

# A Typology of Delaware Farms 1850

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## I. INTRODUCTION: PURPOSES AND DATA.

This essay is the first formal report of an ongoing project in the rural culture of Delaware. This project has two closely related purposes. First, it is intended to model the agricultural economy of the State in the period, 1850-1950. Second, it seeks to describe that economy in as precise detail as possible at selected times during that period.

This piece deals with the first year, 1850, in our chosen time frame. It attempts to create a geographical typology of the State's agricultural ecosystems and to provide a theoretical model, which will guide future research into the agricultural evolution of this State.

The basic data for the present piece are taken from a random sample, stratified by hundred, the smallest unit of local Delaware government, of 1567 farms listed on the 1850 United States Census, manuscript schedule, Schedule of Agriculture. This schedule recorded information on 45 farm attributes and commodities. Of these, 10 were not found in any sample farms. Another 7 variables occurred so rarely that they are not useful for general analysis. A third set of variables are not used in the present analysis because their distribution was exceptionally limited or because we as yet know too little about their production to permit informed analysis. The typology, therefore, is based upon an analysis of the principal crops and commodities produced by Delaware farmers.

## II. TOWARD A TYPOLOGY OF DELAWARE FARM REGIONS.

### A. Overview.

Within the modest constraints imposed by the immediate needs of the farm family, the structure of Delaware agriculture in 1850, no less than that of today, was formed by an ongoing process of adapting human and capital resources to the limits of the land, on the one hand, and the organization of the market, on the other.

At the most local level, the forms of Delaware farmers' adaptations to ecology and market were astonishingly varied and precise. In every hundred farmers used the peculiarities of the locality to their advantage. In Cedar Creek Hundred, Sussex County, for example, farmers used the extra two months of grazing time, which the marshes of the hundred's eastern edge provided, to raise more livestock on less corn than any of their neighbors in the State's southernmost county. In Brandywine and Christiana Hundreds, by contrast, the hilly Chester-gneiss soils were particularly well-suited for grass. Framers here turned more than half of their tillage to haylands, began to develop a system of rotation grazing, and imported feeder cattle to service the growing demand of the Wilmington and Philadelphia markets. Their neighbors in White Clay Creek Hundred likewise raised cattle for these markets. But here, where the land was more level and the soil better adapted to grain, cattle were fed more with oats and corn than with hay.

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The examples of such minutely local agricultural practices might be multiplied. To do so, however, would obscure the more important points: namely, that in shaping their farm practices to land and market, Delawareans developed indentifiable agricultural ecosystems; and that local practices are best understood within the context of these generalized forms of husbandry.

B. The Overarching Pattern: Delaware North and South.

Delaware's mid-nineteenth century agricultural regions may be broadly organized along a North-South axis. This general organizing principle is summarized conveniently by an examination of farm values. (Table 1 ). Throughout the State, farms averaged uniformly about 150 acres, of which about 100 were improved. But farms differed radically in value from place to place. Whereas the average New Castle County farm, for example, was worth the average farm in Sussex County was valued at but . In the northernmost Hundreds, along the Pennsylvania border, farms were usually valued at about \$60 an acre. As one moved southward, farm value declined steadily. In the central part of the state, the average farm was worth about \$2,000, or on the order of \$12 an acre; and in the southernmost hundreds, the average farm was worth no more than \$8 an acre.

These differences in value reflect the varying productivity of Delaware's several farming regions capitalized in land. In the north, farming was ordered by the production of wheat and butter for the market. (Tables 2, .) Nearly every farmer in this region grew some wheat. The average northern farmer raised twice the 50 or so bushels that his family might use each year. And large farmers in this region produced 2,000 or more bushels of wheat. Similiarly, the average farmer in the north kept 2, 3, or even 5 milkcows beyond the 2 which provided for his family; and northern farms produced an average surplus of 450 pounds of butter in 1850.

Farms in the north were the most intensively cultivated + in the State. More than three quarters of the farmland in this region was improved, and farmers here tilled two thirds or more of their improved land. (Table 8, .) The average northern farmer owned more than \$150 of tools and machinery. In addition to the usual shovels, hoes, dung forks, scythes, sickles and grindstones of traditional husbandry, this sum allowed him to purchase 4 or more plows, often of modern, patented design. Most of these farmers had fans worth \$20 or more with which to clean grains. Some had horse-drawn threshers and hay rakes. Many farmers in these regions had horse-drawn cultivators, suggesting that corn was planted in closely spaced rows rather than with the traditional six foot spacing. Finally, a substantial number of northern farmers participated in the field reforms of mid-century, and sowed clover and grasses.

The southern hundreds were a very different agricultural world. The railroad era in southern Delaware was only beginning in 1850. Farm produce still travelled by water or was driven on foot to Philadelphia and Wilmington. Without careful attention, Southern soils made for difficult farming. Much of the land was swamp and marsh. That which was dry, was sandy and drained so quickly that the risk of crop failure was extreme in times of drought. But it was only the rare farmer in this region who participated in the agricultural reforms of his time. Almost no one sowed grass or clover; few farmers grew hay. (Table. 7 .) Livestock still foraged among native grasses for their summer keep, and, possibly, in woods and marsh for winter fare. Frequently,

farms in this region had less than 25 dollars in tools and supplies --a sum which usually purchased but a single plow, a harrow and a modest supply of hand tools. Everywhere the normal southern farmer still trucked his produce, his tools, himself and his produce in carts. (Table 10.)

In contrast to northern husbandry, that of the south was relatively extensive. The proportion of the average southern farm which was improved was about the same as in the north, but the average southern farmer tilled only a third of his improved acreage. (Table 8.) In contrast to the northern crop system, which was diversified among the cultivation of Indian Corn, oats, wheat and hay, that of the south was devoted almost solely to the production of corn. Fewer than half of the farmers in the south of the state produced Delaware's most valuable grain, wheat.

Many of those who grew wheat, grew only 20 or 30 bushels, the product of 3 or 4 acres, for use at home. (Tables 2, 8.) Similarly, Delaware's southern hundreds produced little market butter. In many southern hundreds, half or more of all farms had only a single cow; and in most of these hundreds, 90% of the sample farms contained two or fewer cows, or, depending upon milk production, only enough to meet the family's dairy needs. (Table 13.)

By all accounts, southern crop yields were poor. As late as 1880, the southern farmer could anticipate only 8 bushels of wheat and between 10 and 15 of corn from each acre sown. But because they planted relatively so much corn, southern Delaware farms produced about as much corn as all but the largest northern farms. This



corn was used to feed livestock. It served as part of an agricultural system directed to the production of meat and wool from swine, sheep and beef cattle. Southern livestock herds were not large in absolute terms, but they were relatively more important to southern farms than they were to the northern farmer. The southern farmer invested between 20 and 30 cents of working capital in his livestock for every dollar of fixed capital that he invested in his farm. (Table 15.) The northern farmer, by way of contrast, invested only between 8 and 10¢ in livestock per dollar of investment in his farm. Thus, while the 10 or 12 swine, and 4 or 5 beef cattle in the average southern herd, were small numbers even by the standards of 1850, they were still the southern farmer's basic source of income.

This system of corn-animal husbandry was complemented by the southern system of home manufactures. (Table 17.) Almost no farmers in northern Delaware engaged in home manufactures whereas between half and 85% of the farms in the southern hundreds listed home manufactures on the census schedule. The substantive details of this system of home manufacturing have yet to be discovered. Some farm families undoubtedly participated in a putting out systems organized by local and distant merchants. Others probably produced goods only for local use. In either event, cottage industry was an important source of income for southern farm families. Finally, as they do today, Delaware's southern marshes and creeks yielded abundantly and some southern farmers substantially supplemented their income with occasional occupations: hunting, trapping,

and fishing.

The division between northern and southern Delaware, then, was substantial. On the one hand, northern farms conformed approximately to that pattern we associate with the early days of capital intensive agriculture in the United States. Northern farmers participated actively in the improvements of their time. Their production was organized about making efficient use of their land. Southern Delaware's farmers may also have used their land as efficiently as possible, given the constraints of mid-century technology, transportation, and the apparent unavailability of capital in the southern region. However, that use was sharply limited. Like farms in marginal agricultural regions from time out of mind, farms in southern Delaware were organized about livestock rearing, cottage industry and incidental primary occupations.

This broad distinction between northern and southern patterns captures accurately the most significant characteristic of Delaware farming in 1850. To paint only with so broad a brush, however, is to ignore the presence of identifiable sub-regional patterns within these larger agricultural systems. Together, these sub-regional patterns formed a complex agricultural system. And, indeed, it might fairly be said that this complexity itself is the best general measure of the extent to which the market had already by 1850 organized the Delaware rural landscape.

C. The Regional Organization of the Cereal Grains:  
Wheat, Buckwheat, and Rye.

Delaware farmers grew three cereal grains: wheat, buckwheat and rye. (Table 2-4.) Buckwheat and rye were grown on poor land by a few farmers for home use and/or as supplemental livestock feed. Wheat was grown in commercial quantities. On every relevant measure--frequency of occurrence, production per farm, production per improved acre--the production of these grains was organized along clearly defined regional lines.

1. Wheat Production.

With prices at or above \$1.25 a bushel throughout the last half of the nineteenth century, wheat was easily the most valuable of Delaware's field crops. The commercial production of wheat was concentrated in 8 northern hundreds. (Table 2.) As we have noted, nearly every farmer (more than 90% in all but one hundred) in this area grew some wheat. Average production in the region ranged from a high of 474 bushels per farm in St. George's Hundred to a low of 104 bushels per farm in Brandywine Hundred. In the northernmost hundreds, Brandywine and Christiana, 5% of the sample census farms produced more than 500 bushels of wheat in 1850. And in the heart of the Delaware wheat belt, in St. George's Hundred, a full 40% of the sample farms produced more than that amount. Throughout this region, farms averaged more than 2 bushels of wheat produced for every improved acre. (Table 2.) No hundred outside of the region produced even half this amount of wheat.

In each of these eight hundreds, farmers allotted about a quarter of their tilled land to wheat. Within these hundreds, there were two discernable patterns of wheat growing. In the northern tier hundreds along the Pennsylvania border--Mill Creek, White Clay Creek, Brandywine and Christiana--farmers grew lesser absolute amounts of wheat. In these hundreds, production per farm ranged between 110 bushels and 166 bushels. In the southern four hundreds of the wheat belt--Pencader, New Castle, St. George's and Red Lion--average production per wheat producing farm ranged from about 300 to more than 500 bushels. These differences are largely accounted for by the differences in size between farms in the two areas. Farms in the northern tier hundreds averaged about 100 total acres, of which about 75 were improved. (Table 8 .) In the southern four hundreds of the wheat belt, the average farm contained more than 140 improved acres, the largest amount in the state. The correlation between farm size and wheat production ( $r = .64$ ) was imperfect, but highly significant ( $\text{sig.} = 0.000$ ). Its imperfection, however, seems more a function of the kind of minute local variation described above (e.g., the relative concentration of Brandywine Hundred farmers in hay raising) than an indictment of the clear pattern of increasing wheat production proportionately with increases in farm size, which characterized wheat belt farming.

As one crossed the St. George's Appoquinimink border, the cultivation of wheat was sharply de-emphasized. The average production of wheat per improved acre fell immediately to 1 bushel or less. The further south one went, the less wheat one encountered. Two regional patterns may be identified within this southern pattern of de-emphasized wheat production. In nine hundreds in the central

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portion of the State, at least half, and usually three quarters of the sample farms grew some wheat. In the two most northerly of these hundreds--Duck Creek and Appoquinimink--farmers who raised wheat raised small commercial crops of about 125 bushels, or surplus of something like 75 bushels. In the remaining 7 of these hundreds, farmers raised only about 50 bushels a year, or almost exactly the amount needed at home. Farmers throughout this region tilled between 30 and 45 acres. (Table 8.) This modest wheat production represented the yield of about 10% of that acreage, or between 3 and 5 acres.

In five of the State's most southern hundreds, almost no wheat was grown in 1850. Wheat was found in less than a third of the sample farms from this area. If they grew wheat at all, these farmers grew less than 30 bushels, the product on poor southern soils of between 3 and 5 acres.

## 2. Rye and Buckwheat.

More than a third of the sample farms in Dagsborough Hundred grew rye. Of these 23 farms, 20 produced more than 200 bushels, 16 produced more than 400 bushels, and 1 produced 900 bushels. Dagsborough was located in the midst of the wheatless belt of southern Delaware. This local production of rye served the bread grain needs of these farmers in the nearby hundreds, where the soils were suited to neither wheat nor rye.

About a fifth of the farmers in 2 northern tier hundreds--Brandywine and Mill Creek--and in 7 central hundreds, raised small amounts of rye and/or buckwheat. Most of these farmers

also raised wheat. This pattern seems to suggest that rye and buckwheat were grown by farmers with limited capacity to produce wheat either because of the quality of their land or the inadequacy of their capital. Such farmers apparently used the lesser grains for home use consumption, and marketed what wheat they could grow. /Outside of Dagsborough, however, other Delaware farmers produced either rye or buckwheat in commercial quantities./

D. The Production of Animal Food and Fodder: Indian Corn, Oats, and Hay.

The largest portion of Delaware's arable land was allocated to producing the state's three food and fodder crops: Indian corn, oats and hay. In most hundreds, farmers laid between 70% and 85% of their tillage to these three crops, and in the extreme southern hundreds, that proportion exceeded 95%. These three crops were grown in varied combinations in the state's different agricultural systems. The regional organization of these combinations was related closely to regional patterns of livestock rearing and to patterns of cereal grain production.

Standard animal units provide a convenient measure of the feed and fodder needs of farms. In brief, these units adjust for the different food needs of different animals. Whereas, for example, a single horse may require between an acre and a half and two acres of average pasture to meet its food needs, 8 or 10 hogs may be raised on an acre of pasture. Thus, standard animal units equalize this disparity by counting horses as 1.5 such units and hogs as .1 units.

As Table 16 illustrates, farmers in the large farm region raised the largest average number of animal units per farm of any of the regions. The density of animal units per acre and per improved acre was greatest in the northern tier hundreds. In the central region of the state, the absolute numbers of animal units raised, and the density of animal units per farm acre declined, while the density of such units remained at the same levels as in the large farm belt. In Cedar Creek Hundred, both the number

of animal units per farm and per acre increased dramatically largely because of the use of marshes for grazing. In three other southern hundreds, animal densities were exceptionally low. But in two southern hundreds--Dagsborough and Baltimore--these densities equalled and even exceeded those of the northern tier. In short, farmers in different places had very different fodder and food needs. They met these needs in very different ways.

Most of Delaware's arable land was adequately suited to the production of Indian Corn. Nearly every Delaware farmer raised some corn, and in the aggregate, corn was the state's principal source of food and fodder for livestock. As Table shows, farmers in most hundreds produced between 40 and 55 bushels of corn per animal unit. There were two marked exceptions to this pattern. The first was the marshland pattern. In two hundreds--Murderkill and Cedar Creek--farmers used less corn, about 35 bushels per animal unit, than those in landlocked hundreds. Neither hundred produced hay or oats in significant proportions or quantities. The relatively low average corn production indicates that they used an alternative source of animal feed, probably marsh hay. The second distinctive pattern was that associated with the hay belt farms of the northern tier, where the corn production per animal unit was the lowest of any in the state. Here, hay and oats were used as the primary diet for animals, making beasts on these farms the fattest and most productive in the state.



## 2. Regional Combinations.

In the northern wheat belt hundreds, farmers raised more standard animal units per farm and per acre than in any other region of the state. These farms fed between 10 and 15 milk and beef cattle, more than 3 horses and an ox, as well as a small number of swine and occasional sheep. To meet their feed requirements, these farmers used between 60 and 75% of their tilled land. (Table 8.) The northern farmer planted less than 40% of his tillage in Indian Corn, the lowest proportion of any region in the State. (Table 5.) Alternatively these farmers allocated about 25% of their production land to oats and another 10% to hay, the highest proportions in the State. (Table 8.) Within this mixed system of food and fodder production, there were measurable differences between farming patterns in the four northern tier and the four large farm hundreds.

To feed his 4 or 5 milkcows, 5 or 7 beef cattle, 2 horses, his ox and his small group of swine, the northern tier farmer used between 60% and 74 % of his tilled acres. These farms relied the least of any on corn for food and fodder. The average production of corn per animal units and of corn per improved acre was the lowest in the state. On the other side of the food and fodder equation, the production of hay per improved acre and the proportion of tillage allocated to hay was higher in these hundreds than elsewhere in the state. The production of oats per farm and per improved acre was second only to that of the large farm belt. (Table 6.) Between these four hundreds,

the average production of corn was constant and the production of oats and hay varied proportionately with each other. In Brandywine and Christiana Hundreds, farmers grew more hay and fewer oats. In Mill Creek and White Clay hundreds, the pattern was reversed. These local patterns limit the utility of generalization. But as a kind of heuristic average, we can say that the normal farmer in this region planted between 10 and 12 acres in Indian Corn, between 10 and 20 in oats, and a similiar acreage in hay.

In the large farm belt, the average farmer used between 50 and 100 acres, or between 75% and 80% of his tilled land for corn, oats, and hay. (Table 8.) Farmers in these hundreds generally laid more than 30 acres to corn. Coupled with the best land in the state and technologically advanced cultivation, these large acreages produced yields of between 300 and 500 bushels per farm. In St. George's Hundred, the average farmer got more than 1300 bushels of corn, the highest yield per animal unit in the state. Farmers in these hundreds planted the largest acreages in oats that were found in the State. They achieved also the largest per farm yields of oats. Hay production, by contrast, was relatively de-emphasized in the large farm hundreds. Farmers here usually made hay from between 10 and 20 acres for hay yields of about 20 tons per farm; approximately the same as on northern tier farms. Large farms had the largest absolute number of anumals. And it seems clear that animals here were grain fed, and that hay was used as a dietary supplement, presumably for dairy cattle. ]

As in the production of cereal grains, the St. George's-Appoquinimink Hundred line marked a major divide between systems of fodder cropping. In St. George's Hundred, the average farmer planted 37% of his tillage in Indian Corn, the highest average in the northern hundreds. In Appoquinimink, 68% of the average farmer's tillage was laid to corn. That percentage was the lowest in the southern part of the state, and the most southerly hundreds, the average farmer grew almost nothing but corn. *PEOPLE OF 17<sup>TH</sup> C<sup>ENT</sup>URY ARE ALMOST NOTHING BUT CORN*

Within this culture of corn, there were three distinctive patterns of fodder crop production. Within the central hundreds, the density of animal units per acre was about the same as in the large farm belt, although these slightly smaller farms carried fewer units per farm than did large farms. Throughout the region, some farmers grew all three food and fodder crops. Central farms produced about 40 bushels of corn per animal unit, or about the same amount as farms in the large farm area. But the central farmer grew substantially less hay and oats than his northern neighbor. Less than half of all central region farms raised hay. Farms that did so raised small amounts of less than 10 tons per farm, or only half as much per improved acre as northern farmers. Farmers in these central hundreds also grew oats, but the average farmer who raised oats, raised only about 100 bushels, almost exactly enough to meet the food needs of two horses. (Table 6.) In part, this lessened production of hay and oats was a response to the specific geography of the central region. Large areas of marsh fringed the eastern edges of these hundreds, particularly Duck Creek and Milford. Farmers here probably used marsh rather than field grown hay as a supplement to corn in their animal's diet. More important, farmers in the central

region tilled less than 40% of their improved acreage, suggesting that they kept relatively large areas in pasture. (Table 8 .)

In contrast to northern farmers who were moving toward intensive feeding and rotation grazing central farmers seem merely to have fenced their land and pastured their cattle. Such hay as they made was supplemental to the corn and pasture diet of their livestock.

In the wheatless hundreds of the south, farmers in Baltimore, Dagsborough, Broadkiln and Broadcreek planted between 85% and 96% of their tillage in corn. (Table 8 .) These farms represent a distinctive pattern of southern husbandry. Farmers in these hundreds had improved acreages that were among the smallest in the state. In marked contrast to all other hundreds below the St. George's line, however, these farmers tilled more than half, and usually more than two-thirds their arable land. This land was cultivated relatively intensively by southern standards. Farmers in these hundreds produced more corn per improved acre than farmers in any other region of the state. Farmers in two of these hundreds raised more animal units per acre than any farmers excepting those in the northern tier. In a third of the four hundreds, animal density was relatively great. It was only in these southern hundreds that more than an occasional farmer raised hay, and in Baltimore and Dagsborough Hundreds, a third or more of the sample census farms contained hay. This pattern of the relatively intensive use of a small improved acreage was probably a specific response to the ecology of the region. Each of these hundreds contained large proportions of swamp or otherwise unusable land. In contrast to the more general southern pattern of extensive land use, farmers here made the best agricultural use of that land which they could

farm. As the presence of woodcutting and finishing tools and gear in inventories from these hundreds suggests, the remainder of their land provided other kinds of income. These farms were not absolutely valuable, but the per acre values were among the highest in the south. Given the relatively low proportion of land which was improved in these hundreds, these high per acre values reveal the relatively high worth of the improved acreage of these farms. And although the income of farmers here cannot have been commensurate with that of central or northern farmers, one detects in occasional larger herds of pigs, and beef cattle, the roots of a profitable corn-livestock husbandry.

In contrast to these "intensive" southern farms, farmers in the remaining southern hundreds used their land extensively. Farms in these hundreds had large improved acreages, of which less than a third was cultivated. (Table 8 .) The production of corn per animal unit was higher here than in other parts of the state; but the production of corn per improved acre was the lowest of any region in the state. The density of animals on these farms was markedly low, excepting in Cedar Creek. (Table 16 .) But relative to other southern farms, some of these farmers kept large herds, 5 or 7 beef cattle, 3 or 5 dairy cows, a dozen sheep, and 10 or more pigs. Such farmers grew some wheat, but no oats or hay. And livestock on these extensive southern farms were fed, it would seem, solely with corn, native grasses, marsh hay and woodland forage.

E. Plowing and Hauling: Horses and Oxen.

[ With some exaggeration, but not much, it might be said that the divide between the world of the peasant and that of the modern is the divide between the horse and the ox. The ox is stronger and more durable. With him the peasant could till even the poorest soils. For heavy work, he was unmatched. He thrived on pasture grass. But the horse was faster. On average soils he could cover two acres in the time it took to plow one with an ox. In light soils, he could move three or four times as fast as an ox. But the horse was more expensive than the ox. In 1850, in Delaware, an ox might be had for as little as \$12. Horses cost at least \$20, and a good plow horse might run the farmer \$50 or more. A horse needed oats if he was to survive in good working health. He was more fragile and required more care. In light of these differences, it is scarcely surprising that horses were used to plow on the lighter soils of northern Delaware and that oxen were the customary unit of power throughout southern Delaware. Indeed, it may have been that the speed of horses was essential if truly large acreages of grain were to be planted in good time, and it is surely true that only northern yields justified the cost of horses. Contrarywise, on the poorer lands of the south, less capital intensive farms continued at mid-century to use mostly oxen to plow.

In Little Creek, Broad Creek and Broadkill Hundreds in Sussex County, a substantial portion of the farmers, between 15% and 25%, farmed without horse or ox, but elsewhere all but the

poorest farmers had at least one beast with which to plow. For those with but one beast, the horse was preferred throughout the state, probably because he could be ridden as well as worked. Of the 219 sample farms with only one beast, 210 had a horse and only 9 had a single ox. Among those with two work animals, however, there was a clear regional distinction between horse and ox husbandry. In the northern and central hundreds, as far south as the Milford-Nanticoke line, more than 90% of these farmers plowed with 2 horses. South of that line, the pattern was reversed and most two-animal farmers plowed with 2 oxen. (Table 18 .)

As the teams grew larger, the possible variations became greater; but as a rule, the association of the ox with southern corn cultivation and the horse with wheat cultivation organized the composition of these teams. In the south, three-animal farms almost always had 2 oxen with which to plow and a horse for the transportation of small surpluses and for riding. (Table 19 .)

In the large farm belt, the three-animal farm was invariably a three-horse farm. No sample farm from this region with three work animals had an ox. In the north-central hundreds, which still grew commercial wheat, the large farm pattern continued. In the more southerly of these hundreds, however, the two-ox/one-horse pattern was predominate. Finally, on the small farms, in the hilly northern tier, oxen apparently were still used for hauling and barnyard work. Like grain farmers everywhere, these northern tier farmers had a team of two horses, but if they had a third beast, it might well be an ox, especially in Christiana and Mill Creek Hundreds.

Farmers who could support 4 animal power units had wider choices. (Table 20.) These farmers tailored their power requirements more precisely to the agricultural ecology of their region. In the wheat belt the four-animal farmer was still a four-horse farmer, attempting, one suspects, to plant as much grain as possible in the short times available to him. Some northern tier farmers were doing the same thing, but a slightly larger number had either 2 oxen and 2 horses, or 3 horses and an ox. These differences revealed the different crop mixes and workloads of farms on the varied topography of these hundreds. The central and southern farmer, in this class of animal users, by contrast, almost always had one ox team and one horse team. The former was for corn, lumbering and heavy work on or off the farm. The latter was for wheat, for transport, and where it was grown, for mowing hay. The only systematic exception to this pattern was in the southern intensive hundreds where some farmers used two teams of oxen.

If he had a fifth draught animal or riding animal, the farmer in all eight northern hundreds usually had another horse. (Table 21.) No farmers in this region who had 5 power animals had more than 2 oxen and most had only 1. In the central region, the five-animal farmer had an extra horse, not an ox. The 3 horse/2 ox pattern was the most common 5 animal pattern here and in the wheat producing southern hundreds. In southern intensive hundreds, this pattern remained common; but here, as many 5 animal farms had 2 ox teams and a single horse as had 3 horses and an ox team.



In the north, six animal farmers, even in the large farm hundreds, usually had a team of oxen, suggesting the need on these largest farms for highly specialized heavy work animals. South of St. George's, most farmers with 6 power animals had 2 horses and 4 oxen. Clearly, there was but limited use for the speedier horse and the new equipment designed for him on farms without ample capital or without the capability of producing large acreages of grain.

Considered together with the Delaware patterns of cropping, this configuration of farm teams illustrates precisely the interplay between ecology, technology, capital, and proximity to markets, which determined the regional shape of nineteenth-century Delaware agriculture. The future lay easily with the horse. In the cultivation of wheat (where planting and harvesting seasons lasted two weeks or less) and in the mowing of hay (which needs to be done before it rains or the hay goes sour) the horse possessed every advantage but cost over the ox. Even in the raising of corn, the cultivation of which radically altered with the development of the horse-drawn cultivator, which permitted the crop to be planted in closely spaced rows rather than in 6 foot squares, the horse would eventually win out. But the horse was not much good, if the farmer couldn't afford him or use him efficiently by raising larger crops. He gave to the farm on good land with adequate capital, a decisive and geometrically increasing advantage. With each additional horse, such farmers increased the inherent advantages of their land and their capital. That most Delaware farmers used horses where they could is quiet testimony to their need to make their land pay. That only

those in the large farm belt, on the most level and best land in the state could do so effectively, foretold the future; for of all the farms of 1850, it is only these that have survived without massive change, into the present.

F. Stock: Swine, Sheep, Cattle and Milk cows.

Like all farms, mid-nineteenth century Delaware farms were internally organized by their mix of livestock and crops. The distribution of the four principal kinds of Delaware livestock--pigs, sheep, cattle and milk cows--was closely related to varied regional patterns of cropping as well as to the availability and the structure of regional markets. In the northern region, Delaware farmers divided their production between wheat, meat and butter. As one moved southward, stock rearing became relatively more important to the farmer. In some southern hundreds, farmers seem to have produced no marketable crop except livestock. This overarching pattern is graphically evident in regional differences, in the ratio of working capital invested in livestock to the amount of fixed capital invested in the farm. As Table 15 shows, this ratio varied substantially between agricultural systems. In the northern tier, the average farmer invested between 8¢ and 11¢ in livestock for every dollar he invested in his farm. In the central region that investment increased to between 18¢ and 20¢. In southern hundreds, which were characterized by extensive cultivation, the ratio ranged between 22¢ and 33¢. Finally, in the intensive southern corn hundreds, the average farmer invested about 20¢ in livestock per dollar of farm investment.

Even though stock were relatively less important as a percentage of the northern farmer's income, he generally raised more animal units and had more stock and more valuable stock than the farmer in the south. (Table 16.) As between any two kinds of livestock--milk cows and feeder cattle, or feeder cattle and sheep, for example--the northern farmer was relatively concentrated in

the larger and more valuable. The northern farm's advantage in stock rearing was less than in grain cultivation, but it was still substantial.

#### 1. Swine.

Nearly every Delaware farmer raised some pigs. (Table // .) In the four northern tier hundreds, however, pigs were kept almost exclusively for home use. Only about 15% of the farmers in these four hundreds raised commercial numbers of swine (e.g., more than 8), and the average farmer had only between 5 and 7 swine, the lowest average of any agricultural region. Similiarly in the large farm area of northern Delaware, farmers invested a relatively low proportion of their assets in pigs. In St. George's Hundred, for example, some 20% of the farmers produced 10 or more pigs; but the average size of the swine herd was a relatively modest 8. Throughout the large farm area, farmers kept fewer swine per improved acre than any others in Delaware.

As one moved southward, and particularly when one crossed the Murderkill-Milford line, the density of swine per acre and the average number of swine per farm increased perceptibly. In most central and southern hundreds, 40% of all farmers kept more than 10 pigs. Something like 15% of the farmers in these hundreds owned more than 15 swine; and in every hundred one encountered an occasional large pig operation with 30, 50, or even 60 swine.

As Table // demonstrates, the distribution of swine south of the St. George's followed rather closely the three region pattern of crop, cereal, and feed production. In the central hundreds farmers raised between .11 and .14 pigs per improved acre, excepting in Milford, where some farmers may have specialized in pig rearing.

Throughout most of this region, farmers had 10 or fewer pigs. In the southern extensive hundreds, the absolute number of pigs kept by the average farmer increased to 10 or more, but the density of pigs per improved acre was unchanged.

Finally, in the four southern-intensive hundreds, the density of pigs reached its greatest level. We know little about the characteristics of animals in the past. But the pig today is the most efficient producer of meat per unit of feed. The pig does particularly well on corn. If necessary, however, the pig can forage for itself, unattended, in woods and marshes. He was, therefore, easily the best suited animal for the intensive corn regions of the south, where drought threatened, and large acreages of wood and marshland were unimproved. A hog slaughtered at 130 pounds could yield a gross income of \$8. Southern farmers survived by aggregating such small sums--from home manufactures, lumbering, the sale of occasional surplus corn and the like. The importance of the pig to the small farmer cannot be overestimated. And in its own way, the pig-corn husbandry of the southern intensive hundreds was as intelligent an adaptation to the limited potential of the region as was the capital intensive agriculture of the larger farm belt to its areas.

## 2. Sheep.

Sheep like pigs were inexpensive. A small pig could be had for 40¢, a sow for \$2, or \$3, and a sheep for \$1. Not surprisingly a higher proportion of farmers south of Appoquinimink than in the north owned sheep. . . . But sheep require more care than pigs. They need minimally adequate forage to produce well.

They have never been especially suited to the Delaware climate. And sheep raising has always been a highly specialized farm activity with its own traditions and skills. Sheep, in consequence were kept by fewer Delaware farmers than any other form of stock. Even in the central and southern hundreds, they were found in only half of the sample farms. Farmers in these central and southern regions, who had sheep had modest flocks of between 8 and 12 sheep. Few farmers in these hundreds kept more than 15 sheep. None kept more than 25. Farmers who kept sheep, then, did so as a supplemental farm activity, to make use of land not suited for cultivation or cattle, and to insure some income in lambing and shearing times in which farm finances are at their most precarious.

Fewer farmers, generally less than 10%, in the northern tier hundreds, kept sheep. Those who did have sheep had them for the same reasons as central and southern farmers. Like these farmers, the northern sheep farmer kept only a small flock of 10 or fewer sheep. Alert to the possibilities of income, however, a quarter or so of the farmers in the large farm hundreds were captured by the sheep craze of mid-century. Then as now, sheep were the particularly favored animal of agricultural improvers. And farmers in the large farm belt who went in for sheep did so enthusiastically, and built the largest flocks in the state of 30, 50 or, in individual cases, 200 or more sheep.

### 3. Cattle.

Like pigs, cattle could forage successfully for themselves. Although it is doubtful that farmers in 1850 could have competed in the market had they followed such practices, cattle nonetheless,

allowed the farmer some flexibility and could be accommodated to regions of poor or erratic grain production. Cattle, too, were relatively cheap. A pig might cost the Delaware farmer 40¢ and a sheep \$1.00. A calf cost about the same \$1.00 and a yearling could be had for \$2. Because of their flexibility and low cost, cattle were well suited to southern farms. Alternatively, the profits in cattle increased relative to the quality of their keep. Even under ideal conditions, capital is frozen in cattle for the two years or more between birth and the time they reach marketable weight. Thus northern farmers with more capital and better feed had some advantages in the cattle trade quite apart from their proximity to the Wilmington-Philadelphia market.

These mixed attributes made cattle a typologically transitional animal between the smaller animals and the expensive, specialized dairy cow. (Table 12.) Cattle were distributed more evenly throughout the state than any other important farm commodity. Within the context of this relative uniformity, however, the marked regional patterns persisted.

The production of meat cattle was concentrated in the four hayland hundreds of the northern tier. The average absolute numbers of cattle on farms with cattle in these hundreds closely approximated those of even the large farm hundreds. Farmers in these hundreds kept one cattle for every ten acres of improved land, half again as many as any but the farmers in the southern extensive hundreds. Farmers in the large farm hundreds had slightly larger herds than farmers in the northern tier, but produced fewer cattle per improved acre. In the northern tier hundreds, the average farmer ran about 7 cattle, in the large farm belt about 10. In the central hundreds,

the number of cattle on the average farm fell to between 3 and 5, and in the southern hundreds that number dropped further to between 2 and 4. But again, the same patterns of intensive and extensive corn-livestock husbandry divided these southern hundreds into two groups. In the intensively farmed hundreds, average cattle densities per improved acre equalled those in the northern tier. In the extensive hundreds, by contrast, farmers ran but one cattle on every 20 or 30 acres of improved land, a startling reminder of either the paucity of resources, the inattentive husbandry or the badness of the land in these hundreds.

#### 4. Dairying.

A good cow with calf could be bought for \$10 in Delaware in 1850, but a fine one could cost twice that sum. Fed properly a cow might produce 120 pounds of butter per year, or a gross return of \$30 or more. Fed but adequately, an average cow might produce but 30 pounds of butter, or only enough to keep a family of four. To be profitable, in short, dairying required substantial investment and imposed substantial feed requirements upon the farmer. Farmers everywhere kept cattle for home use, and farmers in many places produced some surplus butter. But the regional concentration of the dairy industry exceeded that of all forms of farm production, save wheat.

The average farm in every hundred north of Appoquinimink produced more than 360 pounds of butter in 1850. (Table 14.) In all but one of these hundreds, the average farm had more than 5 dairy cattle, or between 3 and 4 times the 1.5 milkcows needed to produce the farm family's milk supply. (Table 13.) In relative



terms, the dairy industry was most concentrated in the northern tier hundreds, where the average farm produced between 6 and 10 pounds of butter and carried between 6 and 11 dairy cows for every 100 acres of improved land. In absolute terms, dairying was concentrated in the large farm hundreds where dairy herds averaged between 7 and 11 cattle. In all eight northern hundreds, however, there were some large dairy herds of between 10<sup>1</sup> and 25 cattle; and occasionally herds in the region reached 60 cattle. Of these hundreds, between 5% and 15% of the sample farms produced 1,000 or more pounds of butter, and in Red Lion Hundred, where the figures are distorted by John Reybold's 60-cow herd, the average farm produced 1669 pounds, for a butter income of nearly \$500, or about half the purchase price of a southern hundred farm. The average production of butter per cow in these hundreds, approached the 120 pounds reported by commentators; and with wheat, market butter was the region's principal cash crop.

In the central hundreds about a third of the region's farmers kept 1 or 2 milkcows for home use. Butter yields seem to have averaged about 40 pounds per cow in this region and it is improbable that this third of the region's farms produced any surplus dairy products. Slightly more than half of the farmers in the region kept between 3 and 5 milkcows, and probably generated an annual surplus of between 50 and 100 pounds of butter. Finally, 10% of central region farmers kept more than 5 milkcows, but their herds never exceeded 10 or 12 cows. As this pattern suggests, there appears to have been a modest local market for dairy products, in the towns of Duck Creek and Dover, and in the hamlets which dotted the countryside and the waterways of the central region.

But few farmers served large markets here, and while the production of butter was a complement of the ordinary farm life of the region, that production took place within the confines of mixed family farming rather than as a part of a specialized, capital intensive, market-dominated agriculture.

In the southern hundreds, only a very few farmers produced dairy products beyond those needed at home. In 7 of these 9 hundreds, 10% or more of the farms lacked even a single cow. One southern farmer had 20 milkcows, another had 12. The remaining 720 sample farms from the region contained 7 or fewer cattle. In each hundred, half or more of all farmers had only 1 or 2 milkcows, while the remainder had small dairy herds, most commonly of 3 cows. Something like 15% of the farmers in these hundreds produced 75 pounds or more of butter in 1850, and about 5% in most hundreds produced 100 or more pounds. Like the modest surpluses of the region, these southern surpluses were surely for the local market. Like the rye of Dagsborough, they probably never left the little crossroads towns of the region, and it may even had been that the larger places in the south, like Lewes, depended upon imported butter for their dairy needs.

Unlike wheaten bread, dairy products are a necessity. In the north, increasingly dense urban populations provided a large market for the dairy farmer. The small populations of southern towns provided no such outlet for the southern farmer, even had he been able to afford the herd or to grow the feed that would have made dairying profitable. Had he sufficient capital, of course, the southern farmer might have exported butter to the urban markets

of the north. But his transportation costs could have been prohibitive. His land was ill-suited to produce the grains which would have made his herd productive. And his region was too capital poor to generate the levels of production which might have made volume transport feasible. Likewise, the central region farmer could not compete with the northern dairy farmer and served only local markets. But his land was well suited to dairying, and with the coming of the railroads, the dairy industry would come, also, to central Delaware in another two decades.

### III. CONCLUSION: DELAWARE'S FARM REGIONS AND THE PROGRESS OF CAPITALIST AGRICULTURE IN AMERICA.

The Agricultural Census of 1850 portrayed a rural world that differed strikingly from place-to-place in Delaware.

This section of the essay summarizes these features. In doing this, it reaches toward a model of the development of agricultural capitalism in the United States.

The most striking feature of Delaware's agriculture at mid-century was the large difference between the north and the south. Most land in the north was improved. Most improved land was cultivated. The larger northern farmers tilled 100 or more acres. In 1850, such farmers harvested 1,000 bushels of corn and threshed a like amount of wheat. Their dairy herds of more than 15 cows produced substantial surpluses of market butter. Some northern farmers ran large herds of beef cattle. Their neighbors were diversifying into speciality cash crops--orchards and sheep. Their counterparts in the southern region, by contrast, look to have been becoming hog and cattle farmers, albeit on a small scale. Southern farms, excepting in one area, were used extensively in comparison to the north. And southern land was worth only a fifth as much as that in the north.

This regional differentiation existed within the confines of a more traditional mixed farming and family farm, self-subsistence agriculture. Nonetheless, the data from 1850 reveal starkly the tendency of capitalism to organize the landscape into regions which approximated, under the given technological conditions, the most efficient use of lands. In the north, markets were accessible.

Lands were light and well-suited to grain production. Such lands were easily adapted to the horse-oriented mechanical innovations of the nineteenth century. These forces combined to produce a grain and butter agriculture which was oriented to urban markets. Southern land was relatively inaccessible to markets. This land was of relatively poor quality. Southern farmers concentrated their production in forms of agriculture that required relatively little capital. This strategy, presumably, represented their attempt to reduce the differential rate of return between northern and southern land and to secure a livelihood in the face of the north's substantial advantages.

Scholars disagree as to whether the evolution of capitalism requires such regional differentiation. But there is no disagreement over the fact that the history of the evolution of capitalism was accompanied by regionalization. In Delaware, in 1850, this ongoing process of the adjustment of land to market was recorded in small and in large detail. That southern farmers purchased some horses and attempted to cultivate some wheat is but another measure of their effort to sustain themselves in the face of the agricultural revolution that was proceeding in the north.

This effort failed. To preserve themselves on the land, southern farmers relied on other occupations--fishing, lumbering, home manufactures, flax raising and bee keeping. In the process, they created an agricultural world that looked very much like that of proto-industrial regions everywhere. Such regions are created by the process of regional differentiation that accompanies the expansion of capitalism. At any moment in time, an agricultural system is an unstable balance at the interstices of the stage of technological development, the supply of capital and labor, the capacity of the soil, and the structure of the market. If any factors are changed, the system must readjust. The large historical trend of such adjustment has been towards the growing regional specialization of production and the abandonment of "marginal" lands. Yet a rural culture is tenacious in the face of change. Whether from attachment to locality (with all that implies for rural peoples) or because they lack portable skills or information, rural peoples hang onto the land as long as they can rather than displace themselves to more "efficient" occupations. As an area is

farmer should have increased both absolutely and relatively compared to the farmer who could not or did not make the initial innovation.

The historical working out of the structural process of the capital intensification of agricultural production was halting. The working out of this process of capital intensification is most easily understood by means of a hypothetical example adapted to the specific historical conditions of Delaware, which the 1850 data reveal. Let us assume that the productivity of one unit of labor in Sussex County in 1840 was 1 bushel of wheat, and that the productivity of one unit of labor in St. George's Hundred in the same year was 2 bushels of wheat. The costs per unit of production in St. George's were half those of Sussex County. If all other factors are set equal, therefore, the profits of the St. George's farmer were twice those of the Sussex Countian.

Now let us introduce the corn cultivator into the equation. Corn cultivators were not expensive. A good used one could be had in Delaware for \$2.50. Thus, farmers throughout the state might have afforded one. The corn cultivator increased productivity in one or both of two ways. Most importantly, it allowed for greater plant densities per acre than the earlier method of plowing between widely spaced rows. Second, or alternatively, a corn cultivator was surely faster than either a plow or a man with a hoe. It allowed, thus, for the cultivation of greater acreages. In either event, or in any combination of the two events, the corn cultivator increased production per unit of labor input.

It's introduction into our example could precipitate several events. But in all cases, this technology probably would

have operated to the detriment of the small farmers of the south.

The corn cultivator might have been acquired simultaneously by all Delaware farmers and increased all farmers' production in equal proportion. In this event, production would have risen evenly across the state. Assuming demand remained constant, the price of grain would have fallen. Falling prices would injure the Sussex County farmer more than the St. George's farmer for two reasons. First, his labor costs were already twice as high as those of the St. George's farmer. Second, his lower per unit productivity meant that his ratio of depreciation to profits was higher. In either case his profit margin was lower, thus more vulnerable to price decreases.

In fact, this is the most benign scenario, and the least likely description of actual historical reality. To begin, northern farmers acquired the corn cultivator first. Inventories probated between 1845 and 1854 in New Castle County usually contained cultivators. Those probated in Sussex County almost never did. In consequence, northern farmers obtained a decisive productive advantage. Again, assuming that aggregate demand remained the same in the face of the increased aggregate production, prices would again fall. But in this case, St. George farmer's per unit cost were further reduced relative to those in Sussex County.

The third possibility, which is also probably a true description of historical reality, is that cultivators when introduced into St. George's Hundred benefitted farmers proportionately more than they did farmers who purchased them in Sussex County. The density of plants per acre is a function of the nutrient and water carrying capacities of the soil. Given the relative inadequacy



of the soil on both counts in Sussex County, a farmer would probably either have had higher fertilizer costs than the St. George's farmer, or have been forced to carry fewer plants per acre. Moreover, if cultivators were not expensive, horses to pull them were. If a Sussex Countian purchased a horse to pull his cultivator, his "machinery" costs would be much larger relative to a unit of output than those of the St. George's farmer, who could amortize the cost of the horse across his total hay, corn, wheat, and oat production. Assuming that the Sussex Countian did not buy a horse but pulled the cultivator with oxen, his productivity increase would be less than that of the farmer in the North. In all cases, the small southern Delaware farmer lost out.

The historical form in which he lost out was probably that of income inadequacy. The increased production made possible by mechanization necessarily diminished the income of the smaller farmer. This could happen in one of several ways. If prices declined absolutely, the smaller farmer's lower profit margin would be eroded until finally it was insufficient to maintain him on the land. If, however, prices did not fall but remained constant, that is if demand kept pace with increases in supply, the per unit rate of profit would still fall for the small farmer because of his higher costs per unit. For the good land farmer that margin would either be constant or improve slightly, depending upon the specific relative costs of the technology.

There was apparently substantial incentive to introduce technological improvements into Delaware farming in the nineteenth century. In consequence, one or all of the above possibilities

probably played some role in determining the relative futures of the State's farmers. As we have noted the crucial structural consequence of any scenario was the tendency for the average rate of profit to decline, and for that decline to effect the southern farmer more than his northern counterpart. The short term response of southern farmers was to reduce all costs, both labor and capital, to the minimum of the family unit and to seek off-farm income. The northern farmer's response was very different. He increased his capital investment, in land, in technology, in fertilizer, and other improvements in a search for the most efficient mix of production factors. Within the contours of this improving agriculture, very different forces were playing themselves out in the very different ways in northern tier and large farm hundreds.

Four characteristics of the northern tier farms are most important to an understanding of their agricultural ecology in 1850 and the years afterward. First, the quality of land here was marginally less than that of the large farm hundreds. Second, the population density in these hundreds was relatively great, and the average farm size relatively small. Third, these farmers used less labor outside of the family than any other farmers in the state. Fourth, these farmers had the highest investment in machinery of any farmers in Delaware. Fifth, as a consequence of these four factors, northern tier farmers were concentrating in dairying.

The technologically intense cultivation of the region, coupled with the apparent absence of farm labor indicates that the machinery of 1850 allowed the farmer in the northern tier to eliminate off farm labor. We know nothing about the technical efficiency in

the period, but this fact indicates clearly that these farms were operating at or near that point. The agricultural innovations of the next half century were largely designed to increase efficiency by increasing scale of production. They could not, therefore, benefit the northern tier farmer, unless he could increase his scale of production. Given the high price of land in these hundreds, their increasing industrialization, and the always sluggish market in agricultural land, this was not a practicable alternative for the northern-tier farmer. His only option was to increase the intensity of his production. This is what he did. Increasingly these hundreds turned to dairying, the most capital intensive of all agricultural forms of production. But about 1870, the rural population of these hundreds began to decline, suggesting that the rate of profit was falling below the point at which a northern tier farm would support a family. Finally, the Depression ended farming here forever.

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The picture was rather otherwise in the large farm belt. Here, farmers used more labor per farm than in any other region. ① This high use of labor coupled with the region's high absolute use of machinery suggests that the technology of 1850 was inadequate to exploit fully the potential of the land and the scale of farms. To maximize income, therefore, farmers aggregated smaller units of production by hiring more labor and buying more machinery for these laborers to operate. In effect, these farms were composed of several technically efficient units of production. Again, this hypothesis foretells the subsequent history of the region. The large farm hundreds of northern Delaware remained productive farms until the Arab oil embargo in 1973 precipitated the latest phase of

America's agricultural revolution.

In these high labor inputs, too, no less than in the intensive technology of the northern-tier farmer, we can read finally the psychological concomittant of capitalist agriculture: namely the drive for income. Farmers in St. George's and other 2 large farm hundreds, used more labor relative to machinery than farmers in the northern tier, not because it made them more efficient, but rather because it allowed them to increase their income. As capital, this income would allow them to expand further in coming years. As money, it allowed them to begin a very different revolution in Delaware rural life--as they became the State's first rural middle class.

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Finally, in the data from 1850 we can read, if only faintly, the future of the central region. Farms here were relatively large. The land throughout most of the hundreds was relatively good. In the small commercial wheat production of the region, in the embryonic dairy industry, and in the use of hay for fodder, we see a scaled-down version of large farm agriculture. The principal short-term constraint on the development of that agriculture was the relative inaccessibility of the market. The railroad began to change this in the 1840's. But in 1850, we see still a regionalized pattern of diversified, family farm agriculture, oriented first to subsistence, but secondly, to a growing market. In the coming years, the pace of change would accelerate here. Although the productivity of these hundreds seems never to have equalled that of the large farm belt in the nineteenth century, such preliminary data as we have, suggest that the structural

characteristics of the two regions became increasingly similiar, and the agriculture of the central hundreds increasingly like that of the large farm belt as the century wore on.

So, to conclude at last, across the face of rural Delaware in 1850 was writ the story of capitalism in progress. Everywhere that story has been the same. It is a story of the replacement of one culture by another and a story of stubborn struggle of tradition in the face of change. Ultimately, however, it is the story of the failure of that struggle, and a story of the rise of capital intensive, big agriculture, on the one hand, and a story of the failure of farmers to survive on the land on the other.

## NOTES

The essay is largely based upon three sources: the Agricultural Schedule, a sample of probate inventories from 1845-1854, unpublished farm diaries. None of these sources are widely available, and because the paper is already overdue, I have not cited to them. Occasional observations come from reports of Delaware farmers to the United States patent office. Of these only one, the oblique reference to rotation grazing in Brandywine hundred is not merely illustrative of the census data. The final section of the essay simply assumes a kind of left leaning economic common sense. Information on soil types was taken from USGS maps and personal observation.

The calculations of acreages in crops deserve explanation. The 1850 census contains data only on yields. To convert these to acres, a multiplier was picked in the following way. USDA reports contain yields on all Delaware crops after 1862. The average yield was for each crop for the years 1862-1890 was calculated. This figure was used as a base. Weights for regions were developed from a sample of 250 farms for 1880, the first year in which the census recorded acreages. These weights were then used to adjust the average state yield for regional differences. The final figures assumed yields of 35 bushels for corn, and 16 for wheat in New Castle County, 22 and 13 respectively for Kent County and 15 and 9 for Sussex County.

The standard animal units were computed using estimates

generally made by farmers in the area in the present. They were: 1.5 for horses; 1.25 for milkcows; 1 for oxen; .75 for beef cattle; .2 for sheep; .1 for sheep. Until data can be developed that will take into account the relative nutrition needs of animals in the past, these weights seem as good an approximation as we are likely to have.

Table 1

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value of Farm

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
New Castle						
BRANDYWINE		100%	5028.1	3003.6	5894.2	64
CHRISTIANA		100%	6889.9	5986.0	6265.1	55
WHITE CLAY		100%	4796.9	3050.0	4398.8	32
MILL CREEK		100%	5751.2	5010.0	3476.6	64
NEW CASTLE		97%	10795.8	11000.0	4571.2	36
PENCADER		100%	4782.3	5700.0	5758.3	43
RED LION		83%	14113.9	10670.0	16174.7	18
ST.GEORGE		100%	11870.2	9956.3	9428.9	47
APPOQUIN.		98%	2829.6	2017.9	2068.2	<u>66</u> 425
County Totals						
Kent						
DUCK CREEK LITTLE CREEK		100%	3130.6	2200.0	2833.5	113
DOVER		98%	1806.4	1025.0	1796.0	86
MURDERKILL		98%	1917.6	1215.6	2049.8	103
MILFORD MISPELLION		99%	1480.6	1010.0	1134.7	<u>118</u> 412
County Totals						



Table 1

2.

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value of Farm

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
SUSSEX						
	CEDAR CREEK	96%	1228.7	996.2	1105.7	47
	NORTHWEST FORK	98%	1620.5	1206.4	1345.5	64
	NATICOKE	100%	1336.8	996.2	1003.9	52
	BROADKILN	72%	822.7	501.0	968.7	120
	LEWES & REHOBOTH	60%	945.0	275.0	1238.8	30
	INDIAN RIVER	100%	928.2	796.9	666.0	55
	BROAD CREEK	99%	976.7	798.1	964.0	102
	DAGSBOROUGH	100%	1029.4	794.4	1030.7	69
	BALTIMORE	100%	881.1	703.3	547.0	86
	LITTLE CREEK	100%	1299.4	999.4	1200.9	<u>97</u>
						722

County Totals

Table 1.1

S.

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value Per Acre

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
New Castle						
BRANDYWINE		100%	63.2	58.2	30.0	64
CHRISTIANA		100%	78.8	66.1	50.7	55
WHITE CLAY		100%	45.7	40.4	20.3	32
MILL CREEK		100%	57.9	57.3	19.7	64
NEW CASTLE		97%	69.2	66.8	27.8	36
PENCADER		100%	40.9	40.1	17.6	43
RED LION		83%	54.0	59.6	30.8	18
ST. GEORGE		100%	57.9	52.3	18.9	47
APPOQUIN.		98%	22.0	20.0	11.8	<u>66</u> 425
County Totals						
Kent						
DUCK CREEK LITTLE CREEK		100%	20.8	16.7	16.8	113
DOVER		98%	11.2	10.0	7.2	86
MURDERKILL		98%	11.8	8.3	9.5	103
MILFORD MISPILLION		100%	13.8	8.3	21.8	<u>118</u> 412
County Totals						

TABLE 1.1

6.

1950 United States Census  
Agricultural Schedules, DelawareVARIABLE Value Per Acre

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
SUSSEX						
CEDAR CREEK		96%	7.5	6.9	4.4	47
NORTHWEST FORK		100%	7.7	6.0	6.0	64
NATICOKE		100%	6.9	6.4	3.3	52
BROADKILN		71%	7.9	5.0	13.6	120
LEWES & REHOBOTH		60%	7.1	5.7	8.9	30
INDIAN RIVER		100%	5.9	5.8	2.0	55
BROAD CREEK		99%	7.8	6.7	5.8	102
DAGSBOROUGH		100%	7.6	5.6	12.1	69
BALTIMORE		100%	9.6	8.3	5.7	86
LITTLE CREEK		100%	9.0	7.7	5.6	97
						<u>722</u>

County Totals

TABLE: 2Wheat - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	98%	163	166	2.2	2.2	55
Brandywine	92%	104	113	2.1	2.2	64
Mill Creek	98%	139	141	1.7	1.7	64
White Clay	94%	118	126	2.0	2.2	32
St. George	91%	474	518	2.9	3.1	47
Red Lion	61%	213	290	1.0	1.6	18
New Castle	94%	302	311	2.2	2.4	36
Pencader	86%	265	308	2.1	2.4	43
Appoquinimink	52%	77	152	.7	1.3	66
Duck Creek	73%	85	115		.9	113
Dover	63%	47	74	.4	.7	86
Murderkill	86%	50	58	.5	.5	103
Millford	86%	42	49		.9	118
Northwest Fork	86%	42	49	.4	.5	64
Cedar Creek	64%	39	59	.3	.5	47
Nanticoke	48%	21	49	.2	.3	52
Indian River	51%	13	25	.1	.3	55
Little Creek	27%	6	22	.2	.6	97
Broad Creek	12%	2	17	.0	.2	102
Broadkill	32%	22	60	.3	1.0	120
Dagsborough	28%	5	20	.1	.3	69
Baltimore	21%	5	24	.1	.5	86
Lewes	37%	12	53	.1	.4	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 3

Buckwheat - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	*	*	*	*	.5	55
Brandywine	22%	5	24	.12	.5	64
Mill Creek	8%	2	24	.02	.2	64
White Clay	34%	4	13	.14	.4	32
St. George	*	*	*	*	.1	47
Red Lion	*	*	*	*	.1	18
New Castle	*	*		*	.1	36
Pencader	35%	5	14	.05	.2	43
Appoquinimink	21%	7	34	.04	.2	66
Duck Creek	20%	2	19	.02	.1	113
Dover	31%	3	9	.04	.1	86
Murderkill	18%	1	7	.01	.1	103
Milford	13%	1	6	.02	.08	118
Northwest Fork	6%	.5	7.3	.03	.04	64
Cedar Creek						
Nanticoke						
Indian River						
Little Creek						
Broad Creek						
Broadkill						
Dagsborough						
Baltimore						

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 4

Rye - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	*	*	*	*	*	55
Brandywine	0%	0	0	0	0	64
Mill Creek	*	*	*	*	*	64
White Clay	*	*	*	*	*	32
St. George	0%					47
Red Lion	0%					18
New Castle	0%					36
Pencader	0%					43
Appoquinimink	0%	0	0	0	0	66
Duck Creek	4%	4	15	*	.1	113
Dover	16%	7	45	.1	.6	86
Murderkill	8%	4	46	.02	.6	103
Milford	9%	1	14	.02	.2	118
Northwest Fork	11%	3	26	.02	.2	64
Cedar Creek	0%	0	0	0	0	47
Nanticoke	*	*	*	*	*	52
Indian River	*	*	*	*	*	55
Little Creek	*	*	*	*	*	97
Broad Creek	8%	2	31			102
Broadkill	*	*	*	*	*	120
Dagsborough	38%	NA	71	2.7	7.4	69
Baltimore	7%	1	12			86
Lewes	0%	0	0			30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 5

Indian Corn - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	100%	298	298	5.1	5.1	55
Brandywine	97%	173	178	3.4	3.5	64
Mill Creek	98%	408	414	5.0	5.1	64
White Clay	100%	438	438	6.7	6.7	32
St. George	100%	1388	1388	8.0	8.0	47
Red Lion	78%	1375	1767	6.9	7.4	18
New Castle	97%	941	968	6.9	7.1	36
Pencader	91%	840	840	7.1	7.1	43
Appoquinimink	97%	612	631	8.5	8.8	66
Duck Creek	99%	611	611	6.6	6.6	113
Dover	100%	475	475	5.8	5.8	86
Murderkill	99%	416	416	4.3	4.3	103
Milford	99%	457	457	7.8	7.8	118
Northwest Fork	98%	539	547	4.8	4.8	64
Cedar Creek	98%	405	414	3.7	3.8	47
Nanticoke	90%	436	482	4.5	4.9	52
Indian River	100%	420	420	5.8	5.8	55
Little Creek	90%	460	513	5.6	6.3	97
Broad Creek	85%	356	418	7.5	8.8	102
Broadkill	75%	357	476	6.2	8.3	120
Dagsborough	67%	342	513	6.0	8.5	69
Baltimore	99%	412	417	11.8	11.9	86
Lewes	63%	200		2.5	4.0	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 6

Oats - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	73%	179	246	2.3	3.2	55
Brandywine	59%	83	140	1.1		64
Mill Creek	92%	283	307	3.3	3.6	64
White Clay	94%	241	258	3.5		32
St. George	83%	652	785	3.5	4.3	47
Red Lion	67%	579	868	3.6	5.5	18
New Castle	78%	458	588	3.6	4.7	36
Pencader	91%	332	365	3.0	3.3	43
Appoquinimink	38%	96	252	.9	2.3	66
Duck Creek	39%	63	163	1.1	1.4	113
Dover	59%	63	106	.6	1.0	86
Murderkill	67%	64	95	.5	.8	103
Milford	65%	49	74	.6	.9	118
Northwest Fork	52%	45	88	.4	.7	64
Cedar Creek	0%	0	0	0	0	47
Nanticoke	*	*	*	*	*	52
Indian River	*	*	*	*	*	55
Little Creek	*	*	*	*	*	97
Broad Creek	*	*	*	*	*	102
Broadkill	*	*	*	*	*	120
Dagsborough	*	*	*	*	*	69
Baltimore	5%	4	89	.06	1.5	86
Lewes	10%	8	85		.5	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.



TABLE: 7

Hay - tons

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	96%	26	27	.33	.34	55
Brandywine	97%	20	21	.31	.33	64
Mill Creek	98%	22	22	.26	.27	64
White Clay	94%	12	13	.18	.19	32
St. George	51%	12	23	.07	.14	47
Red Lion	67%	24	35	.09	.14	18
New Castle	92%	24	27	.18	.20	36
Pencader	74%	8	11	.10	.10	43
Appoquinimink	26%	2	8	.10	.10	66
Duck Creek	50%	2	4	.03	.06	113
Dover	33%	3	7	.02	.06	86
Murderkill	33%	3	7	.02	.07	103
Milford	16%	2	13	.04	.23	118
Northwest Fork	*	*	4	*	.03	64
Cedar Creek	0%	0	0	0	0	47
Nanticoke	0%	0	0	0	0	52
Indian River	24%	2	8	.02	.08	55
Little Creek	0%	0	0	0	0	97
Broad Creek	0%	0	0	0	0	102
Broadkill	*	*	*	*	*	120
Dagsborough	6%	1	8	0	0	69
Baltimore	36%	3	8	0	0	86
Lewes	0%	0	0	0	0	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 8

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	<u>6</u>
Christiana	30	51	10	9	9	22
Brandywine	62	33	7	5	5	16
Mill Creek	88	54	9	13	15	18
White Clay	80	43	7	12	12	10
St. George	184	112	29	40	33	10
Red Lion	180	128	14	51	37	25
New Castle	140	190	18	27	23	20
Pencader	120	65	17	24	17	7
Appoquinimink	99	30	5	18	5	2
Duck Creek	105	44	6	31	3	0
Dover	90	34	4	24	3	2
Murderkill	118	31	4	21	3	2
Millford	80	31	3	23	2	0
Northwest Fork	133	44	5	23	2	0
Cedar Creek	112	32	5	26	2	0
Nanticoke	109	36	3	33	1	0
Indian River	82	32	2	30	1	
Little Creek	92	35	1	34	0	0
Broad Creek	64	29	2	28	0	0
Broadkill	51	36	3	29	0	0
Dagsborough	65	32	N/A	N/A	N/A	N/A
Baltimore	46	31	25	5	1	1

1. IMPROVED ACRES
2. ACRES TILLED
3. ACRES WHEAT
4. ACRES CORN
5. ACRES OATS
6. ACRES HAY

TABLE: 10

Machinery - dollar value

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	93%	202	218	2.7	2.9	55
Brandywine	95%	234	246	3.5	3.7	64
Mill Creek	100%	153	153	2.1	2.1	64
White Clay	97%	104	107	2.0		32
St. George	100%	266	266	1.3	1.4	47
Red Lion	78%	375	482	1.9	1.9	18
New Castle	100%	253	253	2.0	2.0	36
Pencader	98%	192	195	1.7	1.7	43
Appoquinimink	100%	91	91	1.2	1.2	66
Duck Creek	99%	81	82	.9	.9	113
Dover	99%	61	61	.8	.8	86
Murderkill	99%	56	57	.6	.6	103
Milford	98%	48	48	.9	.9	118
Northwest Fork	98%	46	46	.5	.5	64
Cedar Creek	98%	45	45	.5	.5	47
Nanticoke	100%	45	45	.5	.5	52
Indian River	100%	32	32	.4	.5	55
Little Creek	78%	33	42	.4	.5	97
Broad Creek	66%	22	34	.2	.6	102
Broadkill	60%	19	32	.5	.7	120
Dagsborough	100%	31	31	.7	.7	69
Baltimore	100%	33	33	1.0	1.0	86
Lewes	43%	12	29	.1	.4	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 11

Swine 11

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	95%	5	5	.09		55
Brandywine	94%	6	6	.11		64
Mill Creek	100%	5	5	.08		64
White Clay	94%	7	7	.11		32
St. George	98%	8	8	.04	.05	47
Red Lion	78%	10	13	.04		18
New Castle	98%	8	8	.05	.06	36
Pencader	97%	9	9			43
Appoquinimink	97%	6	6	.08	.09	66
Duck Creek	98%	9	9	.11	.12	113
Dover	99%	8	8	.12	.12	86
Murderkill	98%	9	9	.13	.13	103
Milford	98%	10	10	.17	.18	118
Northwest Fork	98%	12	12	.14	.14	64
Cedar Creek	94%	12	12	.12	.13	47
Nanticoke	98%	12	12	.13	.14	52
Indian River	100%	10	10	.15	.15	55
Little Creek	91%	10	11	.14	.16	97
Broad Creek	97%	8	8	.18	.18	102
Broadkill	96%	8	9	.18	.19	120
Dagsborough	94%	11	11	.22	.23	69
Baltimore	93%	10	11	.31	.33	86
Lewes	97%	5	6	.08	.08	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 12

Number of Other Cattle

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	78%	3.8	7.5	.08	.10	55
Brandywine	63%	5.8	6.1	.05	.07	64
Mill Creek	78%	6.3	8.1	.07	.09	64
White Clay	78%	7.1	9.0	.07	.09	32
St. George	79%	7.2	9.1	.05	.06	47
Red Lion	61%	7.2	11.8	.03	.05	18
New Castle	89%	8.9	10.0	.06	.07	36
Pencader	88%	6.2	7.2	.06	.07	43
Appoquinimink	73%	3.2	4.4	.05	.07	66
Duck Creek	85%	3.7	4.3	.05	.06	113
Dover	81%	4.4	5.4	.05	.06	86
Murderkill	81%	4.4	5.1	.04	.05	103
Milford	81%	3.5	4.4	.06	.07	118
Northwest Fork	84%	3.2	3.7	.03	.03	64
Cedar Creek	79%	5.8	7.2	.06	.07	47
Nanticoke	58%	1.7	2.9	.02	.03	52
Indian River	76%	2.4	3.2	.03	.04	55
Little Creek	74%	2.3	3.0	.03	.04	97
Broad Creek	70%	1.8	2.6	.04	.06	102
Broadkill	63%	2.3	3.6	.04	.06	120
Dagsborough	67%	2.5	3.8	NA	.11	69
Baltimore	74%	3.4	5.5	.08	.12	86
Lewes	80%	2.9	3.6	.05	.07	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 13

Milk cows

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	98%	4.5	4.6	.08	.08	55
Brandywine	98%	6.5	6.6	.11	.11	64
Mill Creek	100%	4.1	4.1	.06	.06	64
White Clay	98%	4.9	5.4	.08	.08	32
St. George	100%	7.1	7.1	.04	.05	47
Red Lion	89%	10.5	11.8	.04	.05	18
New Castle	100%	9.3	9.3	.07	.07	36
Pencader	100%	5.0	5.0	.06	.06	43
Appoquinimink	96%	3.2	3.3	.04	.05	66
Duck Creek	97%	3.5	3.6	.04	.05	113
Dover	93%	2.8	3.0	.04	.04	86
Murderkill	95%	2.7	2.9	.04	.04	103
Milford	95%	2.6	2.7	.05	.06	118
Northwest Fork	94%	2.4	2.6	.02	.02	64
Cedar Creek	92%	3.6	3.9	.02	.04	47
Nanticoke	87%	1.5	1.7	.02	.02	52
Indian River	95%	1.6	1.7	.03	.03	55
Little Creek	87%	1.7	1.9	.03	.03	97
Broad Creek	73%	1.2	1.6	.02	.03	102
Broadkill	84%	1.7	2.0	.03	.04	120
Dagsborough	81%	1.8	2.2	.05	.06	69
Baltimore	90%	2.1	2.3	.06	.07	86
Lewes					.02	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 14

Butter - pounds

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	93%	422	455	7.2	7.8	55
Brandywine	97%	630	651	10.4	10.7	64
Mill Creek	100%	393	393	6.0	6.0	64
White Clay	97%	363	375	7.2	7.4	32
St. George	96%	534	558	3.5	3.5	47
Red Lion	72%	1206	1669	3.0	4.2	18
New Castle	100%	351	351	3.8	3.8	36
Pencader	100%	909	909	7.2	7.4	43
Appoquinimink	92%	171	184	2.3	2.5	66
Duck Creek	97%	180	186	2.4	2.5	113
Dover	83%	62	75	.8	1.0	86
Murderkill	88%	62	71	.8	1.0	103
Milford	93%	73	78	1.8	1.9	118
Northwest Fork	78%	43	55	.5	.6	64
Cedar Creek	53%	56	106	.6	1.2	47
Nanticoke	50%	27	54	.3	.7	52
Indian River	91%	55	60	.7	.8	55
Little Creek	72%	30	40	.7	.9	97
Broad Creek	69%	22	32	.6	.6	102
Broadkill	13%	8	67	.2	1.4	120
Dagsborough	78%	52	66	1.0	1.3	69
Baltimore	90%	54	61	1.6	1.8	86
LEWES			128	.7	1.5	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: 15

Ratio of the Value of Livestock  
to the Farm Value

Christiana	.05
Brandywine	.11
Mill Creek	.11
White Clay	.11
St. George	.07
Red Lion	.06
New Castle	.08
Pencader	.08
Appoquinimink	.13
Duck Creek	
Dover	.19
Murderkill	.20
Milford	.18
Northwest Fork	.18
Cedar Creek	.33
Nanticoke	.28
Indian River	.22
Little Creek	.19
Broad Creek	.17
Broadkill	.18
Dagsborough	.19
Baltimore	.19
Lewes	.15

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SOURCE: Agricultural Schedule, Ms. Census, Delaware,  
1850.



TABLE: 16

Animal Units

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	16.7	.20	.26	22		55
Brandywine	15.5	.20	.26	14		64
Mill Creek	16.9	.18	.21	26		64
White Clay	18.2	.19	.25	29		32
St. George	26.3	.15	.17	64		47
Red Lion	33.3	.12	.14	46		18
New Castle	28.6	.19	.22	38		36
Pencader	20.7	.15	.20	48		43
Appoquinimink	12.3	.12	.18	58		66
Duck Creek	14.8	.13	.18	43		113
Dover	12.8	.09	.16	42		86
Murderkill	13.2	.10	.15	36		103
Milford	12.9	.13	.22	43		118
Northwest Fork	12.8	.08	.12	52		64
Cedar Creek	16.4	.11	.17	33		47
Nanticoke	9.3	.06	.10	54		52
Indian River	10.5	.09	.15	49		55
Little Creek	8.8	.08	.12	87		97
Broad Creek	6.5	.07	.13	15		102
Broadkill	9.2	.10	.18	49		120
Dagoborough	10.2	.09	.25	54		69
Baltimore	11.1	.13	.33	44		86
LEWES	9.5	.14		52		30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value of Stock

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
New Castle						
BRANDYWINE		98%	385.7	200.6	504.9	64
CHRISTIANA		100%	509.6	351.3	574.4	55
WHITE CLAY		100%	475.4	254.4	532.4	32
MILL CREEK		100%	514.2	425.5	322.4	64
NEW CASTLE		100%	674.2	570.2	307.3	36
PENCADER		100%	461.7	359.7	399.1	43
RED LION		94%	1159.7	700.0	1366.8	18
ST. GEORGE		100%	709.0	507.1	651.4	47
APPOQUIN.		99%	271.6	244.3	132.4	<u>66</u> 425

County Totals

Kent

DUCK CREEK LITTLE CREEK	97%	311.9	265.0	203.6	113
DOVER	99%	250.8	189.8	186.3	86
MURDERKILL	99%	258.8	200.1	206.9	103
MILFORD MISPILLION	99%	213.5	185.5	121.0	<u>118</u> 412

County Totals

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value of Stock

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
SUSSEX						
	CEDAR CREEK	98%	291.8	298.3	224.2	47
	NORTHWEST FORK	98%	222.7	175.0	174.5	64
	NATICOKE	90%	294.1	301.8	169.7	52
	BROADKILN	93%	154.5	126.0	142.9	120
	LEWES & REHOBOTH	73%	155.0	107.5	151.2	30
	INDIAN RIVER	100%	164.4	125.3	125.3	55
	BROAD CREEK	98%	119.5	80.3	119.4	102
	DAGSBOROUGH	100%	163.4	130.0	117.5	69
	BALTIMORE	99%	145.4	111.5	99.4	86
	LITTLE CREEK	96%	142.6	100.2	147.0	<u>97</u>
						722

County Totals

Table 17

1850 United States Census  
Agricultural Schedules, Delaware

83.

VARIABLE Value of Manufactured Goods

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
New Castle						
BRANDYWINE		0%				64
CHRISTIANA		0%				55
WHITE CLAY		0%				32
MILL CREEK		0%				64
NEW CASTLE		0%				36
PENCADER		0%				43
RED LION		6%	1.2	.6	5.0	18
ST. GEORGE		0%				47
APPOQUIN.		0%				<u>66</u>
						425
County Totals						
Kent						
DUCK CREEK						
LITTLE CREEK		20%	2.4	.1	6.5	113
DOVER		31%	3.8	.2	6.5	86
MURDERKILL		21%	3.8	.1	8.7	103
MILFORD						
MISPELLION		53%	8.5	5.5	9.8	<u>118</u>
						412
County Totals						

1850 United States Census  
Agricultural Schedules, Delaware

VARIABLE Value of Manufactured Goods

	<u>HUNDRED</u>	<u>FREQ (%)</u>	<u>MEAN</u>	<u>MEDIAN</u>	<u>S.DEV.</u>	<u>(N)</u>
SUSSEX						
	CEDAR CREEK	15%	6.2	.2	19.9	47
	NORTHWEST FORK	53%	8.8	4.8	12.6	64
	NATICOKE	19%	6.2	.6	14.5	52
	BROADKILN	24%	5.6	.2	13.8	120
	LEWES & REHOBOTH	3%	1.7	.9	9.3	30
	INDIAN RIVER	60%	11.4	11.9	11.2	55
	BROAD CREEK	50%	6.0	.5	9.7	102
	DAGSBOROUGH	70%	14.6	12.4	13.6	69
	BALTIMORE	83%	20.8	20.1	15.0	86
	LITTLE CREEK	63%	11.8	5.0	20.9	<u>97</u>
						722

County Totals

TABLE: 18

2 Power Units

<u>HUNDRED</u>	(1)	(2)	(3)	(4)
Christiana	9	7	1	1
Brandywine	20	20	0	0
Mill Creek	16	14	0	2
White Clay	9	9	0	0
St. George	3	3	0	0
Red Lion	1	1	0	0
New Castle	0	0	0	0
Pencader	3	3	0	0
Appoquinimink	17	16	0	1
Duck Creek	16	15	1	0
Dover	14	12	2	0
Murderkill	10	10	0	0
Millford	13	10	2	1
Northwest Fork	8	7	0	1
Cedar Creek	3	0	2	1
Nanticoke	5	1	4	0
Indian River	10	0	9	1
Little Creek	25	14	0	11
Broad Creek	28	0	9	19
Broadkill	15	3	12	0
Dagsborough	10	1	9	0
Baltimore	17	1	16	0
LEWIS	6	0	2	1
	<u>258</u>	<u>160</u>	<u>60</u>	<u>32*</u>

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Number of people in hundred having horses and/or oxen.
- (2). Number of people having 2 horses.
- (3). Number of people having 2 oxen.
- (4). Number of people having 1 horse and 1 ox.

TABLE: 19

3 Power Units

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	(6)
Christiana	9	2	7	0	0	0
Brandywine	10	10	0	0	0	0
Mill Creek	14	5	9	0	0	0
White Clay	4	4	0	0	0	0
St. George	3	3	0	0	0	0
Red Lion	1	1	0	0	0	0
New Castle	6	6	0	0	0	0
Pencader	3	3	0	0	0	0
Appoquinimink	10	9	1	0	0	0
Duck Creek	11	6	0	6	0	0
Dover	12	6	0	6	0	0
Murderkill	17	8	1	6	2	0
Milford	18	1	0	17	0	0
Northwest Fork	7	1	1	5	0	0
Cedar Creek	14	0	0	14	0	0
Nanticoke	19	1	2	14	1	1
Indian River	22	0	0	22	0	0
Little Creek	12	0	4	8	0	0
Broad Creek	13	0	1	12	0	0
Broadkill	26	1	0	24	1	0
Dagsborough	20	0	0	20	0	0
Baltimore	28	0	0	28	0	0
Lewes	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>0</u>
	283	67	40	172	4	1

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Number of people in hundred having horses, oxen, and/or mules.
- (2). Number of people having 3 horses.
- (3). Number of people having 2 horses and 1 ox.
- (4). Number of people having 1 horse and 2 oxen.
- (5). Number of people having 2 oxen and 1 mule.
- (6). Number of people having 3 oxen.

TABLE: 20

4 Power Units

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	(6)
Christiana	11	3	6	2	0	0
Brandywine	5	3	0	2	0	0
Mill Creek	9	4	5	0	0	0
White Clay	4	2	0	2	0	0
St. George	2	2	0	0	0	0
Red Lion	0	0	0	0	0	0
New Castle	5	4	0	1	0	0
Pencader	11	8	0	2	0	0
Appoquinimink	11	3	0	8	0	0
Duck Creek	15	5	0	9		
Dover	14	1	0	13	0	0
Murderkill	21	0	0	19	0	0
Milford	31	0	0	31	0	0
Northwest Fork	19	0	0	19	0	0
Cedar Creek	7	0	0	6	0	1
Nanticoke	8	0	0	8	0	0
Indian River	8	0	0	4	0	4
Little Creek	4	0	1	2	0	0
Broad Creek	3	1	1	1	1	0
Broadkill	22	1	0	12	1	8
Dagsborough	18	0	0	16	0	2
Baltimore	14	0	0	10	0	4
Lewes	3	0	0	2	0	1
	245	37	13	169	2	20

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

LEGEND: (1). Number of people in hundred having horses and/or oxen.

(2). Number of people having 4 horses.

(3). Number of people having 3 horses and 1 ox.

(4). Number of people having 2 horses and 2 oxen.

(5). Number of people having 1 horse and 3 oxen.

(6). Number of people having 4 oxen.



TABLE: 21

5 Power Units

HUNDRED	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Christiana	6	1	3	1	1	0	0
Brandywine	1	0	0	1	0	0	0
Mill Creek	11	3	5	2	0	0	0
White Clay	2	1	0	1	0	0	0
St. George	8	5	1	1	0	0	0
Red Lion	0	0	0	0	0	0	0
New Castle	3	1	0	2	0	0	0
Pencader	4	3	0	1	0	0	0
Appoquinimink	6	2	1	3	0	0	0
Duck Creek	18	1	0	15	2	0	0
Dover	11	0	0	8	1	1	0
Murderkill	12	0	0	10	2	0	0
Milford	21	2	0	16	2	1	0
Northwest Fork	8	0	0	1	0	7	0
Cedar Creek	6	0	0	6	0	0	0
Nanticoke	3	0	0	1	0	0	0
Indian River	2	0	0	1	0	1	0
Little Creek	1	1	0	0	0	0	0
Broad Creek	10	0	0	3	0	7	0
Broadkill	11	0	0	3	0	7	0
Dagsborough	6	0	0	4	0	2	0
Baltimore	6	0	0	2	1	1	0
Lewes	2	0	0	0	0	2	0
	158	20	10	82	9	29	0

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

LEGEND: (1). Number of people in hundred having horses and/or oxen.

(2). Number of people having 5 horses.

(3). Number of people having 4 horses and 1 ox. .

(4). Number of people having 3 horses and 2 oxen.

(5). Number of people having 2 horses and 3 oxen.

(6). Number of people having 1 horse and 4 oxen.

(7). Number of people having 5 oxen

## APPENDIX

### SELECTED VARIABLES NOT USED IN THIS ANALYSIS

TABLE: A-1

Irish Potatoes - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	96%	96	100			55
Brandywine	98%	68	68			64
Mill Creek	100%	62	62			64
White Clay	100%	44	44			32
St. George	92%	51	56			47
Red Lion	72%	71	98			18
New Castle	97%	140	143			36
Pencader	100%	59	59			43
Appoquinimink	83%	27	32			66
Duck Creek	90%	54	61			113
Dover	91%	32	35			86
Murderkill	89%	28	31			103
Milford	88%	16	19			118
Northwest Fork	88%	17	19			64
Cedar Creek	79%	19	17			47
Nanticoke	65%	11	16			52
Indian River	100%	26	27			55
Little Creek	84%	10	15			97
Broad Creek	78%	8	15			102
Broadkill	47%	12	25			120
Dagsborough	96%	20	21			69
Baltimore	98%	29	29			86
Lewes	67%	15	22			30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-2.

Sweet Potatoes - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	0%					55
Brandywine	0%					64
Mill Creek	11%	*				64
White Clay	9%	*				32
St. George	0%					47
Red Lion	0%					18
New Castle	19%	2	8			36
Pencader	30%	3				43
Appoquinimink	23%	3	15			66
Duck Creek	35%	6	16			113
Dover	65%	9	15			86
Murderkill	80%	17	21			103
Milford	66%	11	17			118
Northwest Fork	73%	13	17			64
Cedar Creek	53%	10	19			47
Nanticoke	42%	8	18			52
Indian River	96%	22	23			55
Little Creek	33%	11	13			97
Broad Creek	78%	12	15			102
Broadkill	33%	5	15			120
Dagsborough	93%	22	24			69
Baltimore	91%	23	25			86
Lewes	50%	8	16			30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-3

Grass Seed - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	6%	9	5			55
Brandywine	20%	1	2.7			64
Mill Creek	13%	1	5.7			64
White Clay	0%	0	0			32
St. George	15%	*	*			47
Red Lion	17%	*	*			18
New Castle	14%	0	0			36
Pencader	26%	1	5			43
Appoquinimink						
Duck Creek						
Dover						
Murderkill						
Milford						
Northwest Fork						
Cedar Creek						
Nanticoke						
Indian River						
Little Creek						
Broad Creek						
Broadkill						
Dagsborough						
Baltimore						
Lewes						

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-4

clover - bushels of seed

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	13%	.7	5.2			55
Brandywine	0%	0	0			64
Mill Creek	36%	3	9.1			64
White Clay	22%	2	2.3			32
St. George	15%	1	9.3			47
Red Lion	17%	1	6.7			18
New Castle	14%	2	13.4			36
Pencader	26%	2	8.2			43
Appoquinimink						
Duck Creek						
Dover						
Murderkill						
Milford						
Northwest Fork						
Cedar Creek						
Nanticoke						
Indian River						
Little Creek						
Broad Creek						
Broadkill						
Dagsborough						
Baltimore	1%	*	6.			86
Lewes						

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-5

Peas and Beans - bushels

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	0%	0	0			55
Brandywine	14%	1	5			64
Mill Creek	0%	0	0			64
White Clay	9%	1	3			32
St. George	0%	0	0			47
Red Lion	0%	0	0			18
New Castle	8%	1	5			36
Pencader	0%	0	0			43
Appoquinimink	17%	1	4			66
Duck Creek	24%	1	4			113
Dover	0%	0	0			86
Murderkill	6%	1	14			103
Milford	29%	1	2			118
Northwest Fork	48%	2	4			64
Cedar Creek	15%	1	6			47
Nanticoke	0%	0	0			52
Indian River	6%	*	4			55
Little Creek	41%	2	4			97
Broad Creek	17%	1	4			102
Broadkill	0%	0	0			120
Dagsborough	13%	*	3			69
Baltimore	15%	1	6			86
Lewes	7%	*	4			30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-6

Flax - pounds

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana						
Brandywine						
Mill Creek						
White Clay						
St. George						
Red Lion						
New Castle						
Pencader						
Appoquinimink						
Duck Creek	*	*	*	*	*	113
Dover	20%	2	34	NR	NR	86
Murderkill	*	*	26	NR	NR	103
Milford	9%	11	46	NR	NR	118
Northwest Fork	16%	1	7	NR	NR	64
Cedar Creek						
Nanticoke						
Indian River						
Little Creek						
Broad Creek						
Broadkill	*	*	*	*	*	120
Dagsborough	7%	3	41	NR	NR	69
Baltimore	*	*	*	*	*	86
Lewes						

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.



TABLE: A-7

Market Garden - dollar value

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	6%	6	102	NA	NA	55
Brandywine	19%	25	131	NA	NA	64
Mill Creek	0%	0	0	0	0	64
White Clay	*	*	*	*	*	32
St. George	0%	0	0	0	0	47
Red Lion	0%	0	0	0	0	18
New Castle	6%	4	*	*	*	36
Pencader	0%	0	0	0	0	43
Appoquinimink	0%	0	0	0	0	66
Duck Creek	0%	0	0	0	0	113
Dover	81%	5	6	NA	NA	86
Murderkill	74%	43	6	NA	NA	103
Milford	0%	0	0	0	0	118
Northwest Fork	*	*	*	*	*	64
Cedar Creek	0	0	0	0	0	47
Nanticoke	0	0	0	0	0	52
Indian River	0	0	0	0	0	55
Little Creek	0	0	0	0	0	97
Broad Creek	0	0	0	0	0	102
Broadkill	0	0	0	0	0	120
Dagsborough	0	0	0	0	0	69
Baltimore	0	0	0	0	0	86
Lewes	*	*	*	*	*	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

TABLE: A-8

Orchards - dollar value

<u>HUNDRED</u>	(1)	(2)	(3)	(4)	(5)	N
Christiana	36%	12	34	.2	.6	55
Brandywine	30%	16	55	.3	.2	64
Mill Creek	20%	3	17	.06	.3	64
White Clay	9%	4	45	.2	.8	32
St. George	17%	27	159	.1	.7	47
Red Lion	39%	157	403	.5	1.4	18
New Castle	36%	14	38	.1	.3	36
Pencader	28%	11	39	.6	.5	43
Appoquinimink	5%	1	31	.1	2.1	66
Duck Creek	15%	3	20	.1	.2	113
Dover	29%	4	13	.0	.2	86
Murderkill	13%	2	14	0	.2	103
Milford	34%	6	17	.2	.2	118
Northwest Fork	17%	3	20	0	.2	64
Cedar Creek	0%	0	0	0	0	47
Nanticoke	*	*	*	*	*	52
Indian River	*	*	*	*	*	55
Little Creek	35%	6	18	0	.2	97
Broad Creek	17%	2	13		.2	102
Broadkill	0%	0	0		0	120
Dagsborough	0%	0	0		0	69
Baltimore	0%	0	0		0	86
Lewis	27%	8	29		.1	30

SOURCE: Agricultural Schedule, Ms. Census, Delaware, 1850

## LEGEND:

- (1). Frequency of occurrence.
- (2). Mean units (e.g. bushels, dollars, animals) per farm.
- (3). Mean units per farm for only those farms with item.
- (4). Mean units per improved acre per farm.
- (5). Mean units per farm per improved acre for only those farms with item.

