could be explained by the fact that the wet and humid conditions promoted the growth of microbes and viruses. As in the open range system, fowls and animals were not protected from the weather. They often got wet from the torrential rains. This lowered their body temperature and reduced their resistance. They therefore contracted many diseases at this time. As these illnesses were usually contagious, one sick fowl or animal could transfer its illness to other animals. Since veterinary services were rudimentary, though not absent as we shall see below, illnesses often developed into epidemics that wiped out thriving broods of fowls and flocks of sheep or goats.

Local people, however, tried hard to protect their fowls within the limits of their veterinary science. For example, a mixture of ground pepper (*Capsicum frutascens*) in water was often given to sick fowls.[29] Recent studies show that pepper is a spice rich in vitamin C, with some mineral and vitamin A and E content. Its peppery (hot and pungent) tastes and smell are due to its capsaicia content, a volatile phenolic compound.[30] The local people knew, by a long period of trial and success, that it raised body temperature. They therefore used it to treat attacks of cold and catarrh. Ground pepper generated internal heat and counteracted feverish manifestations during the cold wet season. By long observation, Etsako farmers came to the conclusion that fowls generally got sick because of the cold, and so they were treated with pepper. Some fowls got well as a result of this treatment. Others did not. As was often the case in the administration of traditional medicine, dosage was not considered in the treatment and some fowls probably died as a result of an overdose of pepper.[31] However, the treatment was an elementary form of veterinary science in which experiments were first conducted on human beings and then, if successful, the treatment was transferred to fowls. Within acceptable limits, the treatment must have been effective for it was probably its success rate that promoted its recurrent application.

Etsako farmers also had a good idea of preventive veterinary medicine. The people discovered that when fowls, during their feeding periods, drank water in which *akaun* (*potassium hydroxide*) was dissolved, they rarely contracted an illness.[32] Perhaps the adverse effects of overdoses were avoided by the length of the intervening period between treatments. That is, dosages were only administered in the morning and in the evening. The use

of *akaun* as a medicine is worth following up by agricultural scientists in order to discover why and how *potassium hydroxide* worked as a prophylactic and whether it can still be adopted for poultry disease management today.

The treatment of goats and sheep was slightly different. It seems that the people had not yet discovered a preventive medicine, as in the case of fowls. It also appears that it had not yet occurred to farmers to try out *potassium hydroxide* on goats and sheep. However, they had four standard treatments. Two of these involved the pepper treatment, as was the case with fowls. The pepper was applied if the animal appeared to be suffering from the cold. The third involved palm oil to treat skin diseases. This was done by anointing the affected parts with palm oil.[33] Recent studies show that palm oil has a high vitamin A content, which accounts for its reddish colour. Its efficacy therefore probably derives from the fact that vitamin A keeps the skin healthy.[34]

The fourth was a bitter leaf *(vernonia Amygialina)* treatment. This treatment was used when the animal appeared to be suffering from diarrhoea. Bitter leaf was squeezed into water and the animal was forced to drink it.

Etsako veterinary science may appear elementary by modern standards but its historical usefulness should be judged within the context of the period in which it was used. This is because judging the past with the norms of the present is a distortion of history, which Commager calls the parochialism of time.[35] However, the Etsako treatments were a rudimentary form of animal science based on experiments with human beings. We saw above that foods spiced generously with pepper facilitated relief, for indigenes, from attacks of fever and catarrh. In the same way, stomach disorders were often treated with drinking bitter leaf (*vernonia Amygialina*) squeezed into water. In the cold wet season, when fevers were commonest, soups were therefore frequently stuffed with pepper and bitter leaf. As bitter leaf appears to have aided digestion, smoothed defecation problems and relieved stomach pains in humans, Etsako farmers reasoned that their animals would benefit in the same way. This probably accounts for their adaptation of the treatment to their goats and sheep.[36]

Recent researches on bitter leaf (*vernonia Amygialina*) show that it is rich in alkaloids, and this accounts for its bitter taste. It has some antibiotic activity, as well as some physiologically active nitrogenous compounds. As a vegetable, it is a source of vitamin A, which keeps the eyes and skin healthy;

vitamin B^1 or thiamine, which is important for the metabolism of carbohydrates; vitamin C or ascorbic acid, which is essential for general body resistance to diseases, the maintenance of teeth, and the formation of tissues; and vitamin K, which is necessary for blood clotting. One could therefore appreciate why bitter leaf proved to be such an effective remedy for ailments in both humans and animals in pre-colonial Etsako. The alkaloid content of bitter leaf neutralized stomach digestive acids, thus relieving stomach pains. Its antibiotic action operated against the bacteria that caused diarrhoea and other diseases. Its vitamin content provided a high level of physical well being and its active nitrogenous compounds aided the formation of essential amino acids needed for body building and repair.[37] Farmers treated skin diseases with oil because they had noticed that oil smoothed the skin and promoted the growth of hair.[38] This, as we saw above, could probably be explained by its high vitamin A content.

Finally, we have to recognize that this rudimentary veterinary medicine was effective for the pre-colonial period. As the people were peasant farmers, they did not need to produce large quantities of goods for the market. Rather, production was geared for subsistence, and for sale only to meet complementary needs.[39] The number of fowls and animals that survived was always sufficient for these needs. The people required, therefore, only this elementary form of veterinary medicine. But in spite of all their efforts, animal mortality in pre-colonial Etsako was high, especially in the wet season.[40]

Disposal of Animals

In pre-colonial Etasko chickens were regarded as a delicacy. This meant that fowls were not reared for frequent family consumption. This explains the local adage *"elamhi Okho Ikpelai lo gbe vbe egbe"* (Chicken nourishes the body for three years). From this, it could be inferred that chicken was not expected to be eaten often. The meat for frequent consumption was "bush" meat, in the form of rabbits, grass cutters, antelopes, deer and bush pig. These were easily available, either in the market or by hunting. The widespread availability of bush meat meant that not much importance was placed on the consumption of domestic animals.[41]

In spite of this, fowls and domestic animals were in high demand in the local society. They were disposed of frequently for numerous ritual sacrifices to ancestors and local divinities. Elders and men in authority in the various segments of society imposed fines of livestock on their erring subordinates.

Also in many Etsako communities, such as Avianwu, all male adults (i.e. those enrolled in age sets) and married women were obliged to offer a cock and a hen, respectively, to a common ancestor once a year. As society was exogamous, with residences dispersed all over the village, those who met at the shrine of an ancestor recognized one another as brothers and sisters. This meant that their children could not indulge in sexual activity or get married to one another. Sacrificing fowls to ancestors was thus a very important way to maintain the exogamous system of society. It prevented endogamy by helping relations recognize one another.

Cocks were kept in Etsako society because of their important chronological function. Their crowing was used to monitor the passage of time. For example, the first early morning crowing of cocks was at about 2.00 a.m. The second was at about 4.00 a.m., and the day break crowing was at about 6.00 a.m.

Fowls and domestic animals were also in demand so that they could be slaughtered at festivals, or to provide food while entertaining guests and visiting VIP's.[42] This was because hunting and the markets could not satisfy the meat requirements of festival periods, when an unusually large congregation of visitors occurred. Domestic animals, therefore, supplemented other sources of meat. The sudden appearance of an august visitor often led to livestock being killed, usually a goat or cock. This was because markets took place at four-day intervals. It was therefore difficult to rush to the market on non-market days to buy bush meat. Besides, the VIP ate "bush" meat frequently at home. It was therefore a sign of great honour for a domestic animal to be killed to entertain him. This virtually raised him to the status of an ancestor who was placated by the ritual sacrifices of domestic animals.

In addition to their use as ritual objects, livestock were also disposed of by sale. Hens, for example, were often sold if they were poor hatchers or brooders. Some hens either abandoned their eggs before they were hatched or broke some of them and sucked the yoke. Others hardly ever succeeded in bringing their chicks to maturity because of their carelessness or inability to anticipate and ward off danger. Except for a limited number, kept to monitor time in the household, to be slaughtered for the chance dignitary, or for ritual purposes, cocks were sold as soon as they began to crow. He-goats were sold as soon as they matured, but rams were kept for longer periods and sold to Muslims.

However, the commonest means of disposing of female domestic animals was by the contract of agistment or livestock tenancy.[43] Its popularity lay, as we have seen, in the fact that it was an investment that yielded good dividends for those who were partners in it.

Conclusion: Evolutionary Trends and Scientific Developments in 19th Century Etsako Animal Husbandry

Many works on pre-colonial African economic history are criticised for having a timeless dimension that creates the impression that events had no evolution.[44] But an evolutionary perspective is often difficult to conduct because many pre-colonial African societies were preliterate, making records of their economic experimentations and developments difficult to find. The writings of Muslim societies, literate in Arabic, are unhelpful since the Ulama and Malams, the early historians, concentrated much of their interests on necrology and an uncritical reverence for leaders, rulers and their kingdoms.[45] Thus, the records of African economic development were often culled from the unresearched tales of European travellers, missionaries and traders. This often gave the misleading impression that quantifiable and evolutionary economic history began with the European presence in Africa.[46]

But evolution can be detected in the seeming timelessness of pre-colonial economic events. For as K.M. Buchanan and J.C. Pugh have suggested, an economic practice in pre-colonial times was often the result of decades of trial and error. The practice that stabilized at an equilibrium was arrived at from earlier dynamic processes of trial and error, adjustments and modifications.[47]

Thus pre-colonial animal husbandry in Etsako, as presented above, could appear timeless. However, a careful reading shows evidence of evolution. For example, the domestication of the fowl obtained by the contract of agistment began with confinement. A newly acquired fowl always had to be confined to a farmer's compound for some days and fed regularly before it was released to free range. This regular feeding guaranteed its daily return to roost. Free range was therefore an evolution from restricted breeding. Also crossing hens, at their points of lay, with cocks in other farmers' compounds was a development of unmonitored free range breeding. It evolved, as noted above, from the need to produce fertilized eggs in times of cock scarcity.

The preparation of the laying and incubation place and the choice of the basket as a covering device also evolved from the open range breeding in

order to limit its brooding uncertainties. This implies a lot of experimentation to arrive at the best device for covering the fowl.

Finally, veterinary medicine in its prophylactic and therapeutic forms was obviously an evolution from an intolerable situation of uncontrollable livestock mortality. The discovery of medicinal treatments was obviously the result of experimentations, observation, and modifications over a period of time. Etsako veterinary medicine represented a surprising level of experimental science, not usually credited to pre-colonial African societies by Eurocentric historians. For example, in psychology, the science of the mind and behaviour,[48] the conditioned response theory was not developed in Europe until the 20th century. Yet 19th century Etsako farmers developed and used it as a homing device for their livestock. It evolved from the farmers' need in a free range breeding system to bring their livestock back home every day for monitoring. It developed through decades of experimentation, observation and modification. Taking the example of incubating and hatching eggs, the use of a thick layer of sand, fringed by a thick circle of dry grass as heat insulators, concentrated the body heat of the hen on the eggs and facilitated their hatching process. The method used to incubate and hatch chicks shows a rudimentary understanding of the zoological effect of heat on the maturation of the egg embryo, and the heat insulating capacity of dead organic fibres.[50]

The Etsako, therefore, exhibited a surprising knowledge of science in their livestock breeding techniques, and there is clear evidence of evolutionary trends in their developments. However the preliterate nature of her 19th century society made accessing records of these evolutionary trends difficult to come by, creating the false impression among Eurocentric historians of a static, pre-scientific society.

Notes

1. R.O. Ekundare, *An Economic History of Nigeria, 1860-1960* (London, Methuen, 1973) p. 173-4.
2. A.G. Hopkins, *An Economic History of West Africa* (London, Longmans, 1973) p. 42.

3. G.O. Ogunremi, "The Precolonial Economy and Transportation in Northern Nigeria" in I.A. Akinjogbin, and S.O. Osoba (eds) *Topics on Nigerian Economic and Social History* (Ile-Ife Nigeria, University of Ife Press, 1980) p 102-110.
4. *Ibid.*
5. B.J.E. Itsueli, "The Influence of Traditional Religion in Economic Activities in 19th Century Etsako" in J.O. Ubrurhe (ed) *African Beliefs and Philosophy* (Warri Nigeria, International Publishers, 1992) p. 100.
6. Hopkins, co. cit., p. 248.
7. C. Ifemesia, *Traditional Humane Living Among the Igbo* (Enugu, Fourth Dimension Publishers. N.D.C. 1980) p. 5-6.
8. Trevor Roper, misled by the need for written records in the reconstruction of the historic past, believed that pre-colonial Africa had no history because she was largely preliterate. He summarized pre-colonial African activities in a most unscholarly way, as "the gyrations of barbarous tribes." See H.R. Trevor Roper, "The Rise of Christian Europe", *The Listener*, Nov. 28, 1963. This article on the Etsako, among many others, is a nail in the coffin of Trevor Roper's unresearched conclusions on the African past.
9. B.J.E. Itsueli, "Aspects of the Economic History of Etsako 1800-1960", A Ph.D. Dissertation, Department of History, University of Nigeria, Nsukka, 1982, p. 128; Ogunremi, *op. cit.*, p. 106.
10. B.J.E. Itsueli, "Trade and Price Control in Etsako", *Humanitas*, Vol. 2, No. 2, (Dec. 1991) p. 25-26.
11. B.J.E. Itsueli, "Aspects ... p. 128.
12. Oral Interviews with Pa Niakwe, 105 years old, at Fugar and Pa Azegbeobo, 80 years old at Alegbete, on 15th and 16th January 1990.
13. J.C. Ijoma, "The History of the Igbo-Edo Borderland before 1897", A Ph.D. Dissertation, Centre for West African Studies, University of Birmingham, 1978, p. 162.
14. B.J.E. Itsueli, "Trade in 19th century Etsako" Seminar paper presented to the Department of History, University of Nigeria, Nsukka, March 19, 1981.
15. B.J.E. Itsueli, "Organisation of Labour for Agriculture in 19th century Etsako", *Abraka Journal of the Social Science* Vol. I, 1989, p. 34-47.
16. Oral interviews with chiefs A.O. Itsueli and M. Oveigene at their palaces at Ivhiarhua and Afasio respectively, and with Pa Aliakwe already cited above.
17. Oral interviews as at note 16 above.
18. Oral interviews with chief A.O. Itsueli, *et al*, already cited.