BREADBASKET OF THE REVOLUTION

MARYLAND AGRICULTURE
1776-1976

"Breadbasket of the Revolution"

"When tillage begins, other arts follow. The farmers, therefore, are the founders of civilization"

Daniel Webster
Remarks on Agriculture, January 13, 1840

Maryland Agriculture 1776-1976

STATE OF MARYLAND
EXECUTIVE DEPARTMENT
ANNAPOLIS, MARYLAND 21404

MARVIN MANDEL
GOVERNOR

January, 1976

MESSAGE FROM GOVERNOR MARVIN MANDEL

As we celebrate the 200th anniversary of our Nation's independence, it is a privilege for me to serve as Governor of one of the 13 original states from which this great Nation grew.

The myriad contributions of Marylanders in the fight for liberty and the founding of our country have forged a heritage in which all of us can take just pride. In joining with the other 49 states in commemoration of our Bicentennial, it is especially appropriate that we recall the vital contribution of Maryland agriculture to the war effort of the 1776-1781 era. And it is equally fitting that we obtain a clearer perspective of the place of agriculture in the present day economic structure of our State.

Food is as vital to life in 1976 as it was in 1776. Indeed, today our Nation is being called upon to help feed a hungry world whose population is soaring. Yet, the problems of agriculture, unfortunately, are not always well comprehended and all too frequently do not command the attention they merit.

Through this publication, the Maryland Agriculture Week Committee, with the cooperation of the Maryland Bicentennial Commission, has made a noteworthy contribution to the development of a better understanding and appreciation of Maryland agriculture, which, having served America well these past 200 years, faces the future with optimism and determination.

Sincerely,

Governor

Maryland
Bicentennial Commission

January, 1976

The Maryland Bicentennial Commission, charged with the responsibility for planning, coordinating, encouraging, and participating in the commemoration of our nation's 200th anniversary, is especially gratified to have had the opportunity to cooperate with the Maryland Agriculture Week Committee to make possible the publishing of this booklet — BREADBASKET OF THE REVOLUTION — Maryland Agriculture 1776-1976, in conjunction with Maryland Agriculture Week, February 1-7, 1976.

Maryland's military, naval, and political participation in the American Revolution is reasonably well established in the public's mind. But what is not so widely known is the fact that Maryland cooperated in the war effort in a way that represented a truly crucial contribution, without which national independence probably could not have been achieved.

Maryland farmers not only joined the ranks of the Maryland Line — they also produced much of the food that kept Washington's forces in the field. Their ability to supply flour, meat, and other farm commodities, which our fledgling state government purchased and shipped to the Continental army on a continuing basis throughout that long, difficult period, was a deciding factor in bringing the War for Independence to a successful conclusion.

From the founding of Maryland, in 1634, to the present time, Agriculture has figured prominently in the growth and development of our state. It is, therefore, in keeping with the Spirit of 1976 that we give special recognition to our agrarian heritage and, at the same time, delineate Agriculture's important role in our modern economy.

Louise Gore
Chairman

YLAND
DEPARTMENT OF AGRICULTURE

Parole Plaza Office Building, Annapolis, Maryland 21401
Phone: 301 — 267-1161

January, 1976

The publication of "Breadbasket of the Revolution — Maryland Agriculture 1776-1976" represents another step forward in making this basic industry better understood.

It has been my observation, particularly during the past three years as Maryland's Secretary of Agriculture, that some of our industry's problems have been the result of a failure on our own part to communicate effectively with the public and with government leaders. We are slowly overcoming this handicap. The efforts of the Agriculture Week Committee on the local level, coupled with those of various farm-oriented organizations on the national plane, have done much to improve our position.

I congratulate the Agriculture Week Committee and all others involved working to create a proper atmosphere for a viable agriculture.

Young D. Hance
Secretary

Maryland Agriculture Week Committee

January, 1976

BREADBASKET OF THE REVOLUTION
MARYLAND AGRICULTURE 1776 — 1976

The Bicentennial of the American Revolution motivates the Maryland Agriculture Week Committee to present this overview of Maryland agriculture, which highlights both its historical role and the part it plays in helping fill America's basic needs, as well as those of other nations.

Because the survival of the 13 original colonies depended on the colonists' capacity to grow their own food, farming became a way of life for those early Americans. But an agrarian economy imposed by the policy of the British Crown, which forced the colonists to purchase their manufactured goods from England, proved unacceptable to our forebears.

The Maryland colony, though best known for its tobacco, grew an abundance of corn, wheat, vegetables and fruits and raised substantial numbers of livestock and poultry. By the mid-1700's, wheat was beginning to outpace tobacco as the chief export trade item. When the Revolution began, the Continental Congress was well aware of Maryland's ability to provide large quantities of food for the army. And from the earliest years of the war until the victory at Yorktown, the Continental Congress relied heavily on Maryland — so much so that some historians have dubbed our state "the Breadbasket of the Revolution."

Maryland's post-Revolution economy remained agrarian for well over a century, while industry and commerce developed and expanded. Baltimore became a major manufacturing, transportation and trade center, its growth spurred by the milling and export of grain and later by the import and manufacture of fertilizer. Today, Maryland's economy is highly diversified, with agriculture continuing as a prime component.

The Maryland Agriculture Week Committee hopes that this booklet and its program of exhibits in urban shopping centers will serve to enlighten our fellow Marylanders with respect to the many facets of agriculture, its role in our history and its continuing contribution to our health, welfare, progress and prosperity.

We gratefully acknowledge the cooperation and assistance received from the Maryland Bicentennial Commission and the Maryland Department of Agriculture in the preparation and publication of this booklet. We are also grateful to the University of Maryland and the agribusiness community at large, without whose cooperation and support Maryland Agriculture Week would not be possible.

Joseph Lochte
Chairman

Agriculture — America's biggest business.

As a University of Maryland publication states, "Agriculture, in the modern total concept, is America's biggest business and it's a significant sector of Maryland's economy. Agriculture is the basis for human survival . . . a prime contributor to human comfort . . . a recognized factor in human dignity." Space does not permit an enumeration of agriculture's multiple contributions to man and the environment. It should be said, however, that America has the most advanced system, based on free-enterprise, for the production and distribution of food and fiber that the world has ever known. Less than five percent of our labor force is actually engaged in farming to produce a plentiful supply of agricultural commodities to meet our own needs and those of other nations. Maryland agriculture is an integral part of that successful system.

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Agriculture is basic to all other human activities. While the farmers' role in the growing of crops and the husbandry of livestock and poultry seems obvious, less so is the part research and processing play in transforming agricultural commodities to a multitude of highly important and beneficial uses.

Corn, Maryland's largest field crop, is employed in making a long list of food and kindred products. Through processing it becomes hominy, grits, pop-corn, corn starch, cooking oil, margarine and syrup, to mention but a few. Dextran, the blood plasma volume expander, is one of hundreds of corn derivatives.

Livestock provide mankind with a great deal more than just delicious steaks, chops, hamburger, roasts, and ham. Many vital drugs are extracted from animals, such as insulin, ACTH, androgens, cortisone, thyroxin, adrenalin and others. And of course livestock is the source of essentials such as leather, wool, hair, glycerine, gelatin and fertilizer.

Scientific miracles have been wrought with soybeans. New uses have been found for milk by-products. And as agricultural research proceeds, we can expect a host of new discoveries.

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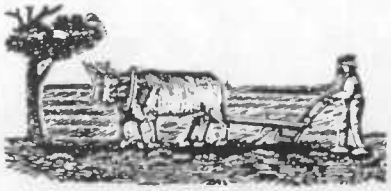

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Maryland Agriculture 1776-1976

The year after he established the first permanent British settlement in the New World, at Jamestown, Virginia, Captain John Smith went exploring up the Chesapeake Bay. The region he travelled, which was eventually to become Maryland, he described in his diary as a "*delightsome land*".

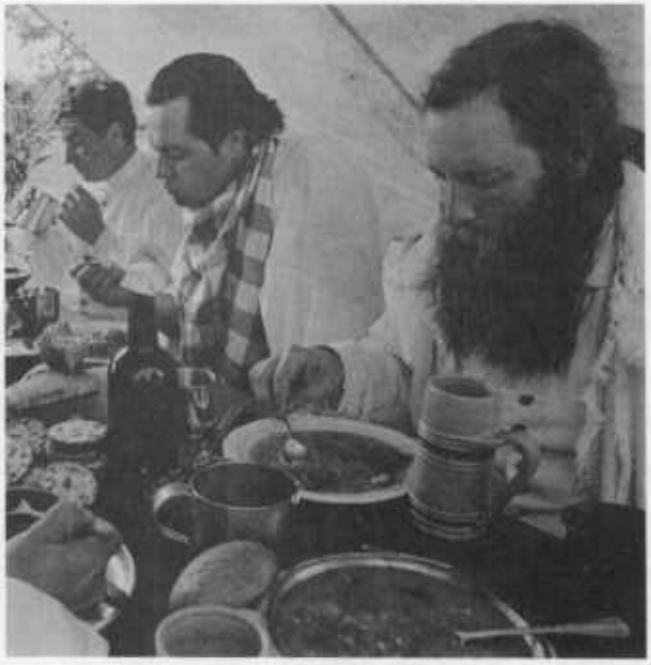
Some years later, Lord Baltimore's colonist settled (1634) at St. Marys City in Southern Maryland. It was out of the St. Marys City colony that grew the vast, productive Maryland tobacco plantation system, which was later to develop into a widely diverse agricultural economy, much of which survives today.

In the early 1700's, Germans (still erroneously referred to as "Dutch") settled the Piedmont Plateau of Central and Western Maryland. These frontiersmen farmed on a family basis, raising grains, vegetables and livestock. Their descendants currently continue the tradition, but with strong emphasis on dairy farming.

By the time of the American Revolution, Maryland agriculture had become rather well diversified. Though tobacco still represented the major cash crop, grains were beginning to make strong inroads, as an export trade in wheat, which was eventually to outpace tobacco, had begun to develop.

During the War for Independence, Maryland became one of the major, if not the chief supplier of food to the Continental Army. This led one historian to suggest that Maryland was the "Breadbasket of the Revolution". Indeed, the fact is that this little state maintained a continual flow of flour, meat, fish and other foods to Washington's forces, supplied large quantities to our French allies and also shipped grain to some of the other colonies and to Bermuda and the West Indies.

Following the Revolution and the War of 1812, Maryland agriculture experienced cycles of prosperity and recession. Grain production continued outpacing tobacco, but competition in international markets proved keen.



"The supplies granted by the State (Maryland) are so liberal that they remove any apprehension of want." George Washington (Yorktown, October, 1781)

Wheat crops suffered serious infestations of insects, particularly the Hessian fly, which proved costly to the export trade. In time, the soils of many Maryland farms became depleted of their nutrients, causing production to falter. Until the introduction of economical fertilizers, farmers could not readily remedy this condition. The first manufactured fertilizer, called "manipulated guano," was produced in Baltimore in 1849. But it was not until after the Civil War that agricultural research and technological developments reached a level that enabled farmers to more fully diversify their crops. But by then, the westward movement

Horse-drawn hay tedders, like the early 20th century model, have given way to sophisticated, motor-powered equipment.

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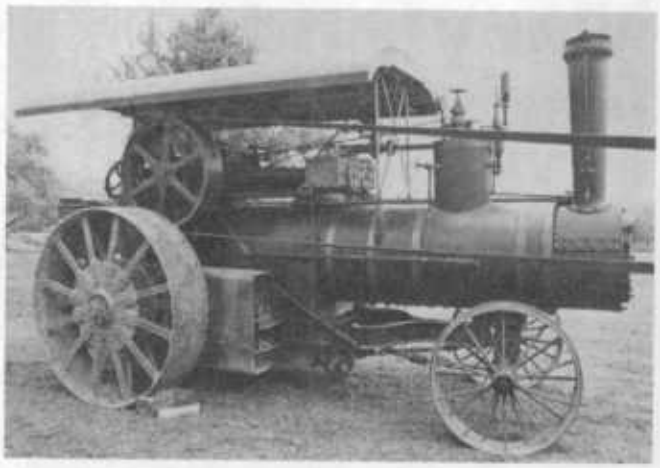
"As a work of art, I know few things more pleasing to the eye, or more capable of affording scope and gratification to a taste for the beautiful than a well-situated, well-cultivated farm" Edward Everett, Buffalo, New York, October 9, 1857

Production, (annual:) Tobacco, 3,020,955 lbs.; wool, 21,521 lbs.; peas and beans, 47,402 bushels; Potatoes, Irish, 47,647 bushel, sweet, 20,392 bushels; wine, 1,205 gallons; butter, 142,-632 lbs.; cheese, 200 lbs.; milk sold, 4,465 gallons; hay, 2,207 tons; wheat, 126,451 bushels; rye, 8,767 bushels; corn, 560,359 bushels; oats, 65,888 bushels.

Total number of farms, 1,228, of which 9 are under 3 acres; 30 between 3 and 10 acres; 49 between 10 and 20 acres; 177 between 20 and 50 acres; 319 between 50 and 100 acres; 637 between 100 and 500 acres; 7 between 500 and 1,000 acres.

Acres of land improved, 140,936; woodland, 67,423; unimproved, 8,600. Cash value of farms, $6,369,913; of farming implements and machinery, $204,962; amount of wages paid annually, including value of board, $526,928; value of farm productions, (annual,) $1,837,407; orchard products, $63,084; produce of market gardens, $434,505; forest products, $16,013; value of home manufactures, $4,882; animals for slaughter, $120,541; value of all live stock, $799,384; which includes in number the following animals: horses, 4,075; mules, 660; cows, 2,926; oxen, 1,733; other cattle, 2,269; sheep, 5,345; swine, 11,680.

An 1878 Atlas of Anne Arundel County, recently published by the Greater Glen Burnie Jaycees, provided the following agricultural statistics for a county that then held a population of 24,457:



Antiquated steam-driven farm machinery from the 19th and early 20th centuries no longer serve Maryland farmers. But many examples, like this one, have been preserved and kept in fine running order for display at county fairs and other agricultural events.

of agriculture had reduced the importance of Maryland as a breadbasket of the nation.

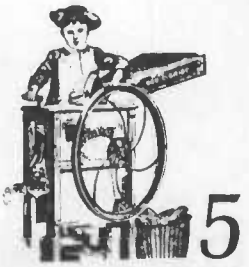
Agriculture remained the dominant economic activity until 1900, when, for the first time in the state's long history, more people were engaged in manufacturing than in agriculture. And by 1910, the federal census indicated that 51 percent of the population lived in cities.

It was during the early years of the present century that the Eastern Shore developed into an important center of vegetable production and the dairy industry took hold in Central Maryland. Meanwhile, Southern Maryland retained its place as a tobacco producer.

Now, as America enters upon its third century of progress and growth, Maryland agriculture continues to occupy a position of prime importance in the state's economy, though the farmers have dwindled to less than a fraction of their former number, with only about 33,000 persons employed in farm jobs.

But a glance at recent crop reports, prepared for the Maryland Department of Agriculture and the United States Department of Agriculture by the USDA Maryland-Delaware Crop Reporting Service, would show that the state continued diversifying its agriculture.

Today, corn, soybeans, wheat, tomatoes, green vegetables, apples, strawberries and other fruits, as well as the traditional tobacco are represented among the state's principal crops. The raising of livestock, especially dairy herds and, to a somewhat lesser degree, beef cattle and swine, is of major importance. The breeding and training of thoroughbred horses represents a prosperous and growing sector of the agricultural economy. So do the production of nursery stock, turf, sod and the commercial growing of Christmas trees. But in terms of cash sales, the vertically integrated poultry industry (producers and processors of top quality broilers), concentrated on the Eastern Shore, far outpaces other agricultural enterprises, with dairy farming, a close rival, in second place.



Who needs Maryland Agriculture?

Here in the highly industrialized East, within the little state that virtually surrounds the nation's nerve center, Washington, D.C., the casual observer is likely to raise the question, "Who needs Maryland agriculture when we've got the vast Mid-West, the South and Southwest, along with California, Hawaii and Florida?"

Indeed, most visitors to Maryland are astounded to observe such strong dedication to agriculture in an area that is best known worldwide for its industry and foreign trade activities. Maryland is, quite naturally, thought of in relation to its principal city, Baltimore, one of the world's busiest seaports, the site of the world's largest rolling mill, Bethlehem Steel and great ship building facilities, such as Maryland's Drydock, as well as prominent manufacturers, including Black and Decker and Western Electric.

But the great Port of Baltimore, it is well to recall, had its origins as a grain exporting center and as an importer of organic fertilizer (guano). And as America matured, Maryland, which, like the other 12 original states had an agrarian economy, found itself becoming a center for manufacturing and maritime and rail transportation. Nevertheless, much of the state's rural character has survived, even though some of the larger towns which once were agricultural centers, have become the base for important industrial operations, for example, Hagerstown, with the Mack Truck plant and Frederick, with the nearby Eastalco Aluminum plant.

Historic towns and villages dot the Maryland countryside.

One of the pleasantly refreshing and memorably impressive aspects of Maryland is the continuing presence of so many small towns and villages that developed within rich agricultural regions to serve the farming population. Somehow, in this era of bustling industrialization and busy commercialization, these places, bearing names such as Easton, Chestertown, Westminster and Grantsville, have managed to retain much of their early American characteristics of simplicity, charm and quietude. This has been possible because a great deal of Maryland is still involved in agriculture, which, as this booklet will endeavour to demonstrate, is highly productive and immensely valuable to the people of Maryland and the country as a whole.

CORN CARGO: The Spanish vessel, Castillo Manzanares loading 1,600,000 bushels of corn at Central Soya's Canton elevator in the Port of Baltimore. The relatively shallow depth of the harbor prevents many ships, like this one from taking on a full load of grain, a fact which underscores the urgent need for deepening the waterway.

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The Economic Impact of Maryland Agriculture

About 50 percent of Maryland's 6.3 million land surface acres are currently in the hands of farmers. There are about 17,500 farms throughout the state, providing jobs for some 32,000 people.*

Because of modern production methods, fewer hands are required to produce food and fibers than ever in the past. Maryland's record of farm efficiency parallels that of the rest of the United States, wherein productivity has increased 300 percent in the past 20 years — just about double the non-farm sector of the economy. Output per man-hour in manufacturing is only 1.8 times greater than it was in 1956.

Maryland's agricultural complex may be broken down into three categories:

1. Farm production and harvesting.
2. Food and fiber processing and manufacturing.
3. Transportation and marketing.

In addition to the farms, the agricultural industry includes business firms employing nearly 200,000 workers, or 14 percent of the state's work force. These business enterprises represent a total combined investment of about $5.2 billion and generate economic activity valued at $2.3 billion annually — 14.2 percent of the Gross State Product.

It has been predicted that in 1976 the percentage of the several functions of agriculture will remain at about the same level, but the cash flow will have increased by nearly $1 billion.

The Maryland-Delaware Crop Reporting Service summary, Cash Receipts from Farming for 1974, showed that farmers received $622,942,000 from the sale of their products. And this figure does not include the value of crops retained on the farm for feed stuff.

The foregoing would seem to make it abundantly clear that 20th century Maryland agriculture is hardly an anachronism, but a viable and valuable economic function that merits the attention and consideration of government officials, legislators and everyday citizens. Indeed, the importance of agriculture to this state was firmly underscored in 1972, when the General Assembly, upon the recommendation of the Governor based on a citizen's Task Force report, created the Maryland Department of Agriculture to assist the farmer and food and fiber processor, to protect the consumer and, in general, to promote and enhance the state's agricultural business.

CASH RECEIPTS FROM MARYLAND FARMING, BY COMMODITIES, 1974

(THOUSAND DOLLARS)

Commodity	1974(2)	1974
All Crops	**253,137**	**40.6**
Corn	85,844	13.3
Soybeans	54,880	8.8
Tobacco	28,556	4.6
Wheat	16,571	2.7
Apples	5,642	0.9
Tomatoes	5,441	0.9
Barley	3,718	0.6
Snap Beans	3,357	0.5
Cucumbers	3,287	0.5
Hay	2,879	0.5
Sweet Corn	2,813	0.5
Peaches	2,170	0.3
Sweet potatoes	1,964	0.3
Watermelons	1,790	0.3
Potatoes	1,466	0.3
Green Peas	1,453	0.2
Asparagus	1,441	0.2
Mushrooms	890	0.1
Spinach	765	0.1
Lima Beans	634	0.1
Cantaloupes	601	—
Strawberries	477	0.1
Other Vegetables (3)	3,290	0.5
Other Field Crops (4)	1,395	0.2
Other Fruits (5)	376	—
Total Field Crops (6)	198,163	31.8
Total Vegetables and Melons (7)	24,872	4.0
Total Fruit (8)	8,665	1.4
Forest Products (9)	5,363	0.8
Greenhouse and Nursery	16,074	2.6
Livestock and Livestock Products	**368,782**	**59.2**
Broilers	166,583	26.8
Dairy Products	130,816	21.0
Cattle and Calves	29,265	4.7
Hogs	19,189	3.1
Eggs	18,746	3.0
Farm Chickens	616	0.1
Sheep and Lambs	292	—
Turkeys	196	—
Honey	186	—
Wool	54	—
Other (10)	2,839	0.5
All Commodities	**621,919**	**99.8**
Government Payments	**1,023**	**0.2**
Total Receipts	**622,942**	**100.0**

FOOTNOTES: (2) Preliminary. (3) Beets, broccoli, Cabbage, kale, peppers and others. (4) Rye, oats, lespedeza seed, red clover seed and miscellaneous crops. (5) Miscellaneous fruits, berries and nuts. (6) Includes potatoes, sweet potatoes and mushrooms. (7) Excludes potatoes and sweet potatoes. (8) Includes strawberries. (9) Includes maple sugar and sirup. (10) Miscellaneous livestock and poultry, and livestock and poultry products, beeswax and horses and mules. Note that data for 1975 will be available from the Maryland Delaware Crop Reporting Service in August, 1976.

*An Agriculture census was taken in 1974 but the data are not yet available.

A Profile Of Maryland Agriculture

What is Maryland agriculture and how does it survive in a sprawling megalopolis?

Most non-farm people would be hard pressed to give the answer. By tradition, Maryland agriculture has been tobacco culture — the growing of vast quantities of a non-edible plant which, although hardly essential to mankind's well being, has brought comfort, pleasure, employment and income to so many for over 300 years.

Though traditions die hard, even just a brief look at agricultural statistics would show that tobacco, while still a major cash crop, no longer retains leadership in Maryland agriculture. Surpisingly, in fact, it has not been the prime farm commodity since the latter half of the 18th century.

The growing of wheat, rye and other grains began to take precedent over tobacco shortly after the Revolution, though marketing conditions then made grains a precarious crop. But, as one historian puts it, "Wheat growing gave livings to far more folk than was the case with tobacco."

On a national scale, only Maryland poultry and tobacco growers now rank among the country's top volume producers. In poultry (broilers) production, the state takes sixth place: it is eighth in the nation in tobacco. But considering the smallness of Maryland (it ranks 42nd among the 50 states) as compared with some of the large agricultural states, its capability of producing a high volume of various farm commodities is impressive. In this context the state's agricultural capacity cannot be discounted.

Inspecting a field of soy beans.

This view of a dairy farm operation underscores the fact that farming requires a large investment in heavy equipment, buildings and other structures.

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Agricultural Maryland

Maryland is divided into four natural regions: the Eastern Shore and Southern Maryland, representing the Coastal Plain; Central Maryland embracing the Piedmont Plateau; and Western Maryland, comprising the Allegheny mountain area.

Much of the Eastern Shore and Southern Maryland are at sea level, with a slope of less than 3 percent. On the upper Shore and in the Piedmont Plateau the land rises. Slopes there range from three to nine feet per 100 feet. In Western Maryland, the Alleghenies reach as high as 3,360 feet above sea level.

The nature of the land greatly influences farming. Hill country usually suffers from soil erosion — the loss of fertile top soil due to run off as the result of rains, or to winds which blow loose soil away. In Maryland, soil erosion is experienced mostly in the rich Piedmont area and in parts of Southern Maryland.

The soils of each of Maryland's 23 counties have been mapped. Some 300 different soil types have been identified, varying from beach sand to highly productive types, such as manor and chester. Maps reveal that on the Eastern Shore (9 counties) the soils are generally light loams or sandy loams, excellent for raising vegetables. The upper half of the Shore presents heavier soils that have long been productive for wheat, corn and hay. The Bay's western littoral, known as Southern Maryland, has soils similar to the lower half of the Eastern Shore. Here good yields of tobacco, wheat and alfalfa are produced.

Many of Central Maryland's soils are of limestone origin. While the reddish earth there yields good crops of corn and grains, they are affected by adverse seasons. The grey soils are excellent producers but require more tilling to retain fertility. Further along, in Western Maryland, the mountainous region, the most productive agricultural soils are found in the valleys. Hillside soils are thin, but in many places are quite suitable for the apple and peach orchards, which produce excellent crops, and for which this area of the state is well known.

Soil types constitute the main guide to the products a farmer can hope to raise successfully on his farm. Plant growth is dependent upon the available plant nutrients in the soil, the quantity of rainfall and water held in the soil and the amount of sunshine to which the plants are exposed. Hence, the productivity of a farm depends largely upon its location. The fact that the Eastern Shore is ideal for growing corn and soybeans has been a major factor in the success of its poultry industry, which utilizes these crops as feed stuff.

Eighty percent of Maryland's nearly 2 million acres of cropland is located on soils that rank in the top three capability classes. Thus, Maryland agriculture is concentrated in areas with the better, more productive soils. Unfortunately those soils which are best for agriculture are well suited for other uses. So, competition for this land exerts great pressure on agriculture.

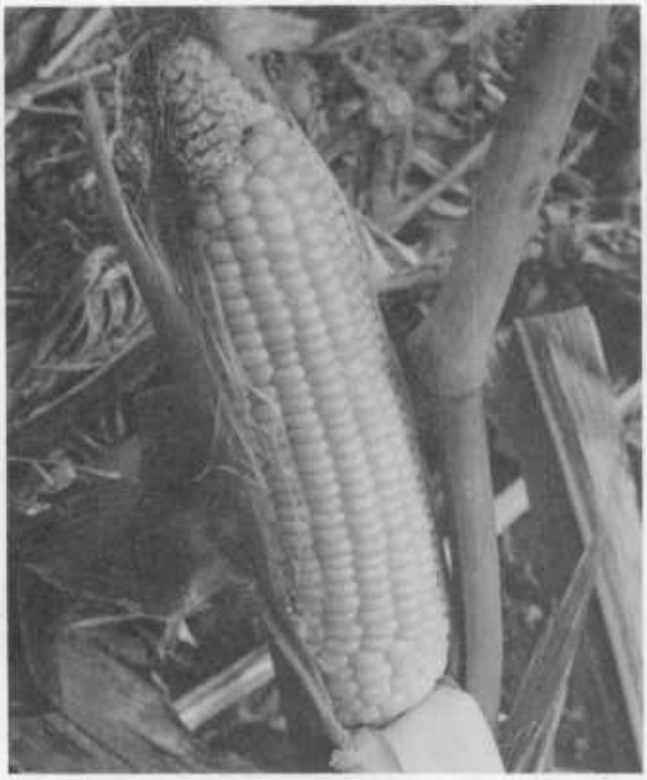
The success of agriculture directly relates to climate which, of course, varies with geography. Here in Maryland a salubrious climate with seasonal variations prevails. In the eastern portion of the state, winters are generally mild and summers are warm to hot. The growing season there is thus longer than elsewhere in the state. In the western sector, particularly in the Allegheny region, winters are much colder, while the generally cool summers are pleasantly comfortable.

Maryland's agricultural mix is the result of several factors — types of soil, elevation of land, rainfall, and the growing season, coupled with various marketing situations.

A look at what crops modern farmers grow and what livestock they raise in this state will serve to underscore the importance of agriculture to Maryland.

Corn — Maryland's biggest field crop.

Today, Maryland's leading field crop is corn, the cultivation and uses of which the first settlers learned from the Indians. In terms of corn production, obviously this little state is hardly a competitor of Iowa or Nebraska. But it



Corn, planted since Colonial times in Maryland is the foundation crop of the livestock industry. While man has improved the varieties of corn, learned how to hold back bugs and weeds, corn is still at the mercy of the weather as it was 200 years ago.

does produce a substantial quantity, most of which goes for feedstuff. Corn fills a primary need in poultry and dairy cattle feeding. It is also fed to swine and horses. And it should be noted that the quality of corn raised for animal feed differs substantially from sweet corn grown for human consumption, which for statistical purposes, is considered a separate crop.

In 1975, 47,950,000 bushels (56 lbs. per bushel) of shelled field corn were produced on about 550,000 acres. Yields averaged 87 bushels per acre. Production reached an all-time high, being about 6 percent greater than in 1974, a previous record year.

Why do Maryland farms produce so much corn? The answer is twofold. Some is raised for on-farm purposes, being fed to livestock. It is also grown for sale to feed mills, which supply the poultry and dairy industries, the two leading agricultural enterprises in Maryland.

Agricultural research, both in the laboratory and on the farm, has produced harvests that our forebears would have regarded as miraculous. This scene is at the Wye Institute's experimental farm, Queen Anne's County.

Soybeans — the 20th century wonder crop.

The once lowly soybean, which has recently emerged as a major agricultural product in the United States, has long been cultivated in the Far East, where it is highly valued as a food. Only in the past thirty years has this plant come into prominence in Maryland. It has now gained the No. 2 position among all of our field crops. Production is primarily centered on the Eastern Shore, where the poultry industry represents the end user. However, significant quantities are grown in Carroll, Frederick and Washington Counties. The importance of soybeans on the Shore has paralleled the growth of the broiler business there — now Maryland's leading agricultural business.

The versatile soybean has a multitude of applications. It is valued for its edible oil. The processed meal is highly adaptable as a food extender because of its ability to blend with other foods, such as ground beef. It is useful as a "green manure." But, in so far as Maryland agriculture is concerned, its value is measured in terms of its high protein content, which is why it is utilized in feedstuff.

Most of the state's production (8.1 million bushels in 1975), is in the main utilized by poultry, dairy products and livestock producers. In 1974, the sale of soybeans brought Maryland farmers about $55 million. But a large portion of the crop never entered trade channels, being retained for use directly on the farm.

10

What ever happened to Maryland wheat?

As has been previously indicated, in the 18th and 19th centuries, wheat commanded the leadership position in Maryland agriculture, having replaced tobacco as our most important farm product.

Today, wheat no longer plays the dominant role it once did here, where at one time, the tax levy was valued in bushels of that grain. Production reached its zenith in 1900, with a record harvest of 16.6 million bushels. Since then, wheat production has waned. One reason was that Maryland simply could not compete with the large states in the Wheat Belt.

Nevertheless, the basic grain is still produced here, though there is far less acreage planted now than in the 19th century and production has, until recently, been on a steady decline since the end of World War I. Modern farming methods have, however, enabled present day growers to reap an average of about 36 bushels per acre as contrasted with some 20 bushels per acre in the past. Increased yields have been largely due to the use of improved chemical fertilizers, insecticides, herbicides and new seed varieties.

At one time during the Revolution, the Maryland wheat crop suffered from an infestation of the destructive Hessian fly. While insects may represent less of a problem today than they once did, in recent years unusually adverse weather conditions, such as hail storms and torrential rains, have taken a heavy toll.

But in spite of such calamitous occurrences, the 1975 harvest from 156,000 acres was estimated at 5.6 million bushels — up 40,000 bushels over the 1974 crop. This increase can be attributed to several factors. Relieved from restrictive government controls on production and encouraged by USDA to produce more grain for export, Maryland farmers, like their counterparts elsewhere in the U.S., responded enthusiastically, even to the extent of putting fallow land back into production. With the world demand for more food exhausting the U.S. grain surplus, it once again became profitable to grow wheat.

Present market conditions, however, coupled with the effects of inflation have created problems.

Modern farming methods have eliminated rustic scenes like this one.

Fallow acres brought back into wheat production have required the application of a costly herbicide to control pesky wild garlic. When present in grain, garlic seeds lower the cash value of the commodity, a condition many farmers have faced. But even more costly has been the unilateral action of some groups in blocking grain shipments to the communist nations, a move supported by the action of the federal government to embargo foreign sales. This has unfairly affected farmers, who had labored hard and in good faith to produce a bumper crop.

Maryland tobacco — an export and domestic trade commodity.

Tobacco was grown in Maryland long before the arrival of the first English settlers. Learning from the aborigines how to raise, cure and use it, the colonists quickly became adept at tobacco farming and the produce soon became the principal item of trade, accounting

largely for the colony's growth and prosperity, at least during the first 100 years.

Tobacco dominated the economy of the tidewater Maryland region. The name Oronoko, said to be derived from a type of tobacco cultivated by the Spaniards around the Orinoco River in Venezuela, was given to the species grown in Maryland. Oronoke seeds were introduced here in the early 17th century. By the latter part of that century, so much was being grown that the Maryland General Assembly took measures to require all planters to raise at least two acres of corn. And at one time, tobacco growing was banned as a means of cutting production to deflate the market. The effort did not succeed.

As in neighboring Virginia, most of Maryland's tidewater region was planted in tobacco. But the Oronoke cultivated here differed markedly from the sweet-scented Virginia leaf. Gradually, however, over the years other crops took precedent until today, when only the five counties of Southern Maryland (Anne Arundel, Charles, Calvert, Prince Georges and St. Mary's) continue producing it.

The production of quality tobacco dates from the late 1740's when growers demanded an inspection law to rid the market of "trash" or poor quality leaf. Public warehouses were erected and county-elected officials inspected and graded the product. An 18th century economist writing about the "sot weed," as tobacco was called, said:

> *The tobacco of Maryland called Oronoko being stronger than that of Virginia is not said to be so generally agreeable to the British taste as the sweet scented tobacco of the latter colony: but the Northern nations of Europe are said to like it better: and they [Maryland] are thought to raise about as much tobacco and employ as many ships as Virginia does.*

Just prior to 1776 Virginia and Maryland were producing over 100 million pounds annually, with a value of about $54 million. But with the outbreak of the Revolution, only a small fraction of that amount was exported. In fact, most of the tobacco shipped during wartime was captured by the British. Thomas Jefferson estimated that two out of three American cargos were thus lost. The war and poor trade caused a tremendous slowdown of tobacco cultivation in Maryland. Later, land reforms broke up most of the large plantations. Although the tobacco trade did revive in the post-war years, by then the Eastern Shore had stopped growing it.

Producing Maryland tobacco today.

Except for the introduction of modern agricultural chemicals and some mechanization, the methods of planting, harvesting and curing have remained very much hand-labor operations, just as they were two centuries ago. But today's plant represents a highly improved variety that has come to be esteemed for its mild flavor and even-burning quality and is widely used in cigarette blends. It is known in the trade as Maryland Type-32.

About 40 percent of Maryland's tobacco crop is sold abroad in its traditional markets. It is especially prized in Switzerland, where it forms a large portion of the mixtures of tobaccos used in cigarette manufacturing. Shipments are also made to Belgium-Luxembourg, West Germany and other countries. In 1974, Maryland's Type-32 accounted for $13.7 million of the $1.2 billion U.S. tobacco export trade. Nearly 11 million pounds of the Maryland leaf were shipped.

While the production of Maryland tobacco has

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Loose leaf Tobacco Auction.

remained little changed over two centuries, the sale procedure has undergone a fairly recent restructuring. In 1939, a University of Maryland student, Crosby Wyche, introduced the loose-leaf market auction system. Prior to that time, tobacco had been packed in hogsheads on the farms and consigned to state warehouses. State officials pulled samples for prospective buyers to examine and then repacked the hogsheads for a fee.

The loose-leaf auction system permits growers to bring in the crop in open trays or baskets to auction warehouses. Buyers can see the entire crop and make fast decisions. This system enables a farmer to dispose of his production at one sale, or to sell off portions, over a period of weeks, whichever is to his best advantage. Today, virtually all of the Maryland crop is sold at loose-leaf auctions in Wayson Corner, Upper Marlboro, Waldorf and Hughesville. They operate between April and June.

In 1975, Southern Maryland growers produced 24.7 million pounds of tobacco. This was the smallest crop since 1945. The 1974 crop, came to market in the spring of the current year. Prices offered by the buyers were disappointing, as they failed to keep pace with rising cost of production.

It is generally conceded that Southern Maryland farmers have limited opportunity to diversify their crops. Farm land holdings are relatively small so that switching from tobacco to grain, for instance, would usually not be feasible. It is, therefore, anticipated that the region of the state will, for some time to come, continue with the traditional tobacco.

Maryland's quality vegetables and melons.

As recently as the 1930's, the growing of vegetables and melons counted among the most productive agricultural activities in the state, with producers centered largely on the Eastern Shore. Today, this is still a significant sector of Maryland's agriculture mix, but to a far lesser degree than in the past, due to factors such as the high cost and scarcity of labor and movement, in recent years, of canneries to the West Coast.

Processors of well known, nationally distributed brands, buy Maryland vegetables. So do a number of lesser known brand producers. Vegetable farmers here usually contract in advance with the canners for the purchase of their production. For instance, 14,400 acres of sweet corn (about 3.0 percent of the total U.S. acreage) were planted in 1975 on a contract basis. The yield was anticipated at 53,300 tons, or 2.5 percent of U.S. production.

Just a few decades ago, tomatoes were produced in vast quantities in Harford County and on the Eastern Shore, where most of the crop was canned. In 1951, 228,800 tons for processing were harvested from 30,500 acres. By 1975, the latter figure had dropped to 3,900 acres, with a yield of 44,500 tons. But this year's production did represent a 5.0 percent increase over 1974.

Several new varieties of tomatoes have been developed in recent years which are especially adaptable to mechanical harvesting, a method obviating the need for expensive hand labor, which may make tomato production viable here once again.

Truck farmers continue to raise tomatoes for

ABOVE: Melon settings must be carefully planted and protected from weeds until they are well established. They will then mature into the typically delicious cantaloupes for which Maryland had been renowned.

BELOW: Modern agriculture involves costly, time-consuming attention to such procedures as weed control. Here a farm worker is applying a herbicide to eliminate Johnson grass in a field of tomatoes.

fresh market throughout various sections of the state. Much of this crop is sold at roadside stands or directly at the farms on a pick-your-own basis, which is becoming increasingly popular.

Vegetables produced in significant quantities for commercial processing including lima beans, peas, spinach, cucumbers (for pickles), asparagus, snap beans and mushrooms. The most recent USDA Crop Reporting Service data show that vegetables and melons (excluding all potatoes) brought farmers very close to $25 million of 1974. Maryland farmers also produce both white and sweet potatoes, sales of which grosses them $3,420 million in 1974.

There is probably no more demanding or intensive job in agriculture today than growing green vegetables on contract for processors. Eastern Shore producers of early June peas, for example must be prepared to meet higher exacting quality standards and very tight production schedules, if their product is to mature and be picked at the "fleeting moment of the perfect flavor", as one nationally known processor, who grows and buys here, aptly phrases it.

LEFT: Special machinery is required to cut sod, which is used to beautify home and buildings as well as for turf for golf courses and sports playing fields.

BELOW: On Maryland's Eastern Shore, the tender, young 1975 asparagus crop was harvested by migrant labor. Here workers weigh basketloads of the vegetable, which is then packed in plastic trays.

The ornamental horticulture industries.

A very significant sector of Maryland agriculture relates to the production of flowers, ornamental plants and turfgrass.

Horticulture, the production of flower crops under protective covering, is a highly specialized business involving the growing of flowers, as well as wholesaling and retailing these products. Also the demand for ornamental plants by home owners, industry and recent interest in beautification has provided a strong thrust to the nursery industry.

The combined sales of greenhouse and nursery products, which amounted to $12 million in 1966, rose to $16 million in 1974.

The turf grass industry is Maryland's newest agricultural pursuit. The production of sod for turf, which has long been supplied for golf courses and sports playing fields, has been spurred by the home construction boom and the increasing use of this product to beautify areas surrounding industrial, commercial and governmental structures, hospitals, schools and private institutions. However, recent cutbacks in construction have had a somewhat dampening effect on this specialized sector of agriculture.

Maryland produces more commercial sod than Virginia, Pennsylvania and New Jersey combined. It has been estimated that 13,000 acres are now in sod production with a potential value of $43.0 million, when installed. The establishment and maintenance of turf provides considerable employment and is a multi-million dollar business.

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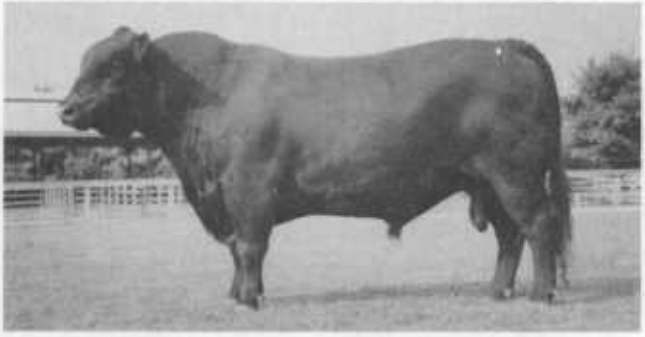
Angus brood cows of the 250 head herd at historic Wye Plantation graze on pasture land of the 1,400 acre farm, once the home of Declaration of Independence Signer William Paca.



Franchester of Wye, photographged at three-years, weighing 2,150 pounds, one of the real prominent young sires at stud at Wye Plantation.

Maryland pork producers concentrate on raising hogs that yield lean, nutritious meat.

Raising livestock.

When the Continental Congress requested the State of Maryland to help provide food for Washington's army, it had in mind not only flour and salt fish, but beef and pork as well. And included in the assortment of supplies, gathered initially by the state agents in Somerset County, were livestock. Extant records show that on one occasion, the state military supply depot at Head of Elk (Elkton) held several hundred beeves, which the Continental commissary representatives refused to accept because the animals were not slaughtered, butchered and the meat salted and packed in barrels. And, as was usually the case, the commissary office had no funds to accomplish this. Presumably, the troops once again went hungry.

Two hundred years after the Revolution, Maryland farms continue to raise livestock. However, the capacity to produce is quite limited in comparison with the requirements of the population. But some of the finest breeds and bloodlines of cattle and swine are to be found here. Many of these are shown at the Maryland State Fair, county fairs and the Eastern National Livestock Show at Timonium, as well as at farm shows throughout the U.S.

The Maryland Crop Reporting Service indicated that on January 1, 1975, there were 444,000 cattle and calves on the farms, with a value exceeding $104 million

Dairy cows represent about half of the cattle population. Their important role in Maryland agriculture will be detailed further along. Beef cattle numbered about 130,000 and included such prized breeds as Black Angus, Hereford Shorthorn and Charolais as well as the new exotic breeds, such as Simmental and Limousin.

Meat is a source of protein and other nutrients necessary for growth and good health. Among all meats, beef is most preferred in this country, with consumption now at about 120 pounds per capita. To meet the demand, cattle production has changed in recent years, with the use of feedlots handling some 25,000 head of cattle yearly.

Generally the cattle are fed from 120 to 180 days, adding about 125 to 200 pounds to each animal's total weight.

It has been estimated that Americans, at their current average rate of meat consumption use the following over a 70 year life span:

14 beef cattle	2 calves	880 chickens
23 hogs	12 sheep	35 turkeys

SOURCE: People's Almanac, 1975 edition

Pork ranks as the second most popular meat in the taste preference of American families, with the average person consuming about 67 pounds a year. Obviously, Maryland farms would not have the capacity to supply the state's pork requirements. But production here is, nevertheless, impressive, with a December, 1974 count showing 223,000 hogs and pigs. The sale of hogs brought Maryland farmers more than $19 million that year.

A century ago, Maryland farmers raised 50 percent more swine than they do now. There are even fewer today than in the 1950's. But great strides have been made in pork production in recent years through research, breeding and feeding, which have enabled farmers to raise swine bearing far more nutritious meat and a minimum of fat. The most popular breeds here are Hampshires, Yorkshires and Duroc.

Maryland has a little lamb . . . and some sheep, too.

The raising of sheep in Maryland is hardly a significant industry in terms of numbers and income. The state's sheep-lamb population, as of January, 1975, was approximately 17,000 — six percent below the previous year, but in line with a 30 year national downward trend. These animals were valued at $655,000. Latest figures (1974) on wool production indicate that 119,000 pounds, with a market value of $54,000, were produced.

However, the raising of sheep continues to be a highly popular project among members of 4-H and Future Farmers of America. And with an increasing demand for fine wool and a corresponding price rise, these teen-age farm projects have proven profitable, as well as educational.

Horses, horses, horses.

Maryland stands out as one of the top horse breeding states in the nation. Thoroughbred breeding and racing have been a part of the Maryland scene since colonial times, when the Sport of Kings attracted such eminent personalities to Annapolis as George Washington. The famous Preakness, Middle Jewel of the Triple Crown, at Pimlico, is 102 years old. Laurel's world renowned International attracts competitors from here and abroad for the "Horse of the World" title.

The 650-member Maryland Horse Breeders Association reported that in 1974 sales and stallion services operated at nearly record levels. At MHBA auctions, 628 thoroughbreds were sold for a gross of $2.17 million — the third highest sum ever recorded here. Thoroughbred farms around the state, with more than 200 stallions standing at stud, charge fees ranging from $250 to as much as $25,000.

Maryland is horse country.

There has been no recent census of the state's horse population. However, it is estimated that there are close to 50,000 or more horses in Maryland, including the herd of "wild" horses or ponies found on Assateague Island, popularly known as Chincoteague ponies. The world's largest Arabian horse farm, Al Marah, is located in Montgomery County, near Barnesville. Many farms specialize in Standard bred horses for harness racing. Quarter horses are also raised here, as are other breeds, such as Appaloosa and Morgan.

Horses provide thousands of Marylanders with a variety of pleasurable recreation, including riding, fox hunting, shows and racing. Maryland flat and harness track meets, which produced nearly $20 million in tax revenues in 1974, represent an important economic, as well as entertainment function.

At a Western Maryland plant fresh peaches are washed prior to shipment to market.

A land of fruit and honey.

Early chronicles describe Maryland as a sort of land of Canaan, with a delightful climate, fertile soil, plent of water and forests that yielded excellent wood. There was an abundance of game and wild fruit.

Maryland's fruit industry began with the early colonists, who planted apple trees in small numbers. The Eastern Shore became an orchard center after tobacco cultivation ceased. But production had steeply declined by the 1920's. Meanwhile new plantings had moved westward. E.P. Cohill and R. S. Dillon established orchards in the Hancock area in 1896, which was to become the center of modern apple production. Today, while orchards are to be found in most parts of the state, growing is primarily centered in Washington County and in sections of Allegany and Frederick Counties, with some significant production in Cecil County, as well.

Sixty five million pounds of apples were harvested in 1974, and sales brought growers nearly $6.7 million. The 1975 crop is expected to exceed last year's by about 17 percent, but market conditions are less favorable, and grower costs higher. About half the apple production is marketed for fresh sales, with the remainder for the processing of juice, cider, applesauce, applebutter, and other apple products. Varieties include Red Delicious, which leads in production, followed by York, Stayman, Golden Delicious and Rome Beauty.

Peaches are grown on a commercial scale, with

"Remember Johnny Appleseed
All ye who love the apple
He served his kind by Word and Deed
In God's grand greenwood chapel"

William Henry Veneable, 1836-1918

production likewise centered in the Washington-Frederick-Alleghany area, which geographically is an extension of Virginia's Shennandoah Valley. Latest production figures (1974) indicate that the state's peach orchards produced and brought orchardists about $2.2 million.

Before World War II, Maryland was nearly as well known, at least here in the East, for its lucious strawberries as it was for its delectable crabs and oysters. Every county produced these berries, but commercial operations, which began in mid-19th century in Anne Arundel County, were limited to about 12 counties. The record harvest came in 1924, when about 24 million quarts were sold. By 1953, the crop had dropped to just 2.5 million quarts, with commercial growers limited almost entirely to the lower Eastern Shore, where they remain today, producing on an even much more diminished scale.

Gourmets agree that the Maryland strawberry, which is picked at the peak of its sweetness, is far more flavorsome and of a much superior quality than the "imported" berries from the West Coast. But for some years, producers here have not been able to compete with the lower labor costs of that area. As a consequence Maryland berry production has experienced a steady decline. Whether it will survive remains to be seen.

A variety of small fruits and nuts are grown on Maryland farms. However, in the recent past production has not been commercially significant. But at least one local winery, Boordy, at Riderwood, Baltimore County, has established a wide reputation for producing excellent red, white and rose wine, from Maryland grown grapes, as well as for the growing of vines for the industry.

Honey

The pollination function of bees is essential to the production of apples, peaches and other fruits. And the bees, themselves, also favor us with a highly desirable food — honey, as well as with their very useful wax.

A bee count in 1974 showed 12,000 colonies in Maryland, cared for by 582 registered beekeepers. Most colonies are in Western Maryland, the apple and peach orchard center. That year bees produced 264,000 pounds of honey and 6,000 of wax. The honey had a value of about $177,000 and the wax at $7,000. But, the value of the work of the bees is inestimable.

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Milk — a nearly perfect food.

Milk is one of our most nutritious foods. Its use for human consumption is about as old as civilization, itself. The first dairy cattle were brought from England to the colonies in 1624. In 1783, a Maryland farmer, H. D. Gough, imported improved breeds of English cattle to this state. But from colonial times until the 1850's, dairying was a family business, usually conducted on a small scale. It did not truly flourish until much later.

Today, the dairy industry, is the state's second largest agricultural enterprise and is considerably older than the broiler industry. It dates back to the mid-19th century, well before the days of mechanical refrigeration, when dairy farms had to be located within a 25 mile radius of their markets. Now, with fast transportation, distance from market is less of a factor for the farmer. But for the consumer it is economically advantageous that a source of supply be near at hand, as it is here.

Although the world's first ice cream plant was opened in Baltimore in 1851, the state's first commercial creamery for the processing of butter was not established until 1884. By the turn of the century, there were about 60 such creameries in operation about the state. Scientific advances in dairying, including the Babcock butterfat test and commercial pasteurization equipment came in the 1890's. By World War I, the processing and retailing of milk had passed from the individual farmer to the commercial dairy companies, who were later to introduce homogenization, fortifying of milk with vitamins and modern packaging.

Just prior to World War II, marketing cooperatives were formed by Maryland farmers in the Baltimore-Washington region. Several such organizations, now serving dairymen statewide, have acted as bargaining agents for the producers in their dealings with the processor-distributors. Federal legislation, passed in 1937, established milk marketing orders and pricing by formula led to a greater degree of stability in the dairy business here as elsewhere.

One milk cooperative, operating in Maryland, has constructed the country's largest dry milk processing plant, located in Laurel. This installation, which also processes butter, was built specifically to handle the surplus production of the

Maryland dairy farms help supply the needs of the Baltimore-Washington metropolitan market.

cooperative's membership. It also buys surplus milk from other dairy cooperative associations. Such an outlet is a necessity because dairy cows give milk seven days a week and their production varies from season to season, while commercial processors, who operate only on weekdays, will not buy milk on weekends.

Phenomenal advances in dairy science and animal husbandry in recent years have enabled dairy farmers, through careful management, to increase the milk yield of their cows far beyond previous records. In fact, efficient dairymen have upped their volume while reducing cattle population.

In 1965, with 186,000 dairy cows on farm, Maryland dairymen produced 1.5 billion pounds of milk. Yields averged 8,380 lbs. per cow. In 1974, with just 136,000 cows on farm, milk production reached 1.4 billion pounds, for an average of 10,956 lbs. per cow. But in spite of these impressive production records, dairy farmers have faced difficult economic problems associated with the labor shortage and inflation. Costs frequently have outpaced profits, forcing some farms out of business, particularly the smaller operators. Since 1968, when there were 4,000 dairy herds in the state, the number has been reduced by 25 percent.

There are currently dairy herds in each of Maryland's 23 counties. The five leading producers, based on 1974 records, are Frederick (425.0 million pounds), Washington (201.0 million lbs.), Carroll (222.0 million lbs.), Harford (114.0 million lbs.) and Montgomery (72.5 million lbs.). These counties accounted for nearly 70 percent of the state's production of 1,490.0 million lbs. Dairy products brought farmers $130.8 million that year.

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Chicken comes before the egg or turkey.

While the Eastern Shore ranks among the world's leading producers of broiler-fryers, Maryland, surprisingly, is not a top producer of table eggs. In fact, to meet consumer demand, eggs must be imported from other areas of the country, such as Virginia.

For sound husbandry reasons, broiler production and table egg production are not compatible. It has been established that the risk of disease transmission is too high.

Egg farms are centered on the western shore, largely in Carroll and Baltimore Counties. Like their counterparts in the broiler industry, egg farms are quite large and mechanized for mass production. While they have the advantage of being close to metro-consumer markets, feed and labor cost are high and competition from out-of-state producers is stiff.

In 1974 sales of over 331 million table eggs brought farmers $19.1 million.

Similar conditions prevail in the state's turkey industry. About 31,000 turkeys were raised here in 1975. Growers have reduced production by 45 percent just in the past two years. In 1969, 160,000 turkeys were raised. Today, there are only seven turkey farms in the state, three of which produce under 2,000 birds each. Cash receipt from turkeys in 1974 amounted to $196,000.

Being an egg or turkey producer in Maryland appears to be a matter of personal dedication.

Chicken a la Maryland.

Travelers almost inevitably find "Chicken a la Maryland" on the menus of fine restaurants the wide world over. History records that chickens were brought to the New World by the first settlers. Soon thereafter, poultry became a part of the Maryland farm scene.

But in spite of the fact that Marylanders obviously excelled in the cooking of chicken, centuries before Colonel Harland Sanders touted his Kentucky Fried Chicken around the world, the raising of poultry remained, for the most part, virtually a sideline for most farms, until very recent times.

Today, the multi-million dollar broiler-fryer industry is Maryland's leading agricultural enterprise. And, as will be seen, it is a relatively new business, which was begun shortly after World War I, but which did not take off until after 1945. In fact, the nation's commercial broiler industry celebrated its 50th anniversary in 1973.

It had its beginning in neighboring Delaware, where, in 1923, Mrs. Wilmer Steele, who managed a small flock of laying hens, was raising a brood of 500 chicks as replacements. That year, however, instead of using all of the flock on the farm, she sold 387 of them to a local live poultry dealer. This sale brought her about $1,200, a substantial sum for that time. Soon, word of this new and apparently profitable farming enterprise spread to nearby Maryland and Virginia, where the Delmarva poultry industry was to ultimately take shape. But it was several decades before modern production methods approached the almost miraculous efficiency now achieved by the U.S. broiler industry, as epitomized on the Eastern Shore.

Over the years, nutritionists, geneticists, poultry pathologists and other professionals from the land grant colleges, including the University of Maryland, as well as from the private commercial sector, have cooperated in the development of management techniques and the improvement of meat-type broiler-fryers (as contrasted with layer chickens). Thousands of broiler growers and hatching egg producers, along with many others working in hatcheries, feed mills, processing plants and related industries have played key rolls in advancing the industry to its present high level.

The following chart illustrates vividly the tremendous strides the industry has made.

TYPICAL BROILER PERFORMANCE

Year	Live Weight	Feed Efficiency	Percent Mortality	Age (wks.) when sold
1923	2.2	4.7	18.0	16
1933	2.7	4.4	14.0	14
1943	3.0	4.0	10.0	12
1953	3.2	3.0	7.3	10½
1963	3.5	2.4	5.7	9½
1973	3.9	2.0	2.7	8¼

Perhaps the best single indicator of the success of the U.S. poultry industry, of which the Delmarva

Interior scene of modern, insulated grow-out broiler house in Maryland. Most broiler houses are insulated, have fans for ventilation and automatic feeders and waterers. Close supervision by the grower is still required to spot problems and prevent losses.

group forms a major part, is the fact that in the 1970's, the consumption of chickens rose to a high of 38 pounds per capita annually, from a level of about 8.5 pounds in the 1950's.

Many readers will recall that it was not too many years ago that chicken was so expensive it was served for Sunday dinners or for special occasions. Then, chicken, at the wholesale level, was handled by live poultry dealers, who in turn sold small quantities to butcher shops, where the birds were slaughtered and dressed. It was not until the 1950's that eviscerated, chilled broilers from the producing centers became readily available at consumer outlets.

Today, through the continuing efforts of the industry, the mass production and marketing of dressed poultry has been achieved, making chicken readily available in supermarkets at a reasonable price. Industry groups, led by the Delmarva Poultry Industries, Inc., a regional council of growers, processors and others concerned with the business, have catered to the needs and preferences of the consumer. For instance, the industry is now making available such services as tray packaging, by which consumers are able to select individual parts or cut up whole chickens ready for cooking.

"Delmarvalous" chicken has a deservedly excellent reputation for consistent high quality and flavor. Currently, the tri-state peninsula produces about one million chickens a day. Most recent annual production figures (1974) indicate that Maryland raised 189.7 million birds. The average weight of these chickens was four pounds and the crop had an estimated value of $166.5 million.

The famed annual National Chicken Cooking Contest, which originated with Delmarva Poultry Industries, Inc., has done much to popularize chicken with U.S. housewives. DPI now sponsors the regional Delmarva Chicken Cooking Contest as a preliminary to the national event.

FACTS ABOUT DELMARVA'S BROILER INDUSTRY

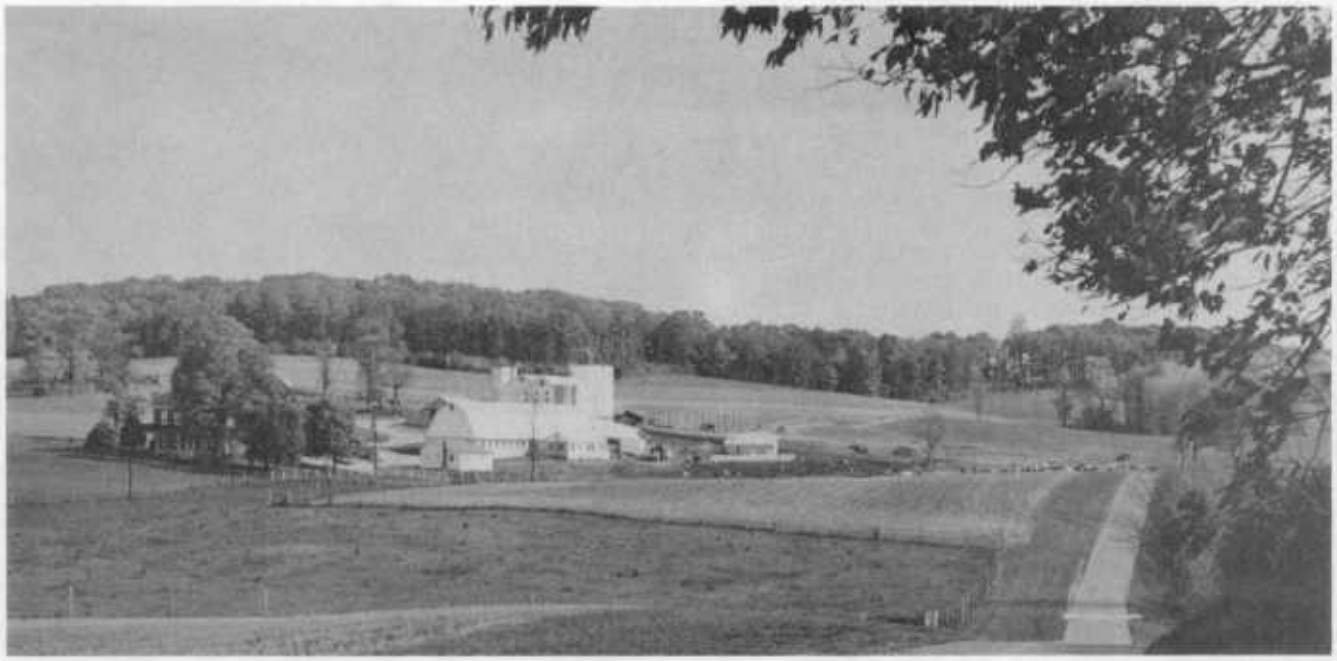
All Figures are for 1974

Annual broiler production	$341,161,000
Number of growers	3,300
Contract payments	31,000,000
Broiler house capacity	77,000,000
Value of chicks started	36,250,000
Annual feed bill	245,000,000
Vaccinating and debeaking chicks	3,750,000
Litter, sanitary spraying of houses	2,500,000
Processing plant workers	6,500
Bags, tags, crates, boxes & refrigerates	14,500,000
Value of broilers processed and delivered	400,000,000
Heat, lights and power	28,500,000
Communications, advertising and professional services	3,475,000
Total insurance premiums	1,950,000
Industry supply and services people	2,150
Bushels of soybeans used for broiler feed	15,000,000
Bushels of corn used for broiler feed	33,000,000
Farm value of this grain needed for broiler production	204,000,000
Capital investment	254,000,000
Annual payroll and other services (not including contract payments)	75,000,000

ABOVE: One of Maryland's feed mills that formulate "least cost" broiler rations through the use of computers.

LEFT: Chicken from Delmarva is processed in automated ultra-sanitary processing plants under supervision of USDA inspectors.

Mrs. Wilmer Steele, founder in 1923 of the commercial broiler industry, with two of her children and her poultry caretaker.



Dairy farms punctuate the rolling countryside of Central Maryland.

Maryland Agriculture And the Environment

Long before ecology and environment became popular catch-words, Maryland farmers were practitioners of conservation. The very nature of farming engenders a respect for nature and the environment in those who earn a livelihood working the soil and tending livestock.

Maryland farmers, have for many years been active in soil conservation work. To prevent the loss of top soil, which is so costly to agriculture, Maryland farmers joined with federal and state government, in the 1930's, to establish 24 Soil Conservation Districts throughout Maryland.

The Districts, working with the Soil Conservation Service, an adjunct of the Maryland Department of Agriculture, cooperate with and assist farmers to develop projects involving contour cultivation, strip cropping, terracing, diverting, draining and other feasible means to save the soil. The program also includes the building of farm ponds, wildlife management, land-use surveys, soil mapping and related activities of a conservancy nature.

Maryland agriculturists have been in the forefront in advocating the proper and cautious use of fertilizers, insecticides, herbicides and other chemicals essential to successful farm operations. The Maryland Department of Agriculture administers the state's strict Pesticide Applicators Law, which requires that pest control operators (exterminators) custom applicators and government agency personnel using pesticides be licensed. It also acts to restrict the use and sale of certain pesticides potentially hazardous to human health, livestock or the environment. In spite of unsubstantiated implications to the contrary, there has never been a single human fatality from the use of agricultural chemicals in Maryland.

The preservation and protection of open-spaces, woodlands, pastures, croplands and a well-balanced rural environment represents a major concern of all Maryland farmers.

The processing of meats is an integral part of the agribusiness.

The Other Faces Of Agriculture

Not all agriculture is farming. In the present broad meaning of the term, it includes a multitude of related economic activities often referred to as "agribusiness."

Farming creates a demand for specialized goods and services. The manufacture, sale and service of this equipment involves a multitude of jobs for urban workers. Farmers use large quantities of man-made fertilizers and pesticides, which, in some instances, have to be applied by licensed specialists. The field of agricultural aviation is an important supportive service.

Most farm commodities require processing and packaging before they reach the consumer. Livestock must be slaughtered and butchered. Some meats, such as ham, sausage and bacon, undergo special processing. Grain must be milled to be transformed into flour, meal or grits. Vast quantities of vegetables are processed for canning or freezing, before they reach the end user. Milk must be trucked from the dairy farm to the processing plant, where it undergoes preparation for a variety of uses. Some is pasteurized and bottled for sale as fresh milk. Some is processed for buttermilk, evaporated or dried milk. It is used in the manufacture of butter and cheese. Large amounts go into the making of ice cream products.

Food processing and packaging are usually off-farm operations, generally performed in or close by cities or towns. Thus, it is obvious that this sector of agriculture represents an important generator of urban jobs and income. For instance the largest meat processing firm on the East Coast is located in Baltimore.

Maryland Statistical Abstract (1975) indicates that there are 34,100 workers employed here by over 520 firms engaged in processing and manufacturing of food and kindred products. Payrolls approach 270 million with the worker's hourly wage now averaging $3.94. And the value added by the manufacturing or processing exceeded $677 million.

No implication is intended that Maryland-produced food and fiber represent the sole source of raw material for the processing and distributing sector. Large quantities are, of course, utilized, while substantial amounts are shipped elsewhere. For instance, most fluid milk produced in-state is consumed here and in the District of Columbia. Delmarva poultry, on the other hand, is marketed almost exclusively out-of-state.

Modern farming is a highly mechanized operation requiring expensive equipment. Here is an estimate of the number of farm vehicles and other mechanical equipment in use in Maryland.

Tractors	30,000
Plows	25,000
Trucks	20,000
Portable Elevators	13,000
Mowers	12,000
Corn Planters	10,000
Grain Drills	10,000
Manure Spreaders	9,200
Rakes	9,000
Balers	5,000
Hay Conditioners	5,000
Forage Harvesters	4,500
Picker-Shellers	4,000
Combines	3,500

The fertilizer and farm chemical requirements of Maryland farms are so substantial as to help support the presence of 26 manufacturers or processors of fertilizers and 17 makers of pesticides. There are six Maryland-based firms that manufacture farm equipment and parts.

Agriculture depends heavily on the transportation industry. Fast, dependable and economical means of transportation have enabled agriculture to move food and other farm products quickly and efficiently from fields to markets. For instance, the dairy industry transports vast quantities of fluid milk to processors and thence to the consumer. Farm commodities are shipped by truck, rail, ship and aircraft. Supplies required on a farm, such as chemicals and fuels, move by a variety of means. Because of the importance of agriculture to the nation, farms were granted top priority during the 1973 fuel crisis.

Modern farms require large quantities of both fuel and electric power. But as recently as the 1930's, only about 10 percent of Maryland farms were reached by power lines. Following the establishment of the USDA's Rural Electrification Administration in 1935, several electric cooperatives were formed here by farmers and other rural residents to bring electricity to the countryside. Today, better than 99 percent of farms around the state are served either by rural electric cooperatives or private utility companies.

Farm credit.

Two centuries ago, as Maryland farmers were called upon to supply food for the Revolution, the lack of a sound national currency and a credit system made it difficult for the Continental Congress and state

governments to procure food for the army. Farmers, naturally, were reluctant to accept payments in a currency which was so worthless it sparked the expression, "It's not worth a Continental." Like many other patriots, the Financier of the Revolution, banker Robert Morris, a native of Maryland, exhausted his personal fortunes to help overcome this credit deficiency.

Two decades after the Treaty of Paris was ratified by Congress, in the Maryland State House (January 14, 1784), Maryland's oldest continuously operating banking institution was organized in Annapolis, then a major farming center. It was named, appropriately, the Farmers National Bank and was the forerunner of many banking institutions established around the state to serve the agricultural community.

Today the agribusiness and banking are mutually supportive. Farming has become highly capital-dependent as mechanization has reduced labor requirements. Farm operators must invest heavily in buildings and costly equipment, giving rise to a continuing need for credit, which is generally obtained locally. However, increasing cost of farm in-put has caused a heavy drain on rural capital. Other sectors of the agribusiness utilize a variety of urban sources for their capital needs. A University of Maryland study (1968) estimated that farm mortgage credit needs will be about $350.0 million in 1976 and that short term credits should reach close to $150.0 million by that year. But this estimate was made before the inflation of the 1970s.

Farm cooperatives.

Today's farm operator must be keenly alert to signals from the market place in order to adjust his production upward or downward in response to supply-demand indicators. While some crops are produced on contract with processors, most are grown on speculation. Thus, farmers, in addition to being skilled in the agricultural sciences, must be market-oriented. In recent years, they have formed or joined cooperatives which provide economies and services related to buying and selling. The oldest tobacco cooperative in the country is the Maryland Tobacco Growers' Association. The Maryland Apple Commission and The Maryland Sweet Potato Association promote their products.

USDA

The proximity of Washington, D.C. accounts for the presence of the National Agricultural Research Center and the National Agricultural Library at Beltsville. The USDA's Crop Reporting Service for Maryland and Delaware is located in College Park. The USDA's Agricultural stabilization and Conservation Service, also headquartered there, serves farms throughout the state.

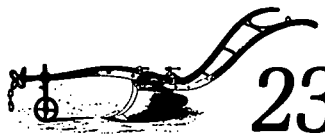
Agriculture and education.

Agriculture generates a demand for the service of veterinarians and related medical personnel. Farm animals and horses frequently require veterinary medical attention, which often is supported by laboratory analysis. Disease control and meat poultry inspection by the regulatory agencies also involve veterinarians and specially trained sanitation personnel. There are now over 700 licensed veterinarians in the state.

No resume of Maryland agriculture would be complete without reference to the major contribution education has made to its advancement. In the early 19th century, Maryland farmers were among the first in the nation to recognize the need for training and scientific procedures. They led a move which resulted in the establishment of the Maryland College of Agriculture, at College Park in 1856, one of the forerunners of the many federal Land-Grant Act colleges later established throughout the nation.

The Maryland College of Agriculture was later to form one of the cornerstones for the establishment of the University of Maryland, which has carried forward and expanded the scope of the original concept of agricultural education. The University currently provides basic and advanced instruction in the multiple agrarian sciences and conducts an extensive research program which includes a research experimental station. In cooperation with the U.S. Department of Agriculture, it coordinates the work of the Extension Service, which functions through county agents assigned to each of the 23 counties.

The University's agricultural endeavours serve not just farmers, but the community as a whole. Today, most graduates of its agriculture department enter industry, research and educational professions, which are typically urban based.



Saving Maryland's Farmland

Hopefully, by now readers of this booklet will concur with the view that Maryland agriculture is highly productive and important economically. But it should not be assumed that farming is by any means assured of a firm future in this state. The fact is that farm production is constantly threatened by increasing development, including commercial, industrial and residential.

Take a look at what has happened since 1950 when there were then 36,107 farms in Maryland. In the relatively short space of 25 years, this number has fallen to about 17,500. A more than 50 percent loss! Of course, agriculture still persists as the largest user of Maryland land. But the demand on land for other applications continues.

Often to the detriment of agriculture, land developers and speculators are motivated to buy farmland at prices several or more times greater than the farm value. All too often, farm owners are in no position to resist this option. And it usually happens that choice farmland—open, flat or gently sloping and well drained—is the prime choice for developments other than agricultural.

A study of soil types reveals that a large percentage of Maryland's land surface is arable and productive. But since 1949, over 1 million acres of agricultural land have been converted to other uses. By the year 2000, it is estimated that another 1.5 million acres will be removed from farm production, unless measures are taken to reverse this trend.

Agriculture meets basic human needs by providing food and fiber. Today, as the world's population soars it creates a constantly rising demand for food. The United States, through the resourcefulness of the American farmer, utilizing the latest techniques made possible by agricultural research, has succeeded in more than fulfilling the demands of our citizens.

At the same time, this country provides grains and other commodities to foreign nations, both on an export trade basis and through the Public Law 480 program, by which food is furnished free to needy nations.

Now, possibly more than ever, Maryland's food production capability—*better than $600 million worth of farm commodities are sold each year*—represents a resource that should not be allowed to diminish or be frittered away through the unwise or unnecessary diversion of prime farm land to non-agricultural purposes. Studies have indicated that Maryland has sufficient acreage to meet its multiple needs. About 1.5 million acres are being recommended for retention as farm land. But to accomplish this goal, adequate planning and strong conservation and protective measures must be provided.

A viable state program that would preserve farmland for the future, protect the farm owners' property rights and investments, and encourage the continuance of agricultural production here would benefit all Marylanders by:

1. Assuring a supply of fresh high quality food at reasonable cost, close to the consumer.
2. Creating job opportunities, income and markets for the resources of production.
3. Contributing to the nation's balance of payments by providing food and fiber for export.
4. Maintaining the quality and beauty of the environment and protecting the hydrologic integrity of watersheds.
5. Providing productive, taxable, privately-owned open spaces, some of which will serve for outdoor recreational facilities.

The Maryland Agricultural Land Preservation Foundation, within the State Department of Agriculture, offers an easement program aimed to help farm owners save their property for posterity.

Coincident with the Bicentennial of the American Revolution, the Maryland General Assembly will be considering proposed legislation aimed to preserve agricultural land. But whatever is accomplished at the state and local levels, Congress will have to enact appropriate legislation if regressive estate taxes on farms are to be lowered, to enable farmers to pass on their farms to their heirs to continue the land in agriculture, for their own benefit and that of all Marylanders.

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