

626-0204

Entente

Livestock II

Report - CRED

(State)

FY 76

GHANA AS A MARKET FOR LIVESTOCK
FROM THE ENTENTE STATES

John Staatz
Research Associate

PRELIMINARY DRAFT
submitted per preliminary reporting agreement
Entente Livestock Project

February, 1976

Preface

This paper outlines material on Ghanaian livestock marketing and consumption which I have been able to assemble using secondary sources available at The University of Michigan and Michigan State University. It is a preliminary paper whose main aim is pointing out areas in which further research is needed. Some of this research probably could be carried out using secondary sources available at other institutions; when data is termed "unavailable" in this paper, it merely means that it is not available at The University of Michigan or Michigan State University, not that it necessarily hasn't been published.

All comments and constructive criticisms on this paper are welcome.

John Staatz

June 26, 1975

TAI

	<u>Page</u>
I. INTRODUCTION	1
II. DOMESTIC LIVESTOCK PRODUCTION AND MARKETING IN GHANA	1
Production	1
Livestock Marketing in Ghana	2
Performance of the Marketing System	6
III. CONSUMPTION OF LIVESTOCK PRODUCTS IN GHANA	7
Per Capita Consumption	7
Trends in the Consumption of Meat Products	8
IV. GHANA AS A CONSUMER OF SAHELIAN LIVESTOCK	9
The Data	9
Seasonality of Imports and Production	12
V. TRENDS IN GHANA'S IMPORTS OF ANIMAL PROTEIN	28
VI. THE OUTLOOK FOR THE FUTURE	41
Factors Influencing Future Demand	41
Population Growth and Urbanization	41
Changes in Per Capita Income	42
Factors Influencing Future Supply	43
Livestock Production	43
Demand for Livestock in Other Markets	45
VII. DIRECTIONS FOR FUTURE RESEARCH	46
Footnotes	49
References	51

I. INTRODUCTION

Ghana is a major market for livestock products produced in the Entente countries. In 1966, for example, nearly 35,000 head of cattle were imported into Ghana from Niger and Upper Volta, the two cattle-surplus countries of the Entente (6).¹ Ghana thus accounted for 14.4 percent of the total net exports of cattle from these countries; in addition, it also reportedly imported over 27,000 head of cattle from other countries, the bulk of them coming from Mali (6; 18, p. 26).

Since Ghana is a major market for livestock products from the Entente, any attempt to project future levels of demand for these products should include a careful examination of Ghanaian patterns of consumption and imports of animal products. Understanding the factors which historically have determined the level of Ghanaian livestock imports will allow us to establish a starting point from which future demand projections can be made. This paper attempts to provide such a starting point; using secondary data, it examines the historical pattern of imports of livestock products into Ghana, particularly the flows of Sahelian cattle, sheep, and goats into the country. The marketing system for livestock in Ghana is discussed briefly and both seasonal and longer-term trends in production and imports are examined. Explanations are offered for some of the observed fluctuations in imports, and based on this preliminary examination of the data, new directions for future research are suggested.

II. DOMESTIC LIVESTOCK PRODUCTION AND MARKETING IN GHANA

Production

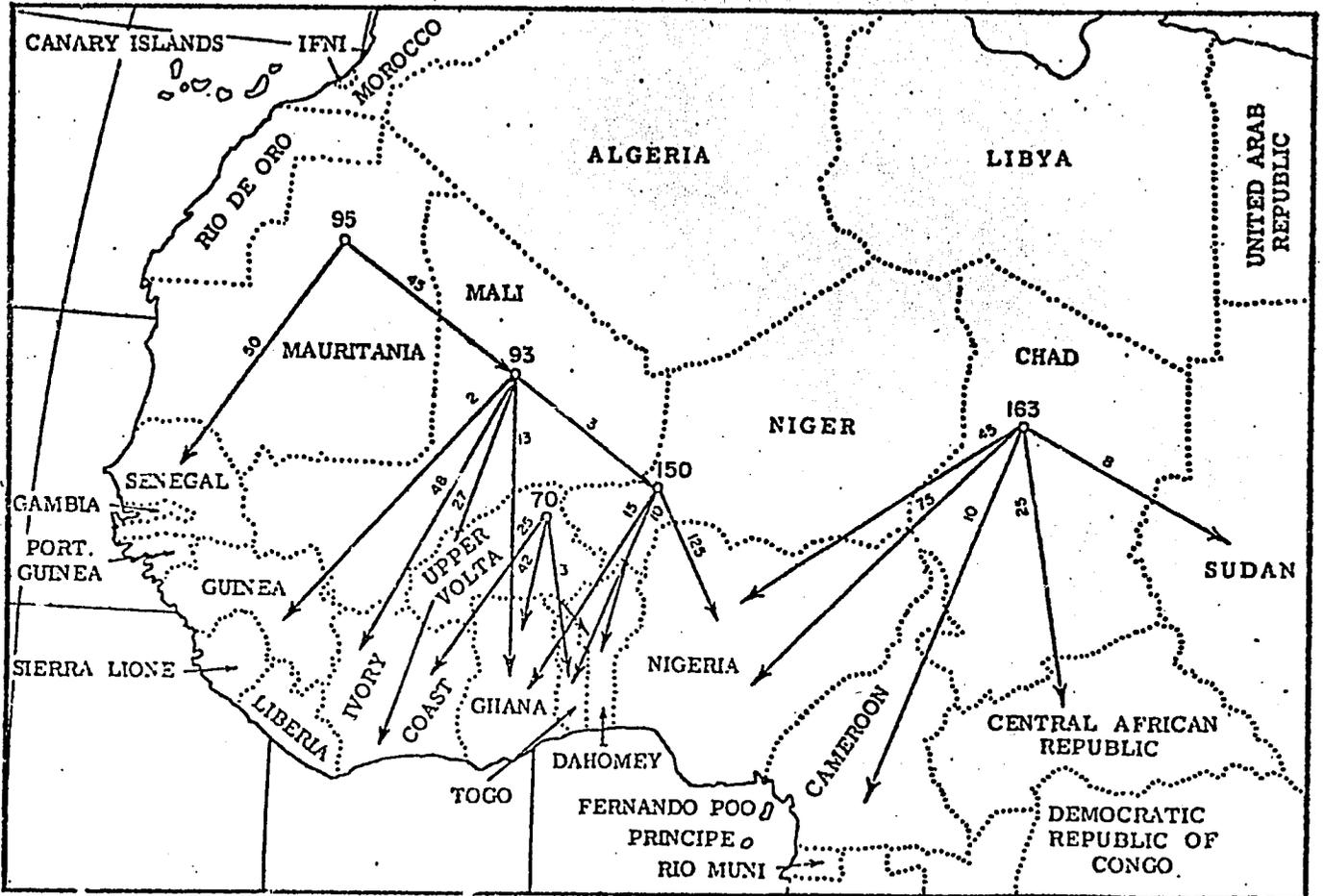
Since most of Ghana lies in the forest and tropical savanna zones, in which both trypanosomiasis and river blindness are present either

endemically or seasonally, livestock production, especially cattle raising, is restricted to the northernmost zones of the country.² Because livestock (and especially cattle) production is restricted to a small portion of the country (roughly the area north of Talamé), domestic production falls far short of domestic consumption. Indigenous production historically has supplied approximately 25 percent of the total livestock consumption of the country and a third of its beef consumption, although these proportions appear to have been increasing slowly in recent years (11, p. 425). To fill the shortfall in domestic production, Ghana relies heavily on imports of live animals and meat products from its neighbors (especially from Mali, Niger, and Upper Volta) as well as imports of canned and fresh meats from abroad (see figure 1). For example, during the period 1963-68, recorded imports of slaughter cattle averaged over 63,500 head per year, plus the equivalent of an additional 19,800 head of cattle in canned meat, compared to an estimated annual consumption of 36,900 head of domestically produced cattle (6, 8).³ In addition, significant amounts of fresh and dried meat were also imported during this period.⁴

Livestock Marketing in Ghana⁵

Livestock marketing in Ghana is similar to that in most West African countries. A large number of intermediaries are involved in the long-distance trade which ties the nomadic Fulani (or Peuls, as they are known in the Francophone countries) with the coastal consumers of meat. The following discussion is necessarily somewhat brief; for more detail, the reader is referred to Hill (9), Cohen (3), and Mittendorf and Wilson (15). While this discussion will concentrate on cattle marketing, sheep and goat marketing is similarly organized, although the distances travelled to market by these smaller animals often is longer, and they can tolerate being

FIGURE 1. - DIRECTION OF LIVE CATTLE EXPORTS FROM THE SAVANNA ZONE COUNTRIES OF WEST AFRICA



Source: L.P. 4

driven greater distances (9, p. 13).

The West African livestock marketing system arose entirely indigenously and continues to operate with little government participation. In the major exporting regions (for the Ghanaian market, this includes Mali, Niger, Upper Volta, and northern Ghana), itinerant livestock dealers, many of whom are farmers during much of the year, travel to local markets and individual compounds to buy slaughter animals. They assemble these animals into small herds which they then either ship or trek south. (With the continuing commercialization of these northern economies, the traders now are relying increasingly on local markets as the source of their animals rather than having to travel to individual compounds to buy livestock (11, pp. 431-2).) Sales to these traders are largely on a cash basis (11, p. 431).

Once a herd has been assembled, drovers usually are employed to take it at least part of the way to the southern markets. Animals which appear weak may be sold to local butchers along the way, and the entire herd may change hands at one of the major markets of the north (e.g., Talamé), being sold to another intermediary who handles larger volumes of cattle.⁶ Unlike Nigeria, where livestock are shipped both by rail and on hoof to the southern markets, in Ghana a large and increasing proportion of the livestock are transported to the major consuming centers by truck, after originally having been trekked in from the northern regions to Talamé, Prang, Kintampo, or Wenchi. Inadequate pasturelands in the forest zone and the presence of tsetse fly in many areas makes the shipment of cattle by hoof beyond these points difficult. Shipment by truck, while requiring a larger cash outlay than hoof transport, does reduce the amount of weight lost by the animals during transshipment. For example, cattle moved south by truck during the mid-sixties were said to have lost approxi-

mately two percent of their original weight in transshipment, compared to an estimated 15 percent weight loss for a similar movement on hoof (23, p. 51). Furthermore, shipment by truck allows younger animals to be sent to market, thus resulting in a herd composition with a lower proportion of unproductive animals (especially overage males), than is necessary when a herder relies entirely on shipment by hoof.⁷ This allows a higher "takeoff rate," which results in a reduced use of grazing land per unit of meat produced (23, pp. 56-60). Little work has been done, however, in evaluating what net savings, if any, are realized by truck transport of livestock.

Once the livestock reach one of the southern markets such as Kumasi, the trader (or "bringer" to use Polly Hill's term) contacts a "landlord" or broker, who assists him in selling his animals. These landlords, whom Hill describes as "settled strangers," are almost all originally from the north (many are from the countries from which Ghana imports livestock) and are predominately muslim. They are also often among the most wealthy and politically powerful residents of their cities. They provide lodging for the bringer, his assistants, and his animals, and act as his agent in arranging the sale of his animals to local dealers and butchers.⁸ These sales, all the details of which are negotiated by the landlord, are often on a credit basis, with the landlord guaranteeing the purchase price to the bringer. The landlord also often acts as a travel and trading agent for the bringer, helping him with the "ever deepening mysteries of exchange control, import licensing, and the like" (9, p. 8). In return for these services, the landlords receive a commission for each animal sold.⁹ After having sold his animals, the bringer and his assistants may spend several days in the market town (being fed and lodged at the landlord's expense) before heading north again. During this time, they usually buy goods which

they will resell upon their return home.

Once the livestock have been sold to a dealer, they are either immediately shipped to other markets further south or sold directly to butchers for slaughter. The entire sales transaction from bringer to butcher usually takes place within two or three days at the most, as bringers and dealers are under strong pressure to sell their animals. This results from the fact that there is little grazing space around the market (so that animals kept longer than a few days would lose considerable weight) and because many of the animals have contracted trypanosomiasis during their journey southward and would die anyway within a few days if they were not slaughtered.

All sales are conducted by private treaty, with a landlord arranging the terms. The animals are not weighed, but sold only on the basis of their appearance.¹⁰ Once a butcher obtains an animal, he has it killed by a maiam, or official slaughterer, who kills the animal in accordance with muslim law ^{(In 1960, 43% of the butchers in Ghana were Hausa (26, 41-2)).} (the vast majority of butchers in southern Ghana are Hausa). The meat is then cut up by the butcher and his assistants and sold in small chunks which are typically used in stews. Hides are often cut up, sold, and consumed in a similar manner. As in most of West Africa, the demand is greatest for cheap, tough meat which will retain its flavor after being boiled in a stew for several hours; the market for what a Westerner would call "choice cuts" is extremely limited (21, p. 71).

Performance of the Marketing System

Although insufficient information exists presently to conduct a rigorous analysis of the performance of the Ghanaian livestock marketing system, a few observations should be made at this point. First, although the bringers of livestock would appear to be in a very vulnerable position,

since they are under strong pressure to sell their animals quickly, Hill reports that there is considerable competition among both landlords and dealers for the animals which are offered for sale and that this competition offers the bringers at least some measure of protection from exploitation. Many landlords, in fact, send emissaries north to advertise their services among potential livestock bringers (9, p. 5). Although there is some degree of market concentration, with certain landlords and butchers sharing a much larger share of the trade than others, there are still enough participants in the major markets (e.g. there were over 40 landlords in the Kumasi market during the mid-sixties) to insure a fair amount of competition (9, pp. 21-22). While some collusion between landlord and dealer probably does occur occasionally, the code of etiquette of a landlord prohibits any actions which would in any way suggest such behavior; this probably somewhat reduces the amount of collusion that does occur. In addition, because of social and ethnic restrictions, no butchers have also become landlords, and this reduces the amount of direct vertical integration in which any one individual can engage. Nonetheless, there are obvious areas of concern regarding market imperfections. The chief butcher of a major market, for example, controls the entry of new butchers into the trade and allocates market stalls among sellers (9a, pp. 360-3); this obviously could profoundly affect market performance. Clearly, the whole area of market performance needs further investigation.

III. CONSUMPTION OF LIVESTOCK PRODUCTS IN GHANA

Per Capita Consumption

Per capita consumption of red meat is low in Ghana, even by West African standards. FAO estimated the average per capita red meat consumption in Ghana at 4.5 kg. per year during the period 1964-66; Sarniguet,

Tyc and du Charlat estimated at 4.2 kg. per year in 1966 (4, pp. 224-5; 18, p. 35).¹¹ Of this total, beef accounted for roughly 2.5 to 3.0 kg. per capita,¹² and mutton and goat meat between .7 and 1.0 kg. per capita. In addition, between .6 and 1.0 kg. of poultry per capita were reportedly consumed. Consumption of red meat in Ghana is concentrated primarily in urban areas; per capita meat consumption in urban areas in 1966 was estimated at 8.5 kg. per year, compared with a rural figure of 2.6 kg. per capita per year (18, p. 37). By far the most important source of animal protein in the diet, however, is fish. Estimates of Ghana's per capita fish consumption during the mid-sixties (on a fresh weight basis) ran from 13.9 kg. per year (4, pp. 220, 225) to 15.5 kg. per year (18, p. 35). The bulk of this fish is locally produced, although there is a significant trade in dried fish with countries to the north and west of Ghana and a sizable volume of imports of canned fish from abroad.

Trends in the Consumption of Meat Products

Although the data for earlier years is of questionable reliability, it is generally felt that per capita consumption of red meat in Ghana fell throughout the early and mid-sixties, after having steadily increased during the fifties. Per capita consumption is said to have risen from roughly 5.7 kg. per year in 1949-53, to about 6.8 kg. per year in the late fifties. It reached a peak of between 8.2 and 8.6 kg. per year in 1961, a year of very heavy imports (21, p. 70), and declined thereafter to about 4.5 kg. per year by the mid-sixties. This decline in per capita consumption is generally attributed to a fall in imports resulting from Ghana's foreign exchange difficulties during the mid-sixties and a decline in local cattle numbers which is said to have occurred during the early sixties. This decrease in local herd size was reportedly due to excessive take-off from the herds

during the late fifties and early sixties in response to very favorable producer prices (21, p. 70; 18, p. 25). This declining trend in per capita meat supplies appears to have continued at least through 1970, the last date for which official slaughter data are available. (See fig. 2.) Some of the factors which may influence future levels of consumption are discussed in a later section of this paper.

IV. GHANA AS A CONSUMER OF SAHELIAN LIVESTOCK

As mentioned earlier, Ghana compensates for the shortfall in its domestic livestock production largely through livestock imports from its Sahelian neighbors. Before examining the seasonal patterns and long-term trends of these imports and discussing some of the factors influencing them, a few words should be said about the data used in this analysis.

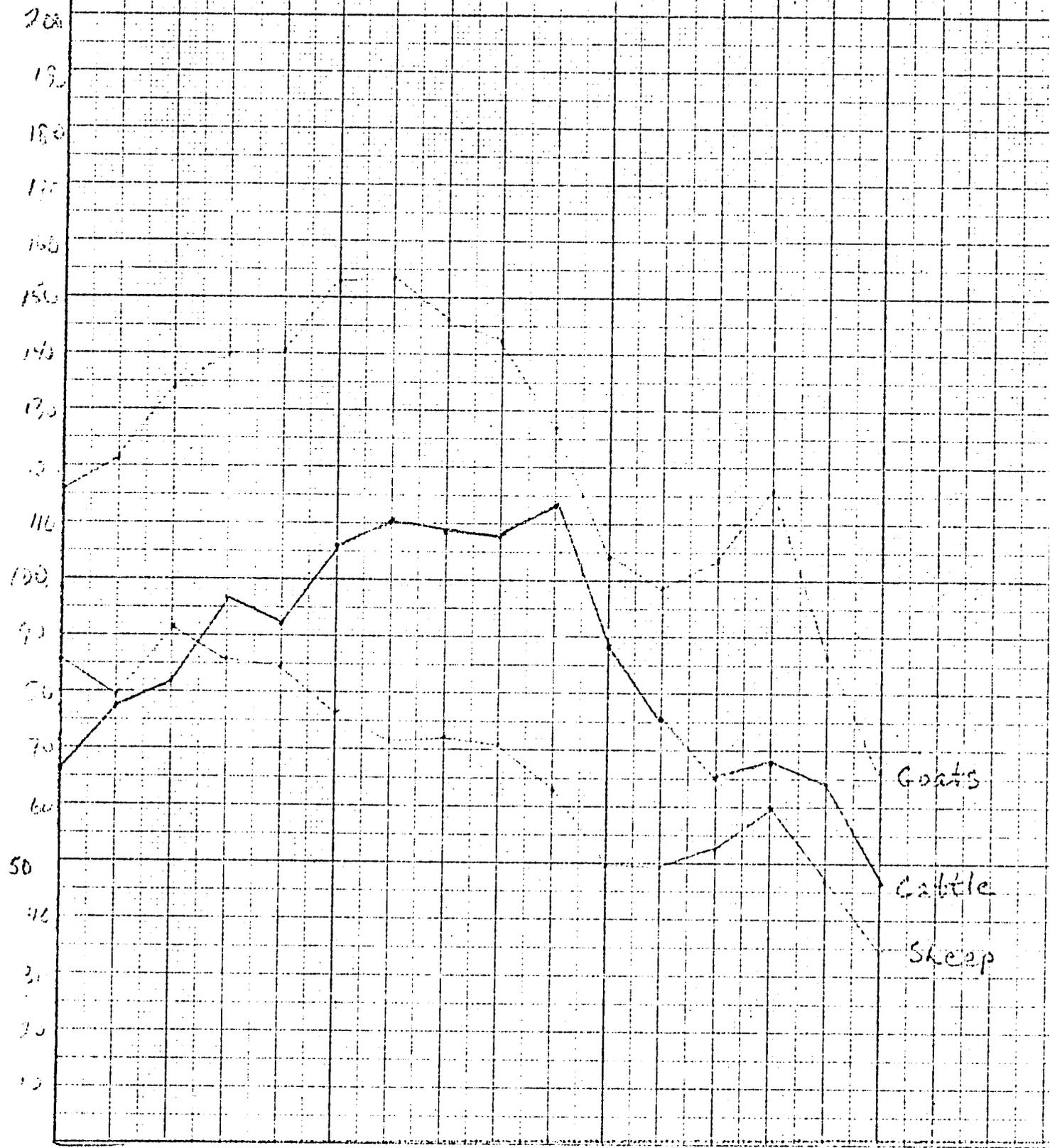
The Data

As is the case with statistics from most developing countries, one should take Ghanaian figures on livestock production and trade with several grains of salt. The bulk of the statistics cited in this section are official figures from the Central Bureau of Statistics, and reflect officially declared quantities and values of the commodities imported. Price data, where cited, were calculated by dividing the declared value of the imports by the quantity of the commodity imported. These figures thus were obtained indirectly and may not reflect actual "average" market prices prevailing in Ghanaian markets. For imports of animals, this method of determining the price was not satisfactory, as the declared value of the imported animals apparently was calculated by multiplying the number of animals imported by a nearly constant unit price. This resulted in a "price series" showing no variation over long periods of time. The price series which were calculated for most meat and fish imports do show con-

Figures. Recorded Livestock Slaughter 1957

Thousands
Head

NO. 3400 - M DIETZGEN GRAPH PAPER
MILLIMETER
EUGENE DIETZGEN CO.
PAID IN U.S.A.



1955 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

W. E.

siderable month-to-month variation, indicating that the declared values of the imports were not calculated on the basis of constant prices; the reliability of the resulting price series is still open to some question, however, as no information is given in the official trade statistics as to how the declared values of these imports were verified.

Since imports of livestock and livestock products into Ghana are subject to significant import tariffs, there is a strong incentive to smuggle these products across the border in order to evade the duties.¹³ Given Ghana's extensive frontiers and the small amount of manpower available to patrol the borders, some animals undoubtedly do enter the country illicitly. (It is less likely that fresh and canned meats, which come largely from overseas and which are imported through a few main seaports, enter the country illegally.) Most people familiar with Ghanaian statistics and the publications of the Central Bureau of Statistics feel that they are fairly reliable; nonetheless, it seems inevitable that the official statistics underestimate the true number of slaughter animals entering Ghana. Unfortunately, it has been impossible to estimate the degree of under-reporting, since by definition, the volume of unrecorded trade is unknown. One factor which probably tended to reduce the volume of illicit (as well as legal) trade somewhat during the last decade was the periodic inconvertibility of Ghanaian currency into other currencies, a situation which reportedly all but ended Ghana's trade with Niger in the mid-sixties (17). This may not have reduced trade as much as might be first expected, however, as throughout West Africa, livestock traders from the north typically use the money earned from selling ^{animals} cattle in the coastal countries to buy goods in the coastal and forest zones, which they resell once they return north (23, p. 50). Since in this sort of trade it is primarily goods and not money that enter and leave Ghana, problems of currency inconvertibility would not

be expected to affect this trade too greatly.

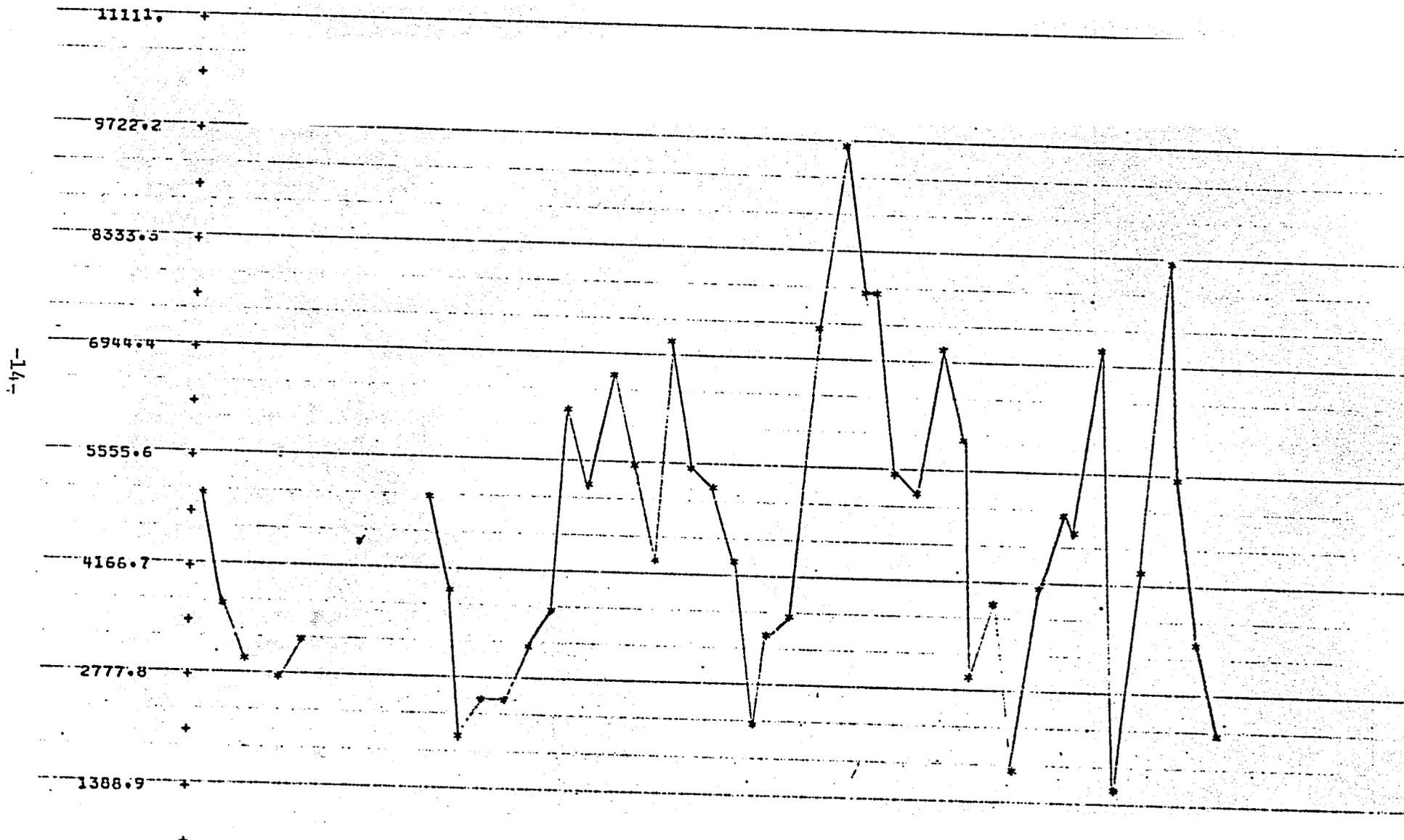
The basic assumption in this paper is that despite the fact that a significant number of livestock may have been imported into Ghana illicitly during the period under consideration (1963 to mid-1971), recorded imports reflect both the seasonal variations and temporal trends which occurred for total imports, both legal and illicit, during this period. Obviously, to feel entirely comfortable with this assumption, especially as it relates to the trend in imports over several years, one would like to have more information regarding changes in tariff rates and other factors which could influence the relative proportions of total imports which were brought into the country legally and illegally. Unfortunately, such information has been unavailable to this author.

Seasonality of Imports and Production

Imports of live animals into Ghana display distinctly seasonal patterns, with cattle, sheep, and goat imports each following a different pattern. Cattle imports, for example, reach a seasonal peak in December and January, fall steadily thereafter until the seasonal trough is reached in May; they rise slightly in June-July/August, fall once again in August/September, and then rise once again to the seasonal peak in December/January. (See fig. 3.) This same pattern obtains for cattle imports from all three countries which are major cattle suppliers to Ghana (Mali, Niger, and Upper Volta) and is tied to the pattern of rainfall both in Ghana and in the exporting countries. In contrast, sheep imports into Ghana have a seasonal peak around March, with a lesser peak in December/January. (See fig. 4.) The seasonal low point in sheep imports occurs in August. The seasonality in sheep imports may be due in part to seasonal variations in demand conditions as well as changes in supply conditions throughout the

GUAM (head)
1250

FIG. 3 (cont'd.)
Guam: Total Monthly Imports of Cattle



10317-10

JAN 1967 FEB 1967 MAR 1967 APR 1967 MAY 1967 JUN 1967 JUL 1967 AUG 1967 SEP 1967 OCT 1967 NOV 1967 DEC 1967 JAN 1968 FEB 1968 MAR 1968 APR 1968 MAY 1968 JUN 1968 JUL 1968 AUG 1968 SEP 1968 OCT 1968 NOV 1968 DEC 1968 JAN 1969 FEB 1969 MAR 1969 APR 1969 MAY 1969 JUN 1969 JUL 1969 AUG 1969 SEP 1969 OCT 1969 NOV 1969 DEC 1969 JAN 1970 FEB 1970 MAR 1970 APR 1970 MAY 1970 JUN 1970 JUL 1970 AUG 1970 SEP 1970 OCT 1970 NOV 1970 DEC 1970 JAN 1971 FEB 1971 MAR 1971 APR 1971 MAY 1971

year. These points are discussed in more detail below.

One of the major factors influencing the seasonal variation in imports of livestock products into Ghana is the rainfall pattern both in Ghana and in the countries which export large ^{numbers} amounts of livestock to Ghana. The season variation in rainfall patterns is outlined in Table 1.

Table 1
Seasonal Rainfall Patterns in West Africa

Country	Wet Season(s)	Dry Season(s)	
		Cool	Hot
Ghana (north)	April-Sept.	October-March	
Ghana (south)	April-July; Sept.-Nov.	Dec.-March; August	
Mali	June-Sept./Oct.	Oct./Nov.-Feb.	March-June
Niger	June-Oct.	October-June	
Upper Volta	June-Oct.	Nov.-Mid-Feb.	Mid-Feb.-May

Sources: 24, p. 247; 25.

The way in which the rainfall patterns influence imports is seen most clearly in the case of cattle imports. Supply conditions, particularly the condition of the northern grazing lands, are a prime determinant of the number of cattle sold by the Sahelian herders for slaughter. When the pastures of Mali, Niger, and Upper Volta are green, during and shortly after the rainy season, the herders graze their animals in the north, during which time the animals ^{gain} put-on considerable weight. When the dry season reduces the amount of grazing available in the north, the herds move south, and many animals are sold for slaughter, partly because there is not enough land free of tsetse fly infestation in the south to support the entire cattle population which has moved south. The pattern of cattle

imports into Ghana reflects this seasonal transhumance of the northern herds, as the nomadic cattle owners follow the shifting pastures which result from the seasonal rainfall pattern. As the rains begin to fall in Ghana in April, the herds start moving north and imports begin to fall. By late May, most of the herds have begun to move north, and imports have fallen to their seasonal low point. Why imports rise slightly in June-July/August is unclear, although this may reflect the sale of animals which are considered too weak to survive the entire trek north. The rains continue in the north through October, although the peak rains usually occur in August. Following the rains and the consequent revitalization of the northern pastures, imports into Ghana begin to rise slowly once again, as the cattle use up the available pasturage, and in so doing, gain considerable weight. By January (a month before the onset of the hot dry season in Mali and Upper Volta) the movement of cattle southward and the consequent sale of cattle for slaughter has reached its yearly peak, and sales remain heavy until the onset of the rains in April, when once again cattle begin to move north (23, pp. 49-50).

It is interesting to note that sales of domestic cattle by the predominantly non-pastoral northern Ghanaians shows a seasonal pattern exactly opposite that of imported cattle (10, pp. 72-80). (See fig. 5.) This suggests that Ghanaian cattle owners hold their stock off the market during certain times of the year, hoping for prices to rise when the volume imports falls to its seasonal low point. Unfortunately there are insufficient data on cattle prices in Ghana to test this hypothesis.

Sheep imports show even more highly seasonal variation than do cattle imports. The seasonal peak of sheep imports occurs around March and April is extremely marked (fig. 4), although there is a lesser peak in December and January, when cattle imports are also at their peak. The

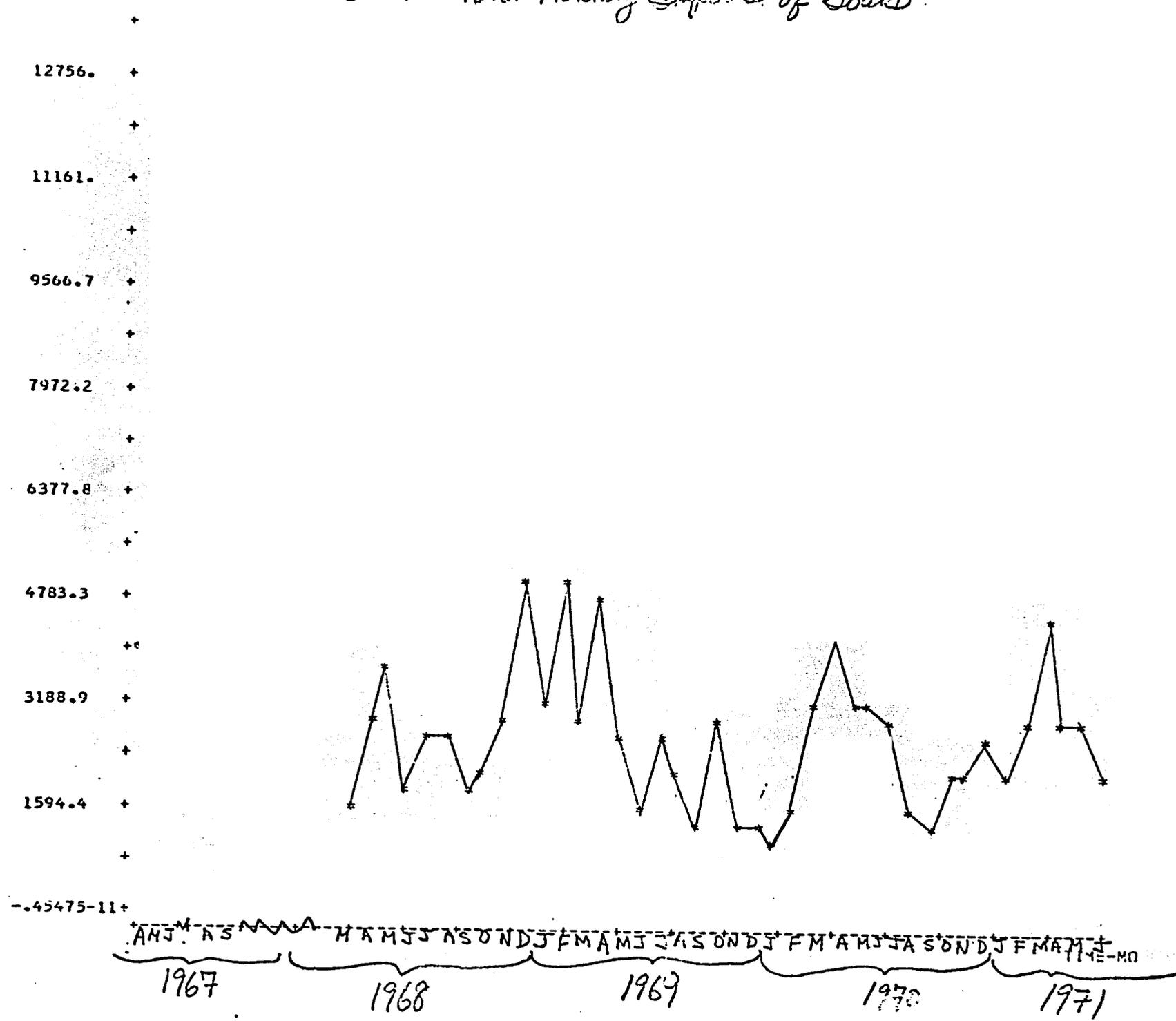
low point in imports is in late summer, usually August. Like cattle imports, the pattern of sheep imports seems to be strongly influenced by range conditions in the producing areas. The fact that the bulk of the sheep are marketed farther along into the dry season than are the cattle may reflect the fact that sheep are able to graze pastures more closely and forage better on marginal land than cattle. The extreme seasonality of sheep exports to Ghana might in part be explained by demand factors, especially in the north of Ghana, where muslims traditionally slaughter a sheep during the religious holiday celebrating Mohammad's birthday, which generally occurs in March or April. (Approximately 12 percent of Ghana's population is muslim, the majority of them living in the north (13, pp. 108-9).) As would be expected, imports are low throughout the summer and fall, when the rains are replenishing the pastures in the north. In contrast to cattle, sales of northern Ghanaian sheep and goats are not seasonal at all (10, p. 73). Hill attributes this to the lack of responsiveness on the part of local traders of small animals to economic opportunities and possibly to their lack of capital which bars them from buying ahead in anticipation of a seasonal price rise (10, p. 73); clearly this is an area that warrants further investigation.

In contrast to sheep imports, imports of goats, while definitely showing a seasonal pattern, are not concentrated predominantly in one or two months of the year. (See fig. 6.) Goat imports reach a yearly peak around December and a large volume of imports is maintained (albeit with some fluctuation) through at least March. Imports begin to fall off as the rains begin and the herds move north; they reach their low point during the height of the rainy season in August. As the rains subside in October, the volume of imports begins to pick up again, reaching a peak once more in December.

QUANT (Head)
14350

FIGURE 6 (cont'd.).
Ghana: Total Monthly Imports of Goats.

-22-



Imports of fresh beef were of rather minor importance during the period under examination, with the volume of imports never exceeding the equivalent of 680 head of cattle per month. While imports varied markedly from month to month, they did not appear to follow any seasonal pattern consistently, although in a few years they seemed to run contracyclical to cattle imports, with peak beef imports occurring in the late summer months. It should be noted that the market for imported fresh beef, especially for prime cuts, is extremely small, being restricted to the urban upper class elite.

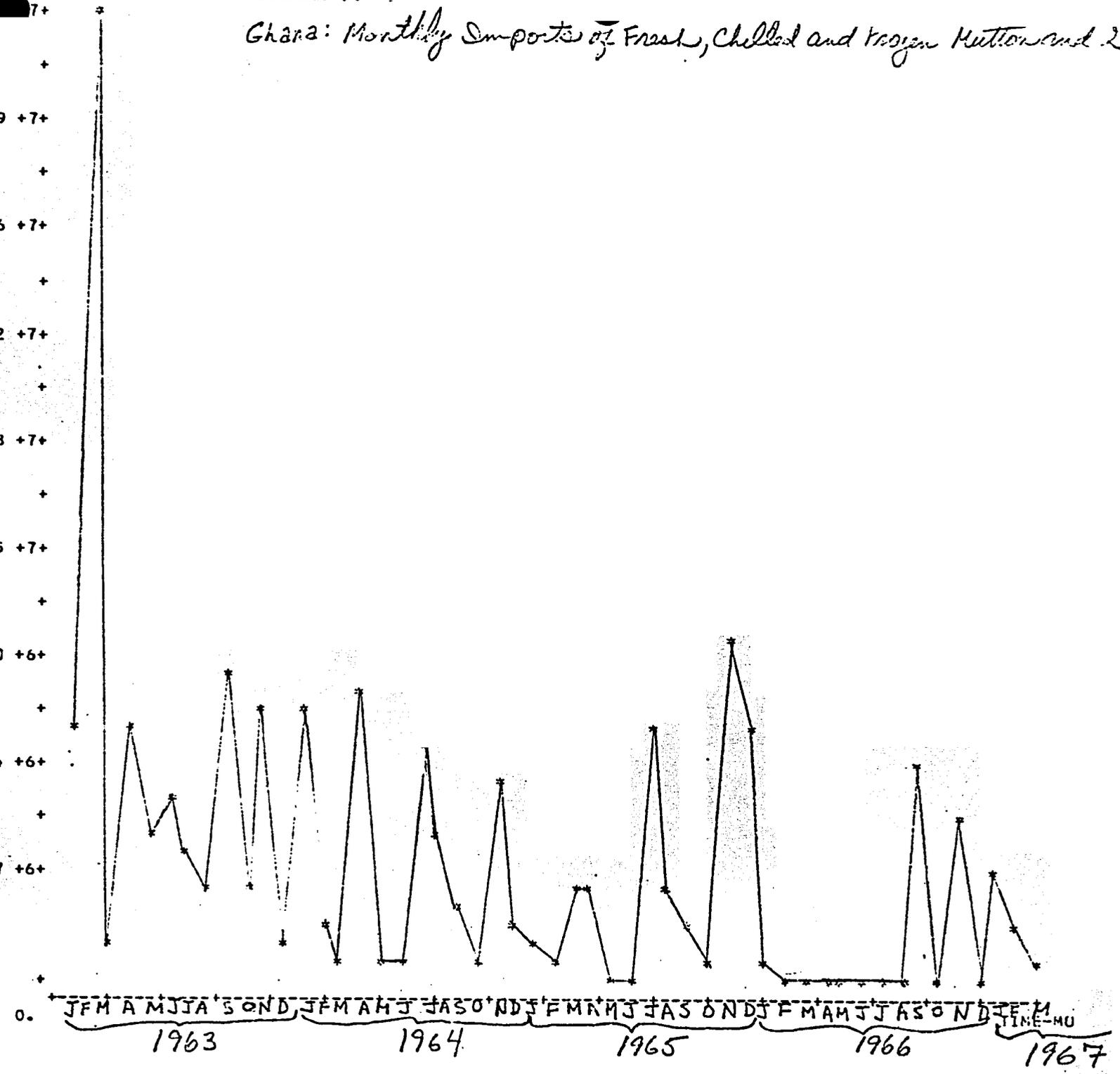
The average volume of fresh mutton and goat meat imports during the period 1963-71 was 319,060 lbs./month (compared with fresh beef imports of 31,425 lbs./month) or the equivalent of 13,682 head per month, more than twice the volume reportedly imported ^{via live animals,} ~~by hoof.~~ ¹⁴ This meat is ^{largely} imported from the United Kingdom, Australia and New Zealand; the volume of these imports varied from month to month, but no definite seasonal pattern was apparent. (See fig. 7.) Despite the relatively large volume of these imports, little research has been done as to the nature of this trade or its role in filling Ghana's demand for meat. The magnitude of this trade is dramatized by the fact that during 1963-71 it provided Ghana with an amount of meat equivalent to nearly 25 percent of the total recorded cattle imports into the country.

Similarly large amounts of both canned meats and smoked and dried meats were imported during 1963-71, primarily from Europe. (They averaged 399,016 lbs. and 317,390 lbs. per month, respectively.) The quantities imported, however (especially of smoked and dried meat) tended to fluctuate quite widely and showed no seasonal pattern. (See fig. 8.) Consumption and budget studies have shown canned meats to be a significant source of animal protein for low-income families (21, p. 71; 14, p. 211).

Imports of fish, the other main source of animal protein in the

QUANT (lbs)
 .2307 7+
 .20509 7+
 .17946 7+
 .15382 7+
 .12818 7+
 .10255 7+
 .76910 6+
 .51274 6+
 .25637 6+
 0.

FIGURE 7.
 Ghana: Monthly Imports of Fresh, Chilled and Frozen Mutton and Goat Meat



-24-

QUANT (0.01)
.2507 7+

FIGURE 7 (cont'd.).

Ghana: Monthly Imports of Fresh, Chilled, and Frozen Mutton and Goat Meat

.20509 +7+
.17946 +7+
.15382 +7+
.12813 +7+
.10255 +7+
.76910 +6+
.51274 +6+
.25637 +6+
0.

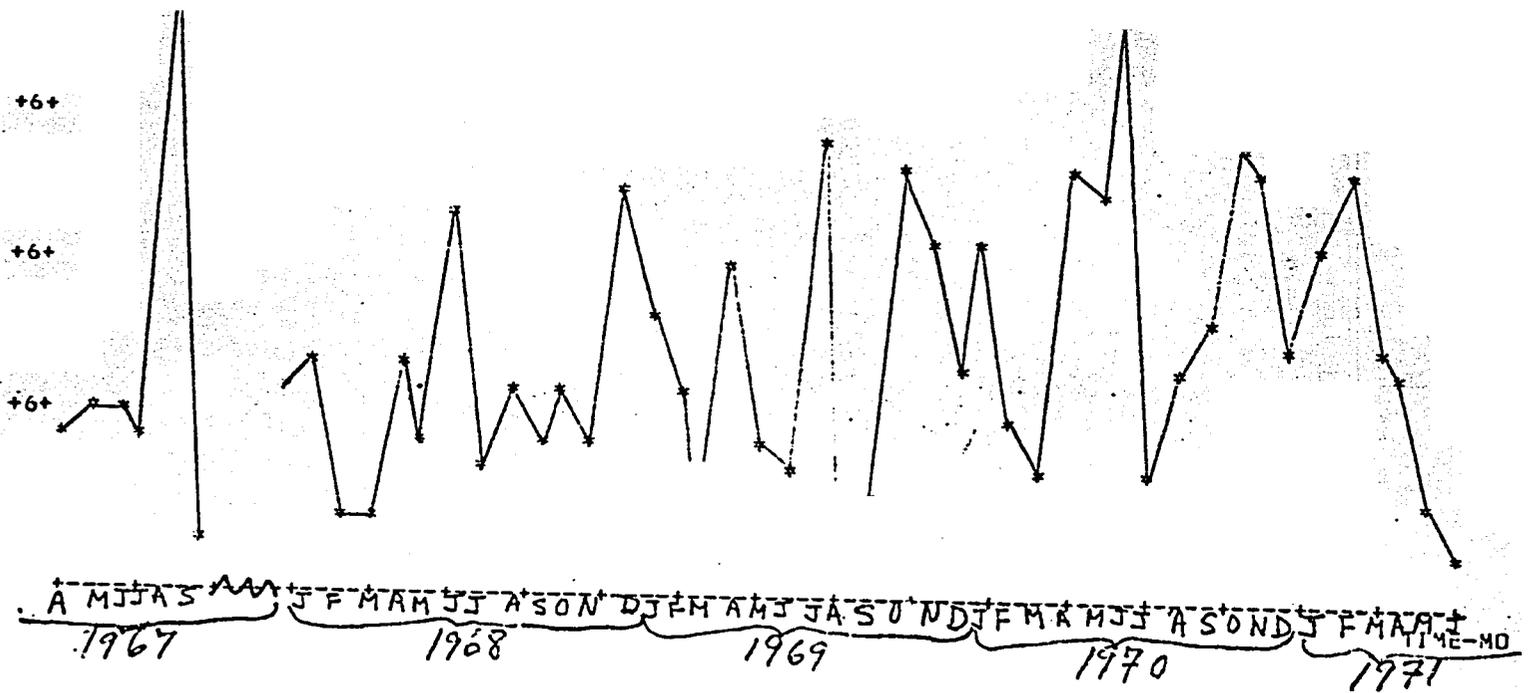
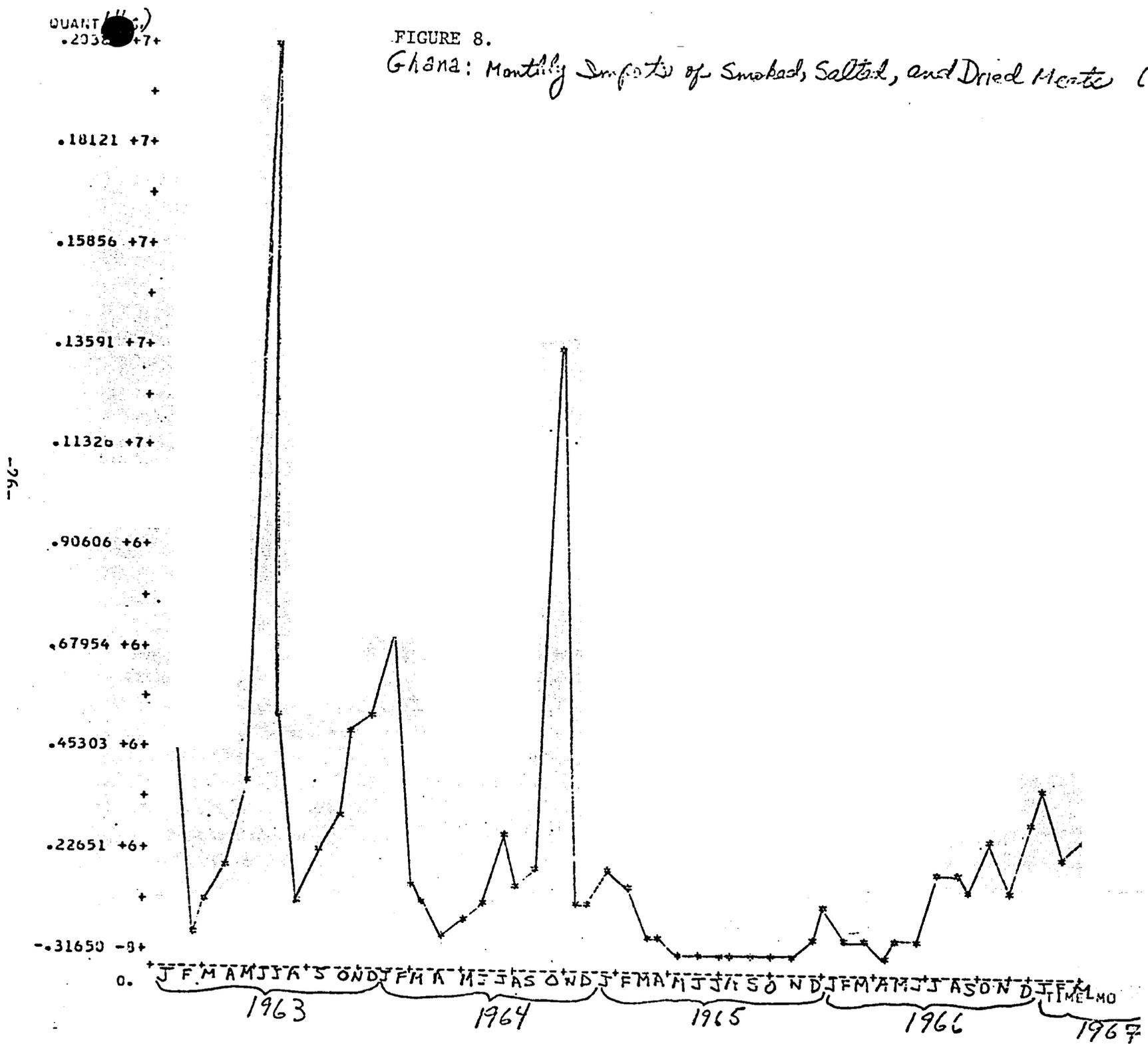


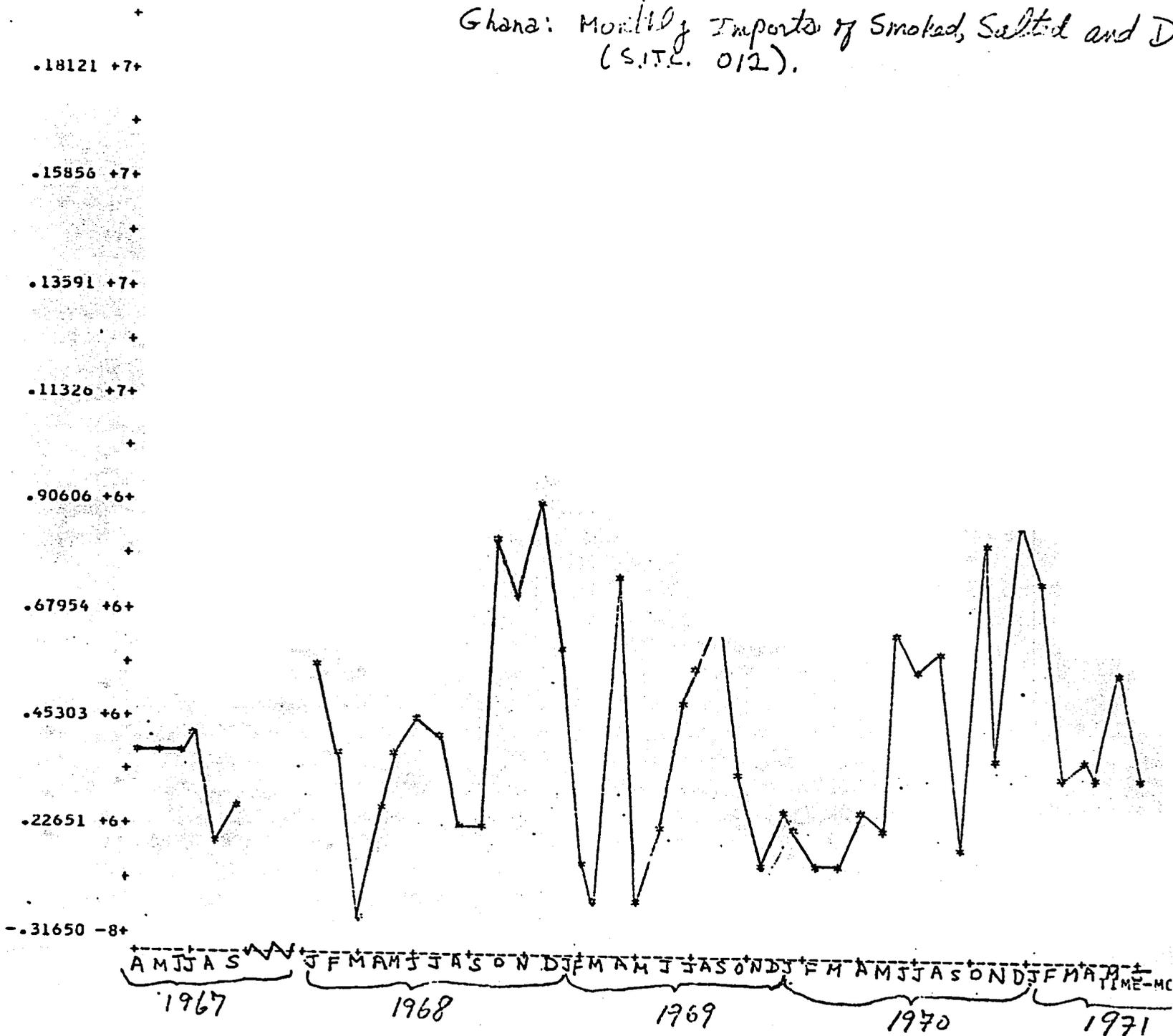
FIGURE 8.
 Ghana: Monthly Imports of Smoked, Salted, and Dried Meats (S.I.T.C. 012)



QUANT (lbs.)
.20736 +7+

FIGURE 8 (cont'd...)

Ghana: Monthly Imports of Smoked, Salted and Dried Meats
(S.I.T.C. 012).



diet, averaged 3,174,110 lbs. per month, broken down as follows: fresh, chilled and frozen, 1,004,200 lbs.; canned fish (gross weight), 1,942,600 lbs.; dried fish 245,310 lbs. These quantities tended to fluctuate quite widely, however, and also showed definite trends throughout the period. (Canned and fresh fish imports were increasing throughout most of the period and dried fish imports were falling. See Figs. 9-11.) In addition, a definite seasonal pattern was evident in the imports of both dried and canned fish. Dried fish showed a seasonal peak in imports in June and July, when cattle, goat and sheep imports were falling to their seasonal low points, and they tended to fall off in October and November, when animal imports were picking up. In contrast, canned fish imports (which were much larger than dried fish imports) reached seasonal peaks in the period October-January, and fell to seasonal lows in June, in this respect being similar to livestock imports. The seasonal pattern for canned fish imports is largely explained by the fact that roughly 75 percent of Ghana's domestic fish production is caught between June and September, and canned fish is imported to alleviate seafood shortages during the rest of the year (21, p. 71).¹⁵ Thus, local fish production and imports of dried fish from other West African countries run contracyclical to the seasonal pattern of livestock imports. Imports of fresh fish were of minimal volume until late 1966, when they began to increase markedly. They continued to fluctuate widely thereafter, exhibiting no particular seasonal pattern.

V. TRENDS IN GHANA'S IMPORTS OF ANIMAL PROTEIN

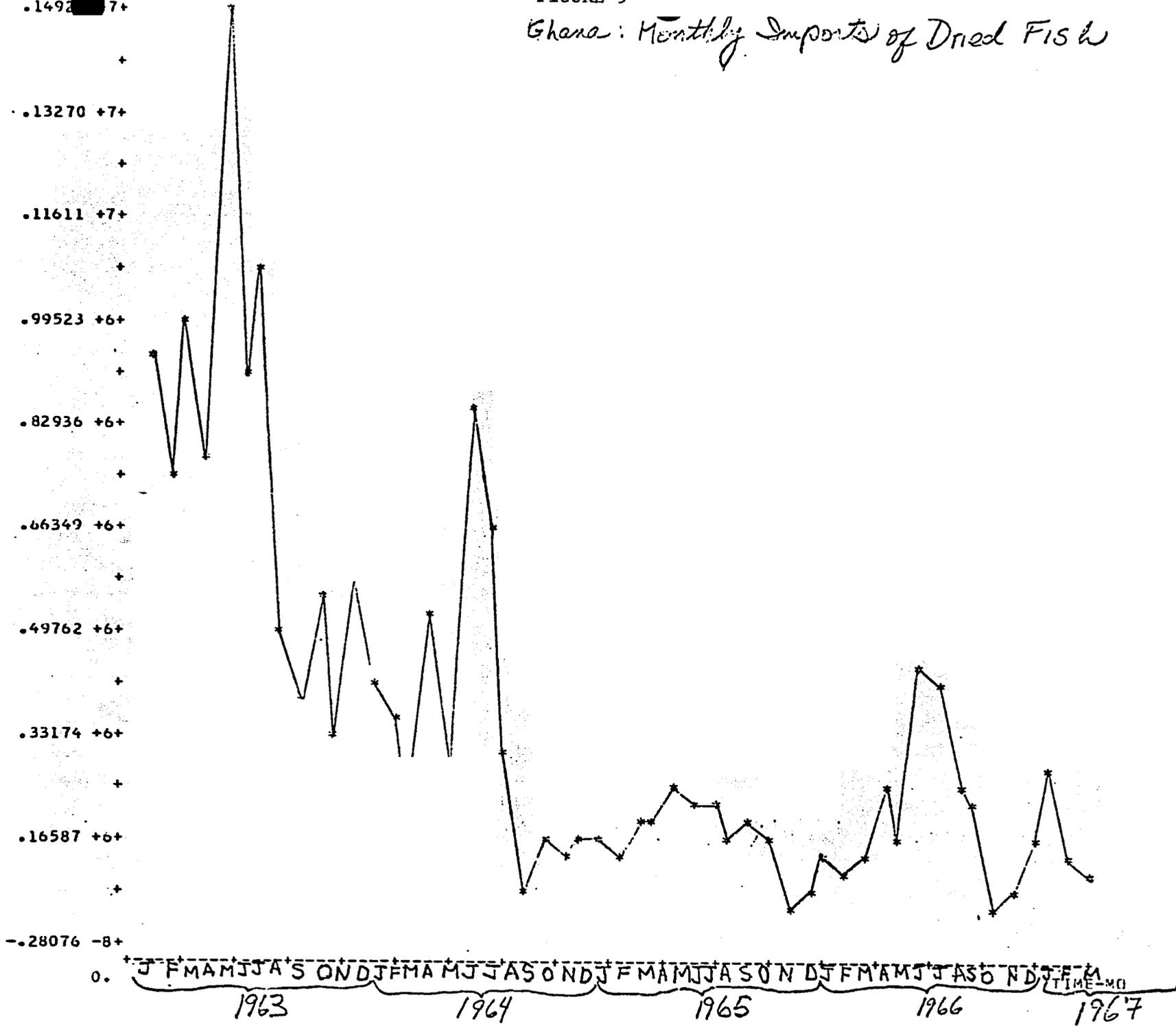
During the period for which monthly data are available (January, 1963 to June, 1971), imports of cattle, sheep, and goats into Ghana all showed definite downward trends.¹⁶ This downward trend was especially strong for imports of animals from Upper Volta, Ghana's main source of

QUANT (165.)
.1492 7+

FIGURE 9

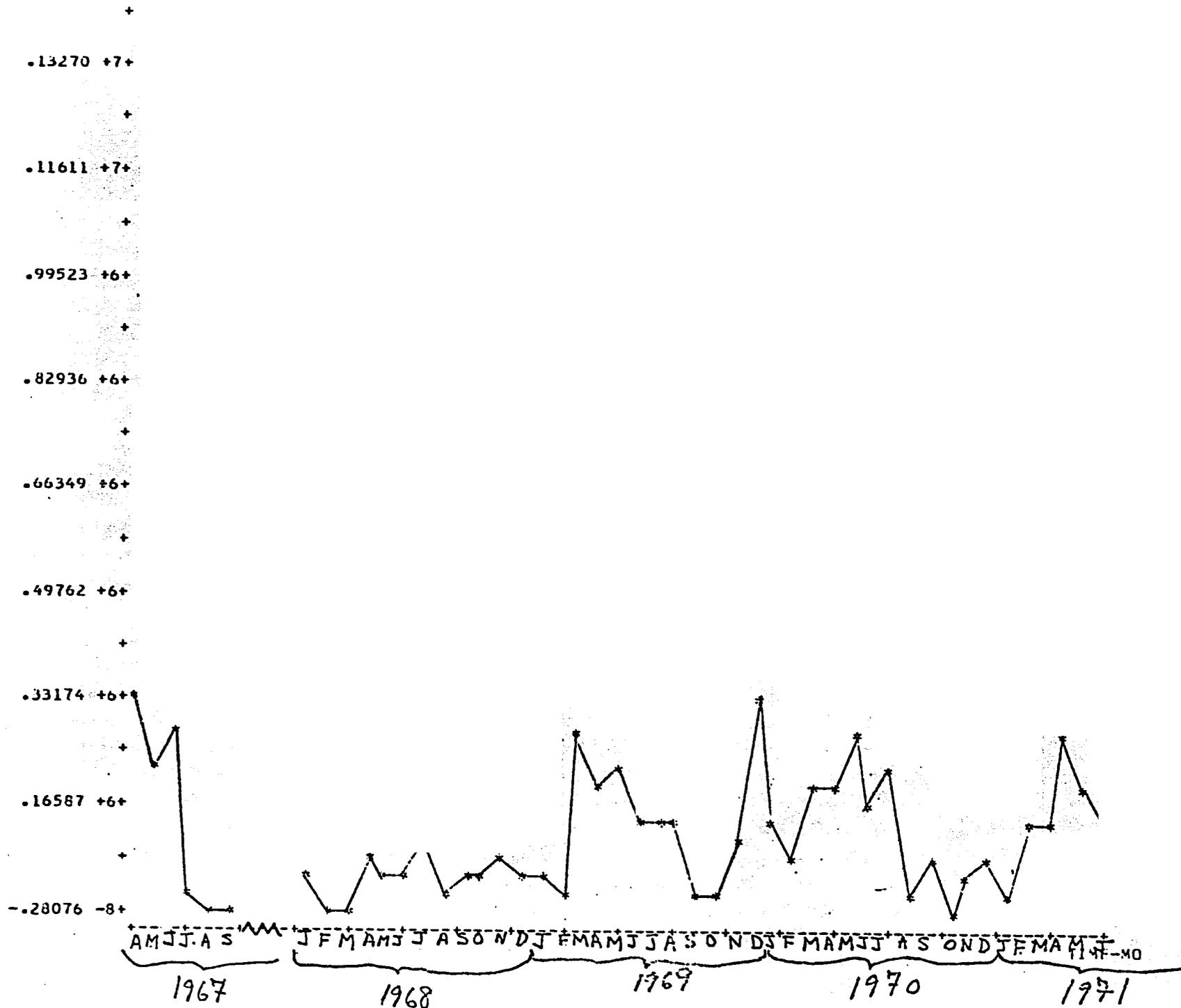
Ghana: Monthly Imports of Dried Fish

-29-



QUANT ()
.14928

FIGURE 9 (cont'd.)
Ghana, Monthly Imports of Dried Fish



QUANT (M)
.11489 +8+

FIGURE 10 (cont'd.).

Ghana: Monthly Imports of Canned Fish

.10213 +8+

.89359 +7+

.70594 +7+

.63828 +7+

.51063 +7+

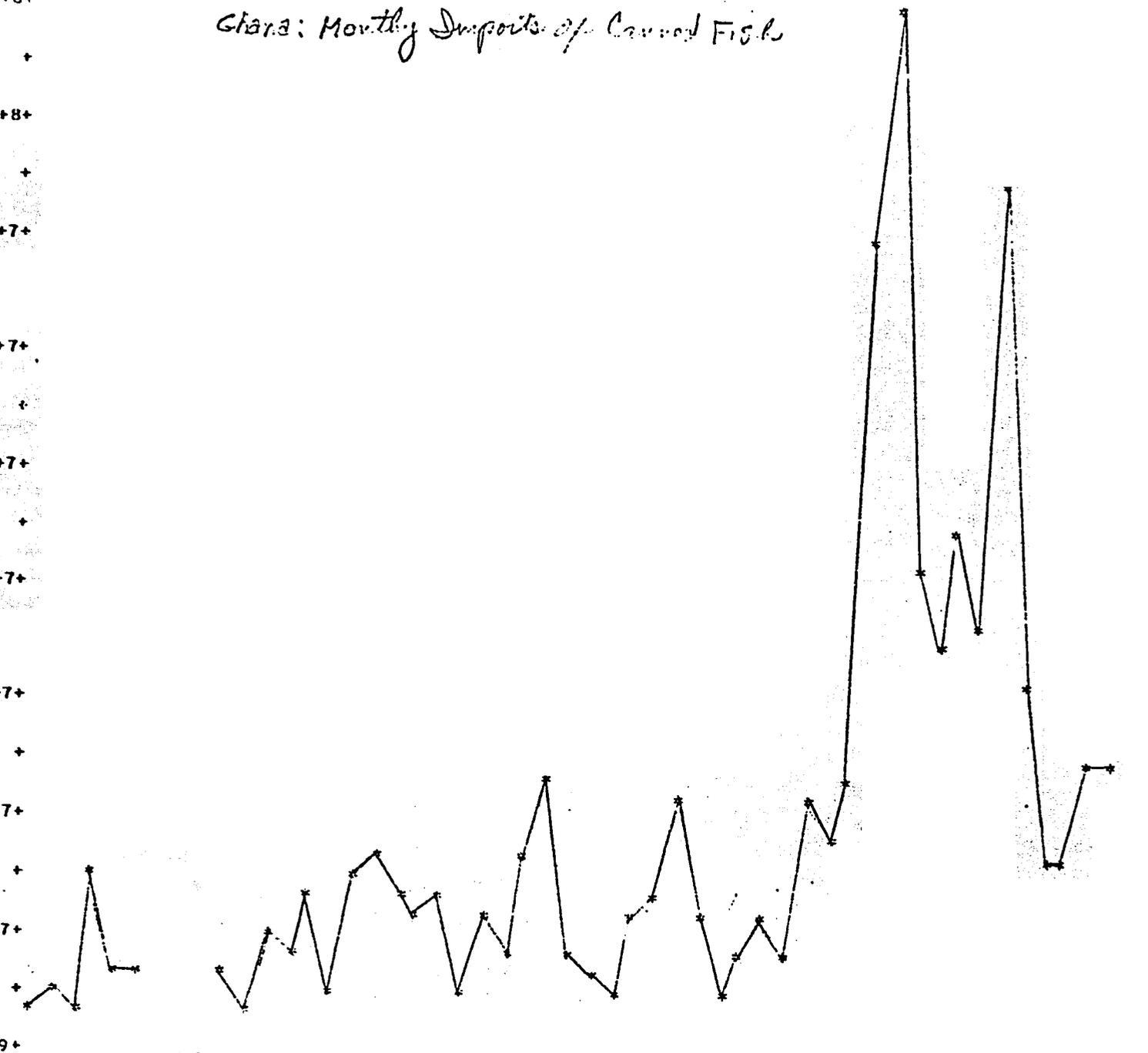
.38297 +7+

.25531 +7+

.12766 +7+

.46566 -9+

A M J J A S
1967
J F M A M J J A S O N D
1968
J F M A M J J A S O N D
1969
J F M A M J J A S O N D
1970
J F M A M J J A S O N D
1971
TIME-MO



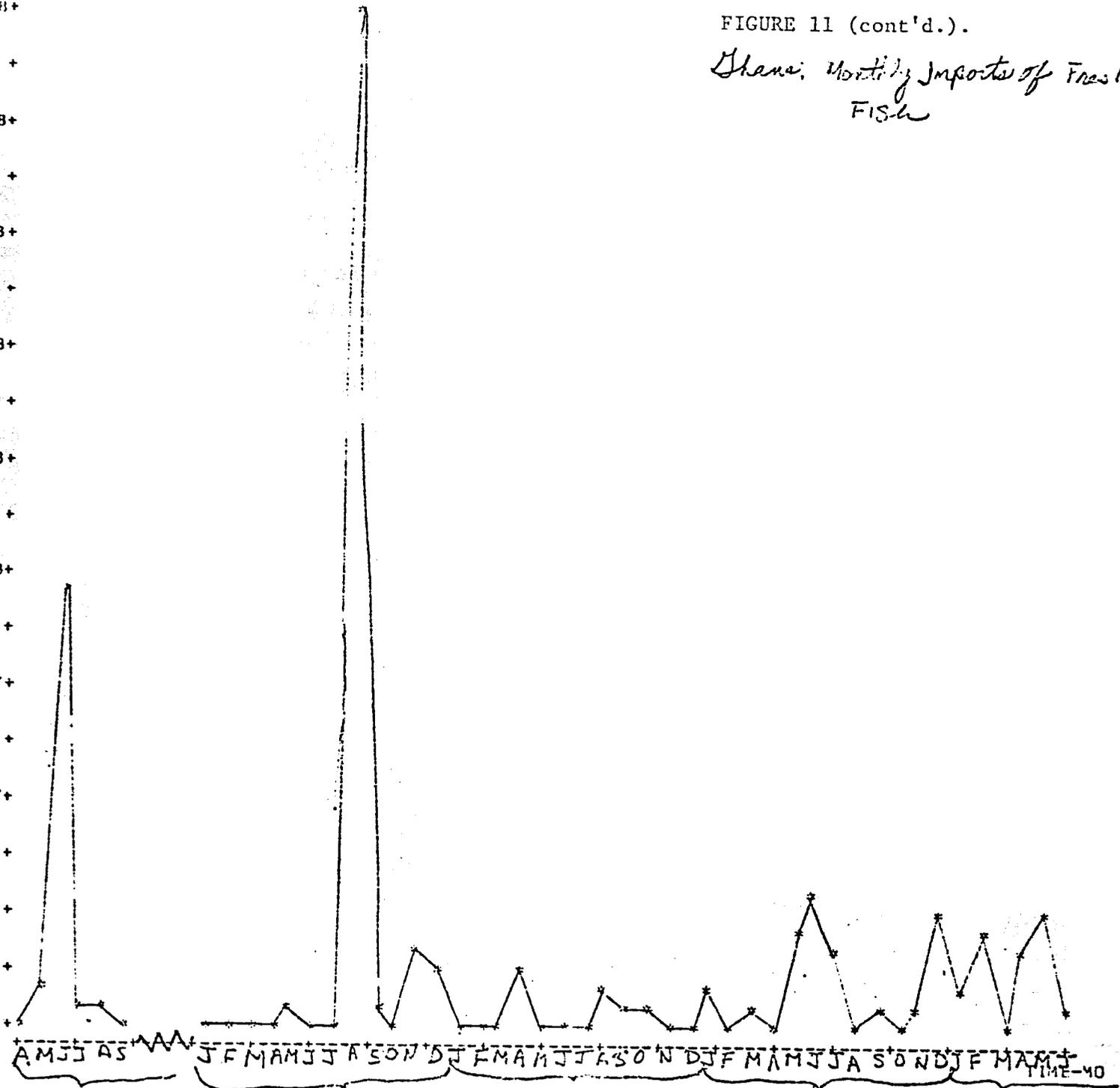
QUANT ()
.24551 +8+

+
.21823 +8+
+
.19095 +8+
+
.16367 +8+
+
.13639 +8+
+
.10911 +8+
+
.81835 +7+
+
.54557 +7+
+
.27278 +7+
+
-.18234 -7+

-34-

FIGURE 11 (cont'd.).

Ghana: Monthly Imports of Fresh, Chilled and Frozen Fish



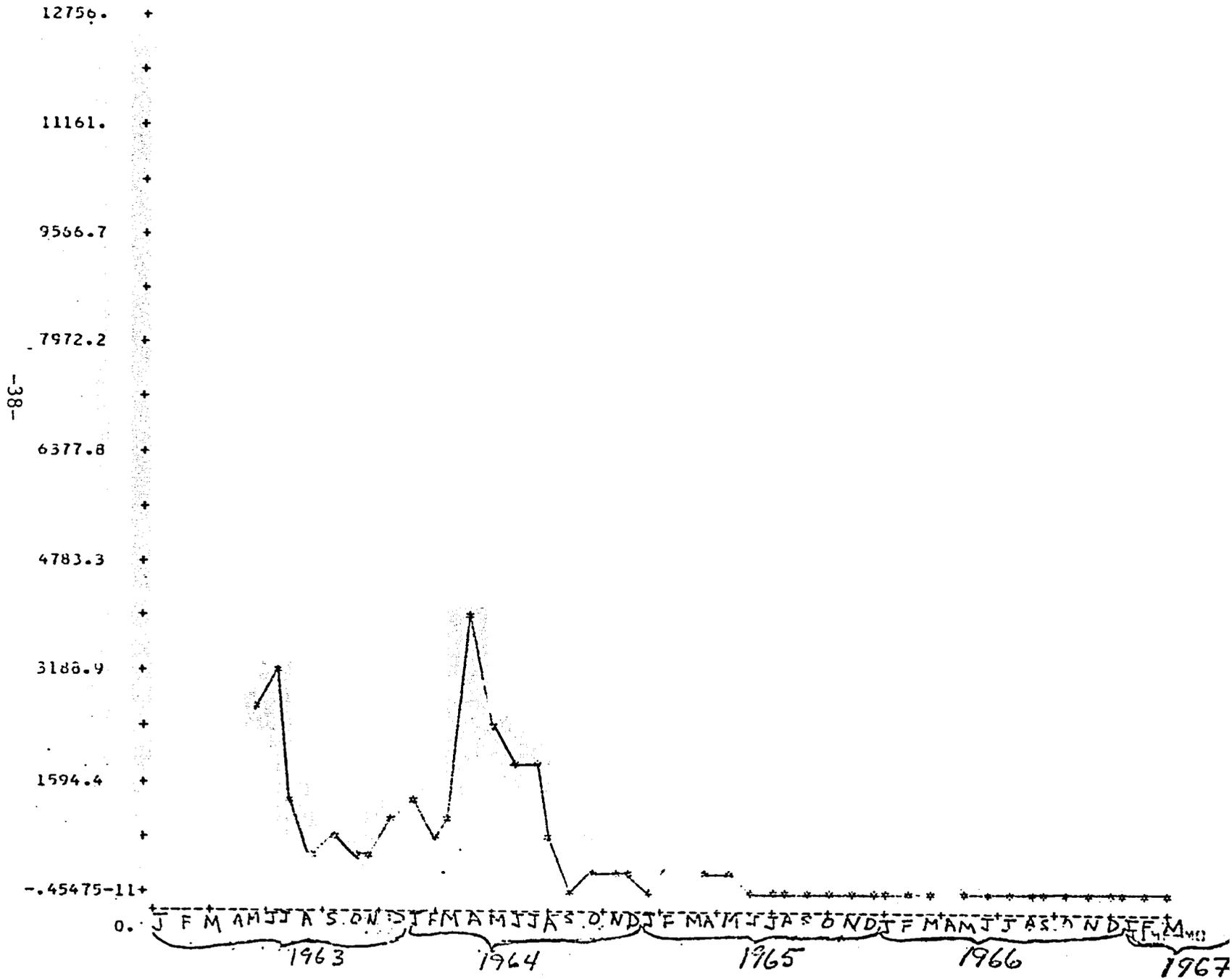
foreign livestock (fig. 12). In fact, it was the decline in imports from Upper Volta which alone accounted for the decline in both total sheep and cattle imports, as imports of these animals from both Mali and Niger showed no statistically significant trend during the period under examination. Goat imports from Mali, however, declined sharply during this period, becoming nearly insignificant by 1966 (fig. 13). The fall in livestock imports throughout this period is reflected in the declining figures for recorded slaughter of livestock in Ghana from 1963 to 1970 (fig. 2).

Of the imports of fresh, dried, and smoked meats, only fresh beef imports showed a definite trend throughout the period (at the .05 level of significance), declining slightly. It should be remembered, however, that the quantities of fresh beef imported into Ghana ^{were} ~~are~~ rather small. As mentioned earlier, imports of canned fish rose markedly throughout the period, while dried fish imports fell; imports of fresh fish showed a definite trend during the first half of the period (rising from practically nothing in 1961), but they tended to fluctuate quite erratically during the late sixties.

Several factors probably combined to account for the decline in imports throughout the period 1963-71. As mentioned earlier, part of the reason undoubtedly was related to Ghana's balance of payment problems which resulted in convertability problems for the Ghanaian currency. These balance of payment difficulties were in part due to the relatively low cocoa prices which prevailed during the mid and late sixties (table 2); in Ghana, when cocoa prices are low, the economy in general suffers and the prices paid for most foods fall (16, p. 123).¹⁷ This naturally tends to discourage imports. Closely related to this was the fall in real per capita incomes in Ghana throughout this period (table 2), a situation which was linked to both the low cocoa prices and political instability.

QUANT. (head)
14350.

FIGURE 13.
Ghana: Monthly Imports of Goats from Mali



As real incomes fell, so did the effective demand for meat. A second factor which kept imports below the level they otherwise would have reached was the growth in domestic livestock production (table 3). While the

Table 2
Cocoa Prices and Indices of Real Gross Domestic Product
Per Capita, Ghana, 1963-71

Year	Spot Price Cocoa, New York (cents per lb.)	Index of Real G.D.P. Per Capita (1963 = 100)
1948-62 aver.	33.8	n.a.
1963	25.4	100
1964	23.4	100
1965	17.2	98
1966	24.4	96
1967	29.0	95
1968	34.4	94
1969	45.7	94
1970	34.2	94
1971	26.8	n.a.

Sources: 20, p. 580; 12, p. 46.

Note: n.a. = not available

Table 3
Domestic Livestock Population, Ghana, 1964-68

	1964	1965	1966	1967	1968	Average Annual Rate of Increase
Cattle	504,556	511,242	527,596	551,943	580,283	3%
Sheep	332,774	354,677	486,292	509,384	645,529	15%
Goats	319,117	380,477	411,998	549,785	569,507	12%

Source: 5, p. 71.

increases in the animal population, especially of cattle, were not dramatic, they did serve to meet part of Ghana's demand for livestock products. A third factor undoubtedly at work in reducing the level of imports was the increasing domestic demand for livestock products in the exporting

countries. Urbanization (urban populations were growing at roughly 5 percent per annum in these countries) and increasing incomes were resulting in a larger proportion of local livestock production being consumed domestically in these countries. A fourth factor which affected the import pattern beginning in 1968 was the drought which affected the exporting countries. This may have reduced exports to Ghana in two ways. First, as herd sizes were reduced by the drought, livestock owners may have been reluctant to sell additional animals for slaughter for fear of further depleting their herds. Second, many of the animals which normally would have been sent to the coastal markets may have been so weakened by the drought that they were unfit to make the journey and therefore were slaughtered locally. The degree to which these two factors were compensated for by the movement of entire herds southward to avoid the drought is not clear.

VI. THE OUTLOOK FOR THE FUTURE

While this paper will not attempt to project the future levels of Ghanaian imports of livestock and livestock products from the Entente countries, it will discuss briefly some of the factors that will determine what those levels of imports will be. Among these factors are the rate of population growth and urbanization, the growth in per capita income, the rate of increase in livestock production both within Ghana and in the exporting countries, and changes in the demand for Sahelian livestock in other markets (both in coastal states other than Ghana and within the exporting countries themselves).

Factors Influencing Future Demand

Population Growth and Urbanization

The 1971 census indicated that Ghana's population has been growing at the rate of approximately 2.5 percent per annum in recent years. While

data on the rate of urbanization is less reliable, urban growth is estimated at roughly 5 percent per year (19, p. 101; 18, p. 60). If this rate of growth of the cities continues through 1980, the urban population of Ghana will have increased 62 percent in the decade 1970-80, and urban dwellers, who already comprised 29 percent of the Ghanaian population in 1971, will make up nearly 37 percent of the population by 1980. As mentioned earlier, consumption of red meat is primarily an urban phenomenon, and this increasing urbanization will probably tend to boost the demand for livestock products in Ghana. Even if urbanization were to slow down, the general rate of population growth would be expected to result in an increase in the demand for livestock products, other things ^{remaining} ~~being~~ equal.

Changes in Per Capita Income

Other things seldom do remain equal, however. One of the major factors influencing the demand for meat in Ghana is per capita income, and changes in the per capita income undoubtedly will influence the future volume of livestock imports from the Entente. The U.S.D.A. estimated the Ghanaian income elasticity of demand for all imported livestock and meat at approximately 0.8 in 1961 (21, p. 109); this indicates that while the demand for imported livestock is inelastic, it is not highly so, and imports would be expected to be fairly responsive to changes in real per capita income. Per capita income in Ghana is closely tied to the price of cocoa, the main export crop (16, p. 123). Throughout most of the period 1963-71, cocoa prices were below their historical levels, and per capita income declined during this period (table 2). While it is dangerous to project per capita income or to assume that Ghanaian income levels are entirely tied to the price of cocoa (although they are strongly influenced by it), it nonetheless should be noted that beginning in 1972, cocoa prices

began to rise sharply, reaching record levels in excess of \$1.00 per pound in 1974. Prices have fallen considerably during the last year, however, with the New York spot price at this writing being 62¢ per pound (22, p. 22). The outlook (as reflected in ^{the price of} *futures contracts*) is for a continued decline in the next year to roughly 40¢ to 45¢ per pound. Thus, while 1974 was a very successful year for Ghanaian foreign exchange earnings and income, the short-term outlook is for a more modest situation, with prices somewhat above the levels of the late sixties. It must be remembered, however, that these are undeflated prices, and given the rapid worldwide inflation that has been occurring since 1973, Ghana's real earnings in the next few years may not be markedly above those of the late sixties. This points to at most a modest income-induced increase in the Ghanaian demand for livestock products in the coming years.

Factors Influencing Future Supply

Whether the increased demand for livestock products in Ghana which probably will result from continued population growth, urbanization, and changes in per capita income will be met without marked price increases for these products depend on several factors. We will discuss two of these factors: 1) the rate of growth of livestock production in both Ghana and the exporting countries; and 2) changes in the demand for Sahelian livestock in markets other than Ghana.

Livestock Production

The increase in domestic livestock production, especially of cattle, was rather modest during most of the 1960s, as outlined in table 3. Unfortunately, data are not available on what changes occurred in herd sizes ^{after} ~~since~~ 1968 or whether the take-off rates changed during this period. One would expect, however, that the growth rate declined in

recent years because of the drought which affected northern Ghana beginning in 1968. (This may have been partially offset, however, by cattle moving south from Upper Volta to avoid the worse drought conditions there.) Thus, an annual rate of growth of less than 3 percent in domestic cattle numbers probably obtained in Ghana during the last few years. If recorded slaughter data is any indication, total cattle numbers may have even declined during this period (fig. 2). Given a rate of human population growth of 2.5 percent per year, an annual rate of urbanization of roughly 5 percent and modest increases in Ghana's foreign exchange earnings, it would appear that the demand for beef probably has been increasing at a faster rate than domestic production in recent years. Because of the reduced rate of growth (or possibly even the reduction) in cattle numbers as a result of the drought, this situation is likely to continue at least for the next few years, although it may be partially compensated for by increased production of small animals and a lack of growth in real income brought about by decreasing cocoa prices and continued inflation.¹⁸

Production of livestock in the major exporting countries (Upper Volta, Mali and Niger) has been adversely affected by the drought in the Sahel, as indicated in table 4. Upper Volta, the major exporter to Ghana, was affected least of ^{the} ~~all~~ ^{the three,} yet at an estimated rate of increase in cattle population in "normal years" of roughly 2.4 percent, it will be several years before cattle herds in the exporting countries will be replenished to their pre-drought levels (2, p. 21; 18, p. 53). Data comparable to those in table 4 are not available for the recent trends in goat and sheep population, but is likely that the losses sustained were somewhat less than for cattle, given these animals better ability to forage in marginal areas.

Table 54
Size of Sahelian Cattle Populations 1966-73
(thousands of head)

	1966	1967	1968	1969	1970	1971	1972	1973	1973/72 % "loss"
Upper Volta	-	2400	2400	2500	2700	2500	2600	2200	15
Niger	4000	4100	4200	4000	4000	4100	4200	2700	36
Mali	-	4800	4800	4900	5000	5300	5000	3300	34

Source: 2, p. 21

Demand for Livestock in Other Markets

The demand for Sahelian livestock in markets which directly compete with Ghana for the available exports has been growing in recent years. Rapid rates of population growth and urbanization have combined with substantial increases in income in some of the coastal states (e.g. Nigeria and the Ivory Coast) to markedly increase the demand for meat. Whether Ghana can continue to attract sufficient meat supplies in the face of this competition is at least open to question. Meanwhile, the demand for meat in the producing countries themselves has been increasing in recent years, largely due to the same factors of population growth, urbanization, and increases in per capita income. The growth of demand in these ^{latter} countries can be expected to slow down, at least for the next few years, however, as their economies have been severely affected by both the drought and inflation. While real g.d.p. per capita rose at an annual rate of 1.6 percent in Mali and 1.0 percent in Upper Volta during the period 1970-72, it fell at a rate of 1.8 percent per annum in Niger; it is reasonable to assume that the real per capita g.d.p. declined in all ^{of} these countries during 1973, a year of severe drought and rapid inflation. This economic slow-down probably will result in a smaller proportion of the livestock pro-

duced in these countries going to domestic consumption in the next few years than otherwise would be the case; the issue is far from clear-cut, however, as several other drought-induced factors (such as the settlement of many of the nomads in the cities after their herds were lost) may affect future trade patterns.

In summary, the outlook for the next few years is for Ghanaian demand for meat, particularly for beef, to outrun the supply available from both domestic production and imports. For the Sahelian countries, this means that Ghana probably will be a seller's market in the near future, and prices for their livestock most likely will be higher than they have been in the past. The degree to which the exporting countries will be able to take advantage of these favorable prices may be somewhat limited, however, by the reduced volume available for export. For Ghana, the demand-supply situation in the next few years probably will mean that increasing reliance will have to be placed on imports of fresh and canned meat from overseas and on the increased production and/or importation of other forms of animal protein (e.g., poultry and fish) in order to make up for the shortfall in domestic red meat production. In any case, some increases in meat prices are likely to occur in the next few years.

VII. DIRECTIONS FOR FUTURE RESEARCH

As mentioned at the offset, this paper is a preliminary effort to outline the material currently available at the University of Michigan and Michigan State University on livestock production, imports, and marketing in Ghana. It suggests several directions for future research; some of this research undoubtedly could be done using more recent secondary sources. Other parts of it probably would require field research to collect the necessary data.

The first and most obvious extension of the current research would be to gather more recent data on the monthly imports of animals and livestock products into Ghana. Extension of the monthly import data through 1974 would be very useful in assessing the effects of the drought and record high cocoa prices on the pattern and volume of Ghanaian livestock imports. A second area of inquiry which probably could be carried out using secondary sources is a detailed examination of the Ghanaian tariff structure for livestock imports, how it has changed over the years, and how it has affected the pattern of livestock trade between Ghana and its neighbors.

There are many areas of inquiry related to Ghana's role as a consumer of Sahelian livestock which probably would require field research in order to collect the necessary data. Among these would be more detailed studies of the structure and function of the livestock marketing system, especially the role played by the various intermediaries (landlords, dealers, etc.) in tying the Sahelian livestock producers with the coastal consumers of meat. While some work already has been done in this area, the studies have been largely anthropological, and there is clearly a need for detailed economic analyses of how these various groups affect the efficiency of the marketing system. One aspect of such studies should be the question of ^{spatial} ~~spacial~~ price equilibrium. One measure of the efficiency of a marketing system is the degree to which regional price differences reflect the cost of transporting goods between markets. While price data for livestock are largely lacking in Ghana, this is an area of potential field research. Related to this is the question of the relative economies of hoof versus truck transport of livestock, a question which has gained special relevance with the rapid increase in petroleum prices. Another area in which very little research has been done is the nature of

the import trade in canned meats and chilled mutton into Ghana. Given the volume of this trade and the fact that this meat is a substitute for Sahelian livestock, this is an area which clearly warrants further investigation.

There is also considerable work to be done in refining the projections of both the supply and demand of imported livestock products in Ghana. While the current state of the data, especially the absence of reliable price data for most types of livestock, makes this a rather hazardous undertaking, there is a strong need for such improved forecasts. The drought in the Sahel and the rapid changes in commodity prices have thrown the previous projections of both supply and demand into question, and policy makers cannot continue to rely on the old projections as a basis for decision making.

Footnotes

¹As explained below, there is reason to suspect that the official trade statistics cited in this paper underestimate the true volume of foreign livestock entering Ghana.

²Approximately 10 per cent of Ghana's cattle production takes place in the relatively disease-free plains around Accra; most of the rest of the cattle are produced in the north. Although cattle production is restricted largely to the northern regions of the country, sheep, goats and poultry are more evenly distributed throughout Ghana (21, p. 70). Cattle, however, are by far the most important type of livestock from a consumption point of view, providing over 60 per cent of the total meat consumed (18, p. 33).

³The cattle equivalent of canned meat was calculated using an average yield of 110 kg. of meat per animal (18, p. 8). Consumption of domestically produced cattle was estimated on the basis of an average domestic cattle population of 527,500 during the period 1963-68 (5, p. 71) and a take-off rate of seven per cent (11, p. 431).

⁴Both recorded imports and official slaughter statistics showed strong downward trends throughout this period, a point which is discussed later in this paper.

⁵Much of the following discussion is based on 9. For a similar description of the marketing system in Nigeria, see 3.

⁶It should be noted that while much of the agricultural marketing in Ghana is carried out by women, the livestock trade is almost exclusively a male domain (9, p. 24).

⁷Very few cattle owners or dealers in West Africa will attempt to trek younger animals long distances to market, as the mortality rate among young animals on such drives is quite high. Few of the cattle going to market on hoof in West Africa are younger than 48 months (23, pp. 56-60).

⁸A "dealer" is an intermediary who buys cattle from a long distance trader and then resells them almost immediately in the same market for either cash or credit.

⁹There are many other ways besides the rather small commission, in which the landlords profit from their activities. Some secretly are engaged as livestock dealers, with their agents buying animals from their own clients (the sale price of which has been negotiated by the landlord); they often receive commissions from lorry park owners and others to whom they refer business, etc. For details, see 9.

¹⁰Throughout most of West Africa, the only weighing that takes place in the livestock marketing system is conducted by the butcher, who sometimes weighs the individual portions of meat he sells. Since weight data are not recorded for the livestock that are sold, any price data that are collected on these sales are largely meaningless (9, p. 19).

¹¹One must approach such figures with caution, as they were calculated on the basis of incomplete data on production, imports, and population. For example, the 1971 population census indicated that the estimates of Ghana's population which were used during the mid-sixties were too high (19).

¹²This is also the per capita consumption implied by the beef production and import figures for 1966 which were cited earlier in this paper.

¹³In the mid-sixties, import duties raised the price of live cattle in Ghana by roughly 50 F CFA (\$.20) per kg. of live weight above the price found in the southern regions of neighboring Togo and Dahomey, two countries which did not have import duties on cattle. This boosted the price of cattle in Ghana nearly 40 percent above that found in the neighboring countries (18, pp. 40-41).

¹⁴The live animal equivalency was calculated using an average meat yield per imported animal of 10.6 kg. (18, p. 10). These figures probably overstate the relative importance of the trade in mutton, as substantial numbers of goats and sheep probably enter the country without being recorded. The trade in fresh meat from abroad is much more stringently controlled, with little of this meat probably entering the country unrecorded.

¹⁵In contrast to livestock production, roughly two-thirds of Ghana's total fish consumption is met by local production (21, p. 71).

¹⁶When the quantities imported were regressed against time (measured in months), the coefficients of time in every case were negative. These coefficients were significant at the .0001 level for both sheep and goat imports, and at the .02 level for cattle imports.

¹⁷Throughout the period 1963-71, import prices of meat (in current terms) showed no statistically significant upward trend, while the consumer price index rose by 77 percent. This implies a substantial erosion in the real price for meat during this period. (As mentioned earlier, the reliability of these "derived" prices is somewhat open to question.)

¹⁸It is generally felt that the production of small animals (sheep and goats) was less affected by the drought than cattle production.

References

1. "African Trade in Meat, 1954-63," Monthly Bulletin of Agricultural Economics and Statistics, 15, 1 (Jan., 1966), 1-10.
2. Berg, Elliott, The Recent Economic Evolution of the Sahel (Ann Arbor: Center for Research on Economic Development, 1975).
3. Cohen, Abner, "The Social Organization of Credit in a West African Cattle Market," Africa, XXXV, 1 (January, 1965), 8-19.
4. F.A.O., Food Balance Sheets: 1964-66 Average (Rome: 1971).
5. Ghana, Central Bureau of Statistics, Economic Survey 1968 (Accra: 1969).
6. _____, External Trade Statistics of Ghana, various issues (Accra).
7. _____, Quarterly Digest of Statistics, XIX, 3 (Sept., 1970).
8. _____, Statistical Yearbook, various issues (Accra).
9. Hill, Polly, "Landlords and Brokers" in Markets and Marketing in West Africa (Edinburgh: University of Edinburgh, 1966) pp. 1-24. Also reprinted with minor changes in:
 - 9a. Cahiers D'Etudes Africaines, VI, 23 (1966), 349-66.
10. _____, "The Northern Ghanaian Cattle Trade," in Markets and Marketing in West Africa (Edinburgh: University of Edinburgh, 1966), pp. 65-80.
11. Hutchinson, R. A., "Stock and Methods of Animal Husbandry" in J. B. Wills (ed.), Agriculture and Land Use in Ghana (London: Oxford University Press, 1962), pp. 425-36.
12. I.B.R.D., Commodity Trade and Price Trends (1973 Edition), (Report EC-166/73, Washington: August, 1973).
13. Kaplan, Irving, et al., Area Handbook for Ghana (Washington: U.S. Government Printing Office, 1971).
14. Lawson, Rowena M., "The Consumption Approach to Measuring Agricultural Production of Foodstuffs," Food Research Institute Studies, V, 3 (1965), 205-15.
15. Mittendorf, H. J. and S. G. Wilson, Livestock and Meat Marketing in Africa (Rome: F.A.O., 1961).
16. Poleman, T. T., "The Food Economies of Urban Middle Africa: The Case

of Ghana," Food Research Institute Studies, II, 2 (May, 1961), 121-125.

17. "Roundabout," West Africa, April 17, 1965, p. 428.
18. Sarniguet, J., Tyc, J. and Peyredieu du Charlat, F., Supplying Middle-West Africa With Meat (République Française, Secrétariat d'Etat aux Affaires Etrangères, Conseil de l'Entente, Paris, 1969).
19. United Nations, Statistical Office, Demographic Yearbook 1973 (New York: 1973).
20. _____, Statistical Yearbook 1972 (New York: 1972).
21. U.S.D.A., Economic Research Service, Foreign Agricultural Service, Ghana: Projected Level of Demand, Supply, and Imports in 1965, 1970, and 1975 (Washington: 1964).
22. Wall Street Journal, June 19, 1975.
23. de Young, Maurice, "Some Notes on the Economics of the Beef Industry in the West African Subregion," Agricultural Economics Bulletin for Africa, No. 10 (July, 1968), pp. 49-60.
24. Africa South of the Sahara 1974 (London: Europa Publications, Ltd., 1974).
25. U.T.A. French Airlines, Western and Central Africa (Paris(?), 1971).
26. Hill, Polly, "Census Statistics (1960) Relating to Beefcows and Meat Cattle in Ghana" (Ann Arbor: Center for Research on Economic Development, 1960), mimeo.