THE LIMITS OF AGRARIAN REFORM IN THE SLAVE SOUTH

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ABSTRACT

"The Limits of Agrarian Reform in the Slave South"

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During the first half of the nineteenth century the wasteful and destructive methods of cultivation that had arisen under frontier conditions were gradually replaced by conscientious attempts at soil restoration, crop diversification and rotation, and livestock improvement. The South shared in this improvement only partially, for slavery engendered a low level of productivity and related evils that together made a general reform impossible.

Among the less direct effects of slavery were the retardation of capital accumulation and of the formation of a home market. The rapid concentration of land, slaves, and wealth prevented the development of a large rural home market and therefore held back urban manufactures. In turn, the lack of an urban market, together with the lack of capital, rendered impossible a thorough agricultural reform.

The greatest weakness of the slave economy was the low productivity of labor, which had its most direct expression in the slaves' careless and wasteful work habits. Less directly, low productivity imposed severe limitations on technological development and the division of labor. The argument of some leading scholars (U. B. Phillips, L. C. Gray, A. O. Craven) that low productivity is to be accounted for by the cultural

backwardness of the Negro rather than by his slave status cannot stand the test of anthropological investigation. The Negro came from agricultural communities in Africa and was accustomed to hard work. Only a generation, at best, was needed to broaden his skills. Although the slave may have worked well enough in the cotton fields under the gang system, he was not to be trusted, except under special conditions, under a more advanced system of division of labor. Statistics on home manufactures and the employment of skilled labor, culled from the manuscript census returns and from plantation manuscripts, show that division of labor was minimal. Under the circumstances concentration on a staple crop, even in periods of low prices, had to be more profitable than the diversion of labor to other activities.

Slavery and the plantation system led to agricultural methods that depleted the soil. In this respect the experience of the South did not differ much from that of the North; but slavery forced the South into continued dependence upon exploitative methods after the frontier had passed. The plantations were too large to fertilize easily; the necessary livestock was missing; the planters and farmers could not afford commercial fertilizers; proper rotation could be practiced only with great difficulty; and the labor force, upon which every attempt at reform depended, was of poor quality.

The pleas of the reformers for diversification and improvement of livestock were little more than exhortations for a step backward toward natural economy. While slavery existed, the regional market for foodstuffs remained small, and progress had to be limited to supplying the needs of the plantation itself. With greater effort and support the reformers might have made the South self-sufficient in food, but the one-crop system, with its destructive effects on the soil and the general economy, would have been modified only slightly. The program of the reformers could not have resolved the dilemma of how to retain slavery and yet guarantee the preservation of Southern productive and political power.

A more genuine reform did take place in certain areas: Maryland, Virginia, and some counties of the Lower Southeast. Elsewhere, notwithstanding great claims, reform proceeded with great difficulty. The reform process in the older areas of the South contained grave contradictions. First, reform depended upon the sale of surplus slaves to raise the capital necessary for improvements and to reduce the slave force to a size permitting careful supervision and division of labor. Past a certain point, the economy had to follow the course of Maryland toward the gradual abolition of slavery and institution of free labor or face the resurgence of the old difficulties. Secondly, the regular sale of slaves threatened to corrode the pride in slaveholding that was so

essential to the maintenance of the ideological defense of slavery. Thirdly--and most important--the slave sales were made possible by the continued use of gang-labor methods in the Lower South. Even with reform, statistical analysis suggests that agriculture was about marginal and that profits came from slave-raising. When the newer areas also were forced to reform, the markets for surplus slaves would dry up. Reform in one area depended upon the maintenance of old methods in other areas. A general reformation of agriculture was impossible so long as slavery was retained.

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The Problem in General

During the early part of the nineteenth century American agriculture operated under frontier conditions dictating the use of wasteful and destructive methods of cultivation. As the land became exhausted and the frontier moved further west a reformation of agricultural practices took place in the older areas. There was never much doubt that this generalization was true for the free states, and in the last thirty years it has become accepted as true for the slave states as well. Yet, Southern agriculture was fundamentally different from Northern, and the difference stemmed essentially from the use of slave labor.

Slavery engendered a low level of labor productivity and less direct evils that together made impossible a general agrarian reform. I propose to support this judgment by considering the productivity of labor, the special character of the problem of soil exhaustion in a slave economy, and the specific difficulties confronting those who would diversify crop production and improve livestock. Finally, I shall discuss the reform movement itself and try to show its inherent contradictions.

This essay is not concerned with those less direct effects of slavery that were nonetheless so important in limiting the progress of agrarian reform. It is generally recognized that slavery and the related system of staple crop production for the export market retarded the accumulation of capital and permitted a steady drain of needed funds to Europe and the North. But some other important aspects of the economic weakness of a slave economy are not so well appreciated. The weakness of the home market for agricultural and industrial commodities probably had as much to do with the failure of the agrarian reform movement as any other factor. An understanding of this weakness and, generally of the relationship between town and country in a slave society is necessary if the reform movement is to be evaluated correctly.

The General Relationship between Agriculture and Industry in the Slave States and the Free

Robert R. Russel, speaking for a growing number of scholars, claims that slavery did not retard manufacturing although slaves worked better in agriculture than in industry.[1] Slavery did, I shall try to show, hinder industrialization, and the inefficiency of labor was not the most serious obstacle. Furthermore, the factors that impeded industrial growth were also responsible for the development of Southern agriculture along lines fundamentally different from and inferior to those of

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[1] "The General Effects of Slavery Upon Southern Economic Progress," Journal of Southern History, IV (Feb., 1938), 34-54.

agrarian societies based on free labor.

Slavery concentrated economic and political power in the hands of a slaveholding class bitterly hostile to industrialism. The planters were unwilling and unable to assume a heavy tax burden to assist manufactures, and as the South fell further behind the North, increasing government aid was required to close the gap. Slavery retarded immigration and thereby cut the South off from the skilled European craftsmen who were so important to the industrial growth of the free states. Perhaps most important, slavery prevented the rise of a prosperous yeomanry such as existed in the free states and thus made capital accumulation difficult and the creation of a home market virtually impossible.[1]

Although suspicion of things urban has always run high among farmers, the idea that agrarians are naturally opposed to industrialism is untenable. A prosperous yeomanry creates a market for manufactures, and industrial centers provide a market for agricultural produce and for surplus capital. In 1828 "the stronghold of the protective movement was in the Middle and Western states...the great agricultural states;"[2]

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[1]Frank L. Owsley and his students have tried to prove that a prosperous yeomanry did exist in the South. See Plain Folk of the Old South (Baton Rouge: Louisiana State University Press, 1949). But his work rests on faulty statistical methods. See Fabian Linden's devastating critique: "Economic Democracy in the Slave South: An Appraisal of Some Recent Views," Journal of Negro History, XXXI (Jan., 1946), 140-89.

[2]Frank W. Taussig, The Tariff History of the United States (7th ed.; Cambridge: Harvard University Press, 1923), p. 70.

and in the Ohio Valley of the antebellum period "farmers regarded their prosperity as closely interlocked with the growth of the interior cities."[1] Even in the slave state of Missouri Benton's Jacksonian party, which spoke for the yeomanry, gave enthusiastic support to industrial development.[2] If agrarianism was hostile to manufactures then only the slave South was truly agrarian.

Slavery led to the rapid concentration of land and wealth and prevented the expansion of the South's home market. In the first days of the republic the lands in the western slave states were selling at prices so low that the Northwest had difficulty in competing. But the advantages that might have accrued from a small farm economy were lost in the wake of the invasion of the plantation system and its strong tendency toward concentration. In Kentucky, Missouri, and northwestern Virginia, where the plantation system did not become firmly established, the economy increasingly became tied to that of the free states. The border states found markets for their agricultural produce and even manufactures in nearby cities like Pittsburgh, Philadelphia, and Cincinnati.

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[1] Isacc Lippincott, A History of Manufactures in the Ohio Valley to the Year 1860 (Chicago: University of Chicago Press, 1914), pp. 63f.

[2] See the analysis in James Neal Primm, Economic Policy in the Development of a Western State: Missouri, 1820-1860 (Cambridge; Harvard University Press, 1954), pp. 56-59. Also note the interest of Delaware farmers in promoting local mining and industry. See G. W. Carpenter, "On the Minerology of Chester County, with an Account of the Minerals of Delaware and Maryland," American Journal of Science & Art, XIV (Jan., 1828), 1f.

The countryside, then, was the basis on which industrial capitalism arose. To understand this relationship more fully we need to investigate the problems of markets and capital accumulation.

The Countryside as a Market

The agricultural history of England during the fourteenth and fifteenth centuries was distinguished by the rising prosperity of an independent yeomanry. During the sixteenth century the yeomen began to lose ground in the competitive struggles of an emerging rural capitalist society. The strongest agriculturists emerged as a moneyed rural bourgeoisie, whereas the weaker peasants descended into the ranks of the rural and urban proletariat. Thus, the agrarian revolution in England produced three results necessary for industrialization: an urban market, a countryside with purchasing power, and a propertyless working class.[1]

In America both capital and labor were in short supply. Industrial development was spurred by farmers who provided a large market for goods and tools, and manufacturing arose on the foundations of this immense effective demand.[2] Eastern

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[1]Cf., R. H. Tawney, The Agrarian Problem in the Sixteenth Century (London: Longmans, Green and Co., 1912), esp. pp. 136ff.

[2]H. J. Habakkuk contrasts market conditions in the United States with those in Latin America during the nineteenth century and concludes that the latter lagged in industrialization principally because the large estates retarded the formation of a home market. His remarks could be applied to the Old South. See "The Historical Experience on the Basic Conditions of Economic Progress," Economic Progress, ed. Léon H. Dupriez (Louvain: Institut de Recherches Économiques et Sociales, 1955), pp. 150ff, 159. Cf., Elizabeth W. Gilboy, "Demand as a Factor in the

manufacturers gradually awoke to their dependence upon the home market and by 1854 were willing to support homestead legislation not only to secure a tariff and for speculation but to take advantage of the incalculable opportunities offered by a growing home market. In New England manufacturing did not simply fatten on the adversity of agriculture, for although decreasing profitability in farming generally led to a shift of capital to industry, farmers were still doing well long after industrial growth acquired momentum.[1] Capital accumulation there, as in the West, was difficult, but industrial technique more or less took care of itself, and the market evolved naturally with agricultural expansion and improvement.[2]

The immense market that arose in the West guaranteed an import surplus until 1850. Whereas the South was plagued by having to export needed funds, the West was able to import capital because Eastern manufacturers and European creditors were confident of her growth and prosperity.[3] In recent

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Industrial Revolution," Facts and Factors in Economic History, by the Former Students of Edwin F. Gay (Cambridge: Harvard University Press, 1932), pp. 620-39.

[1]Grace Pierpont Fuller, An Introduction to the History of Connecticut as a Manufacturing State ("Smith College Studies in History," I, no. 1; Northampton, Mass.: Oct., 1915), p. 45.

[2]For example, this was the pattern in the early iron industry. Cf., Louis C. Hunter, "Financial Problems of Early Pittsburgh Iron Manufactures," Journal of Economic and Business History, II (May, 1930), 520-44.

[3]By the time Western exports equalled imports in 1846 the stability of the area had been assured and, notwithstanding the crisis of 1857, the foundations of industrial expansion had been laid.

decades the capitalists of one country have invested direct in the plants, land, and other real assets of another country. Previously, however, credits from a foreign country had to be accumulated by the importation of commodities and the maintenance of an unfavorable trade balance. On the whole, the unfavorable balance of trade was not a serious problem for the United States, for American importers were strong enough to obtain long term credits without incurring excessively difficult terms. Furthermore, during 1850-1860 the profits from shipping and other invisible gains largely offset the unfavorable balance.[1] Thus, on the one hand, the national economy was sufficiently strong to overcome the worst effects of a trade deficit, and on the other hand, the West, which most needed an import surplus, was able to obtain the credits required for industrial development. The South did not benefit from this happy arrangement. It provided an exportable surplus that, although of help in offsetting the national trade deficit, was exploited by Northern capital. The invisible gains that were so important to national growth were made partly at the expense of the South.

In the South the home market consisted primarily of the plantations, which bought foodstuffs from the West and manufactured goods from the East. The planters needed more industrial activity in the South but only for certain purposes. They imported clothing for their slaves and so wanted factories

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[1]Cf., Charles F. Dunbar, Economic Essays (New York: Macmillan Co., 1904), p. 268.

to produce cheap cotton goods; they used gins, plows, and a few other implements and so wanted production of some types of agricultural implements; they used rope in the packing of cotton and so wanted hemp factories; and so forth. But this type of market was strictly limited in its possibilities and could not compete with the tremendous Western demand for industrial products, especially agricultural machinery. The Northeast had the capital and skilled labor for fairly large scale operations with the best machinery available and had established its control of existing markets; thus, the South could not hope to compete outside its own borders. But the same conditi ons that brought about Northern control of the Northern market also made possible Northern penetration into the Southern market despite the costs of transportation.

Some industry existed in the South, and there was room for industrial expansion; but the possibilities for growth were sharply circumscribed by the needs of the plantations and by the limits that slavery placed on urbanization and the formation of a prosperous yeomanry. Data on the cotton textile industry almost invariably reveal that Southern producers aimed at supplying slaves with the cheapest and coarsest kind of clothing.[1] And even so, local industry had to compete with

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[1]E.g., for material on The Planters' Factory, Prattville, and the Tuscaloosa Manufacturing Company--all in Alabama--the Mississippi Manufacturing Company, and the Columbia (S.C.) Mills see U. S. Commissioner of Patents, Report on Agriculture, 1857, pp. 308f, 318. Cf., Richard H. Shryock, "The Early Industrial Revolution in the Empire State," Georgia Historical Quarterly, XI (June, 1927), 128.

Northerners who sometimes shipped direct and sometimes established Southern branches. With a superior stock of capital, entrepreneurial experience, skilled labor, and technical resources, they were often able to operate on a scale large enough to discourage local competition.

But the plantation system did have its small compensations for industry. The taste for luxuries among the planter aristocracy proved a boon to the Petersburg iron industry, which supplied the plantations with cast-iron fences, ornaments for lawns, balconies, and gates, and a variety of other decorative items.[1] A silk industry was attempted but was destroyed by climatic conditions and a shortage of capital. The plantation market was important to the hemp industry, which produced the rope needed for cotton bagging, and St. Louis and other cities of the Upper South prospered on this Southern trade.

Some contemporary writers looked at this relationship between the South's exports and imports and reasoned that it was being cheated. Since the North imported more than seven times as much as the South they concluded that the Yankees were making huge profits on reshipment to the Southern ports.[2] This argument assumed that the Southern home market was as large as the Northern, but there is no justification for such

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[1]Edward A. Wyatt, IV, "Rise of Industry in Ante-Bellum Petersburg," William and Mary College Quarterly, XVII (Jan., 1937), 32.

[2]Cf., B. Boykin and T. P. Kettel in De Bow, Industrial Resources, III, 125, 365.

an assumption.

Whatever the actual amount of reshipments, the Southern market did not compare in size with the rapidly expanding markets of the Northeast and West. The truth of the situation may be gleaned from the report of Phelps, Dodge & Company, a prominent cotton-shipping firm, which also handled metals, clothing, tools, machinery, and other items. At the outset of the Civil War the firm reported that only five per cent of its sales were to the South and that those sales were primarily to the noncotton states. We do not know how large a share of the cotton trade this firm commanded, but it was probably substantial. In the West, on the other hand, farmers and townsmen provided a growing and lucrative market, and the firm had more customers in Ohio than in any other state outside of New York.[1]

To judge roughly the extent of the market in the Cotton Belt I have taken two counties in Mississippi and two in Georgia and estimated the expenditures made by farmers and planters for necessaries.[2] The estimates are for those things that were necessary for running the farms and plantations and do not include household goods and personal items. On the other hand, these estimates are more than generous and no

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[1]Richard Lowitt, A Merchant Prince of the Nineteenth Century: William E. Dodge (New York: Columbia University Press, 1954), pp. 31ff, 37.

[2]See Appendices II and IV for the reasons why certain counties were selected and for the methods used in computing data from the manuscript census returns.

doubt exaggerate the size of the rural market, for there were far more of the rural poor with little or not purchasing power in the Cotton Belt than in the West and, as a result of the concentration of landholdings, there were far fewer landowners in the South than in any area of comparable size in the free states. Thus, even if the figures for individual proprietors had been large, the totals would still have been well below those for comparable Western areas. Furthermore, food was a major item in the expenditures under consideration, for the Cotton Belt could not feed itself; therefore the market for industrial goods was much smaller than might appear.

The analysis of expenses shows that the median annual expenditure was well under $500 for nonslaveholders and for those with up to nine slaves--that is, for sixty-three per cent of the landowners: it was about fifty dollars for nonslaveholders in Georgia and about $400 for farmers with five to nine slaves in Mississippi. The median expenditures for farmers and planters with from ten to thirty slaves ranged from $550 for Georgia farmers with ten to twenty slaves to $850 for Mississippi planters with twenty-one to thirty slaves. Only the largest planters--ten per cent of the landowners--spent more than $1,000 per year, and they rarely spent much more. The expenditures for each slaveowner include the total purchases for his slaves. Since the ratio of slaves to slaveowners in the Mississippi counties was 13:1 and in the Georgia counties was 11:1, it is clear that the countryside was

overwhelmingly dominated by slaves. When this factor is considered the per capita expenditures of the rural population are reduced to insignificance.[1]

In contrast, contemporary newspapers and merchants estimated that the small farmers of the West, who made up the great bulk of the rural population, ran up store bills of from $100 to $600 annually.[2] These figures do not include cash purchases, money paid to drummers, mail order purchases, and so forth, and are little more than a clue to the purchasing power of the Western countryside.

No claim can be made for the precision of the estimates, which, however, may be regarded as reliable enough to indicate the lack of purchasing power among the rural population of the Cotton Belt. Thus, the South did not have the funds to sustain commodity production apart from the production of a few staples. William Gregg, who was aware of the modest proportions of the home market, warned Southern manufacturers against trying to produce for local needs and suggested that they concentrate on the wholesale market. His own company at Graniteville, South Carolina, produced fine cotton goods that sold well in New York but not in the South. Gregg was an unusually able man, whose success in selling in the Northern market does not prove that others could have done the same. When he had to evaluate the general situation confronting Southern manufac-

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[1]See Appendix VI.

[2]Philip S. Foner, Business & Slavery. The New York Merchants & the Irrepressible Conflict (Chapel Hill: University of North Carolina Press, 1941), p. 143.

turers he was willing to stake his reputation on their ability to compete with Northerners in the production of "coarse cotton fabrics" (original emphasis).[1]

Some Southerners, especially those in the border states, did good business in the North. Louisville tobacco and hemp manufacturers sold much of their output in Ohio.[2] Botts and Burfoot of Richmond, Virginia, reported that they sold $1,000 worth of their excellent straw cutters in the North during a six-month period of 1842-1843.[3] And the more successful of the Southern iron producers were those who were able to sell outside the slave states.[4] Smith and Perkins of Alexandria, Virginia, began production of locomotives and railway cars in the 1850's and obtained a considerable number of orders from the North. But the company failed because shipping costs made consolidation of its Northern market difficult and because few orders were forthcoming from south of Alexandria.[5] Similarly, the paper industry in South Carolina

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[1]William Gregg, Essays on Domestic Industry (first published in 1845; Graniteville, S.C.: Graniteville Co., 1941), p. 4; cf., De Bow's Review, XXIX (Oct., 1860), 496f; Broadus Mitchell, William Gregg: Factory Master of the Old South (Chapel Hill: University of North Carolina Press, 1928), p. 106.

[2]Lippincott, Manufactures in the Ohio Valley, p. 64

[3]See the advertisement on the back cover of The Southern Planter (Richmond), III (April, 1843).

[4]Lester J. Cappon, "Trend of the Southern Iron Industry under the Plantation System," Journal of Economic and Business History, II (Feb., 1930), 361, 371, 376.

[5]Carol H. Quenzel, "The Manufacture of Locomotives and Cars in Alexandria in the 1850's," Virginia Magazine of History & Biography, LXII (April, 1954), 182ff.

did well until the 1850's when Northern orders dropped and no Southern replacements appeared.[1] Southern manufactures, at a disadvantage in their dealings with the North, sometimes obtained orders by offering dangerously liberal credits, which often proved to be ruinous to creditors who were generally short of working capital.[2]

In some cases a stable market was secured outside the slave states. The flour milling industry flourished in Richmond and Baltimore largely on orders from Brazil. This type of market, however, was limited, and in fact the flour milling industry of the Upper South declined after 1855, when Brazilian orders fell off. Baltimore and Richmond alone could supply the whole South American market, so the possibilities for expansion were almost negligible.[3]

The slave South could not keep abreast of the North in industrial output because, whatever advantages and disadvantages it may have had, it could not elicit a domestic market on which to build.

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[1]Ernest M. Lander, Jr., "Paper Manufacturing in South Carolina before the Civil War," North Carolina Historical Review, XXIX (April, 1952), 225ff.

[2]Note for example the experience of the Salem Manufacturing Company: see Adelaide L. Fries, "One Hundred Years of Textiles in Salem," North Carolina Historical Review, XXVII (Jan., 1950), 13.

[3]Charles Byron Kuhlmann, The Development of the Flour-Milling Industry in the United States (Boston: Houghton Mifflin Co., 1929), pp. 40f; cf., De Bow, Industrial Resources, III (463ff.

The Countryside as a Source of Capital

American industrialism required successful farmers to provide it with a domestic market, but it also drew upon the countryside for contributions to capital formation. In the United States, as early as the colonial period, the wealthy classes contributed proportionately less to incipient manufactures than mechanics, artisans, and other small men of means in the villages. The funds came primarily from the profits of small enterprises, and rarely before the Civil War did manufacturers turn to the investment market for funds.

But the original enterprises had to acquire capital from some place, and the farms provided one of several important sources. As farmers prospered they increasingly required the services of skilled artisans, and this demand for goods and services encouraged the growth of villages with carpenters, bricklayers, stone-masons, tailors, and others.[1] Thus, the self-developing force of industrial capital was given the impetus that it needed, for it was from these small beginnings that a considerable portion of American manufacturing establishments arose.

Once launched, industrial enterprises in New England received steady, though no doubt small, infusions of capital

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[1]See the excellent discussion of the relationship between the prosperity of agriculture and the demand for artisan labor in Beverley W. Bond, Jr., The Civilization of the Old Northwest. A Study in Political, Social, and Economic Development, 1788-1812 (New York: The Macmillan Co., 1934), pp. 415ff.

from farmers willing to invest their surplus funds. Profits from farming helped to build the early wool industry, for example, and thrifty farmers preferred to lend money to cotton manufacturers rather than to trust it to banks.[1] On the other hand, a decline in farm profits caused a shift of investment from agriculture to industry.

The failure of the slave economy to produce a well-to-do middle class made it impossible for the South to compensate for its lack of commercial revenue by increased agricultural profits and simultaneously prevented a shift of capital from the unprofitable sections of agriculture to industry. Consequently, lack of capital was most frequently singled out by contemporary Southerners as the reason for the backwardness of their industry. In spite of the limited nature of its home market, the South might have improved its industrial position and might possibly have pushed out Northern producers had it had the capital to do so. Instead, we find such absurd situations as the closing of a Southern cotton factory "for want of cotton."[2] But the planters' distrust of industrialization

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[1]Arthur H. Cole, The American Wool Manufacture (2 Vols.; Cambridge: Harvard University Press, 1926), I, 227; and Bro. Joseph Brennan, Social Conditions in Industrial Rhode Island: 1820-1860 (Washington: Catholic University of America, 1940), p. 18. Brother Brennan notes that farmers were intensely hostile toward the commercial interests but sympathetic toward the manufacturers.

[2]Letter from J. A. L. Lee to Farish Carter, Oct. 14,1852 in the Carter Papers, Duke University. The factory was the Coweta Falls establishment at Columbus. Other opportunities were not grasped. For example, when copper prices rose in the 1850's considerable interest was aroused in South Carolina. But after discussions of tapping the state's vein the matter was dropped. South Carolina Mineralogical, Geological, and Agricultural Survey of 1856. Report of Oscar M. Lieber, pp. 77ff, 135f.

and urbanization and their interest in developing only those industries that would serve the plantation market prevented large-scale investments. If they had had the means and the desire to enter manufacturing they might at least have captured the limited domestic market, but their economic position, political interests, and philosophy made even that difficult.

The Urban Market for Agricultural Commodities

Although agricultural development is a necessary condition for industrialization, once manufacturing takes hold and urban centers arise, the market for farm produce expands widely and rapidly. Well before 1840 iron manufacturing establishments in the Northwest provided local farmers with excellent markets for grain, vegetables, molasses, work animals, and meat, and in Missouri lead mining centers gave an impetus to the diversification of agriculture. The rise of local industry in the free states after the War of 1812 "did what all the exhortations of agricultural societies and publicists had failed to do": it produced a market for diversified agriculture.[1]

To a small extent the South also benefited in this way. By 1840 the tobacco manufacturing industry in Virginia began to absorb more tobacco than was being exported, and the industrial centers provided a market for local grains and

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[1]Percy Wells Bidwell and John I. Falconer, History of Agriculture in the Northern United States, 1620-1860 (New York: Peter Smith, 1941), p. 198.

foodstuffs. Since the South was unable to industrialize, few urban centers arose to provide a market for farmers and planters. Apart from Baltimore and New Orleans the slave states had no large cities, and few even reached the size of 15,000 people.

In the 1850's American families probably spent at least forty per cent of their incomes on food, andthe importance of the urban market may be judged accordingly.[1] Although Northern agriculture was greatly stimulated by the need for grain, no more than five per cent was exported during any year of the antebellum period.[2] Whereas cotton producers had to depend on Europe to absorb about seventy-five per cent of their crop in 1860, the grain growers of the free states found their market at home. The continued reliance of American producers on the home market has continued into the twentieth century. In general, the United States has always been its own best market.

Farmers in some parts of the South took advantage of Northern markets: West Virginians, for example, sold both agricultural produce and manufactures in Cincinnati and

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[1]The estimate, which is probably too low, is that of Edgar W. Martin, The Standard of Living in 1860 (Chicago: University of Chicago Press, 1942), pp. 11f.

[2]Herbert J. Wunderlich, "Foreign Grain Trade of the United States, 1835-1860," Iowa Journal of History and Politics, XXXIII (Jan., 1935), 27.

Philadelphia, as well as in smaller Southern cities. Before long West Virginia was engaged in a thriving two-way trade with the free states, to the political detriment of the South.[1]

In his second inaugural address, delivered in 1846, Governor Albert Gallatin Brown of Mississippi warned the South of an impending war with England. The Eastern manufacturers wanted it, he said, and the Western farmers would support it because war would lead to industrial expansion and create new markets for Western produce; only the South, he added, had nothing to gain.[2] These remarks by the secessionist spokesman for Mississippi's yeomanry reveal an admirable insight into the relationship between capitalist agriculture and industry. But Brown never showed a comparable awareness of the damage done to Southern agriculture by the slave system. So long as slavery persisted, the conditions necessary for a general agrarian reform--growth of a home market, rural capital accumulation, and the rise of urban centers--were kept from maturing.

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[1]See the complaints voiced in the Report of the Virginia Commercial Convention: De Bow, Industrial Resources, III, 465.

[2]Speeches, Messages and Other Writings, ed. M. W. Cluskey (Philadelphia: Jas. B. Smith & Co., 1859), p. 90.

CHAPTER I

THE PRODUCTIVITY OF LABOR - I

The Inefficiency of the Labor Force

The greatest weakness of the slave economy was the low productivity of labor, which had its most direct expression in the slaves' careless and wasteful work habits. Low productivity had less direct manifestations in the limitations imposed upon technological development and the division of labor. Slavery withheld incentives and forced the worker to give his labor grudgingly and badly; the poor habits of work retarded those social and economic advances that could have raised the general level of productivity.

In the opinion of Lewis C. Gray the essential question is not whether or not the South would have been better off with free white labor, but rather whether or not the Negro could have been more efficiently employed once he was brought here.[1] Gray, attempting to prove that slave labor was more efficient than free, asserts that slaves drove the white farmers out of the South during the colonial period and concludes

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[1] "Economic Efficiency and Competitive Advantages of Slavery under the Plantation System," Agricultural History, IV (April 1930), 33; also, History of Agriculture in the Southern United States to 1860 (2 Vols.; New York: Peter Smith, 1941), Vol. I, Chapter XX.

that so long as Negro labor had to be used at all, slavery provided the best means for applying it to the fullest advantage.

Since the South initially lacked an adequate labor supply, Gray's argument says little more than that slave labor was better than none. The free labor that slavery is said to have driven out is largely a fiction. The inability of white farmers to compete with slave gangs does not prove that free labor was less efficient than slave; it rather may suggest that large-scale organization under certain circumstances is more efficient than small, and that the successful small farmer could not draw upon a reserve of wate labor and therefore had to acquire slaves.

John Elliott Cairnes made the much assailed assertion that the slave was so defective in versatility that his labor could be exploited profitably only if he were taught one task and kept at it.[1] If we allow for some exaggeration, Cairnes thesis is sound. Most competent observers agreed that the slaves worked badly, without interest or effort.[2] Edmund Ruffin did

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[1]The Slave Power, Its Character, Career, and Probable Designs: Being an Attempt to Explain the Real Issues in the American Contest (London: Parker Son, and Brown, 1863), p. 46.

[2]For an introduction to the literature see Ulrich Bonnell Phillips, American Negro Slavery. A Survey of the Supply, Employment and Control of Negro Labor as Determined by the Plantation Regime (New York: Peter Smith, 1952), Chapter XVIII; cf., Frederick Law Olmsted, The Cotton Kingdom: A Traveller's Observations on Cotton and Slavery in the American Slave States (New York: Mason Brothers, 1861), I, 11, 380; J. J. Ampère, Promenade en Amérique: États-Unis, Cuba, Mexique (2 vols;

take exception and suggest that, on the contrary, the lower cost of maintenance made slave labor the more productive in the long run. A careful reading of Ruffin's pamphlet shows that his reasoning was faulty and that he was uncharacteristically careless, for his position rests on the assumption that whereas the slave's labor is continuous, that of the free laborer is not.[1] According to Ruffin, when a free laborer receives pay for three days' labor he will make it do for a week.[1] But few could or can support their families on three days' wages; and so long as a substitute can be found such inactivity is of no account to his employer, for he will still have efficient men on the job. In more sober moments Ruffin came closer to the truth. On one occasion he pointed out that, although at one time cheap, fertile land required little skill, the exhaustion of the soil created conditions requiring the intelligent participation of the labor force.[2] Ruffin neither developed his idea nor drew the relevant conclusions. Certainly,

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nouv. ed., rev.; Paris: Michel Levy freres, 1860), II, 114; Sir Charles Lyell, A Second Visit to the United States of North America (2 Vols.; London: J. Murray, 1849), II, 84; John S. C. Abbott, South and North. Or, Impressions Received During a Trip to Cuba and the South (New York: Abbey and Abbott, 1860), pp. 178ff; Frank Wesley Pitman, "Slavery in the British West India Plantations in the Eighteenth Century," Journal of Negro History, XI (Oct., 1926), 587; Adam Hodgson, A Letter to M.Jean-Baptiste Say on the Comparative Expense of Free and Slave Labour (2nd ed.; Liverpool: Hatchard & Son, 1823).

[1]The Political Economy of Slavery; Or, the Institution Considered in Regard to Its Influence on Public Wealth and the General Welfare (Washington: Lemuel Towers, 1857), p. 4; for similar ideas see Thomas L. Clingman, Selections from the Speeches and Writings of Hon. Thomas L. Clingman, of North Carolina, with Additions and Explanatory Notes (Raleigh: John Nichols, Book and Job Printer, 1877), p. 349.

[2]The Farmers' Register, III, no. 2 (1836), 748f.

the systematic education and training of the slaves would have been politically dangerous, and the utilization of skilled workers would have necessitated a smaller labor force. In Chapter VI I shall try to show that the latter contained serious drawbacks that greatly restricted the possibility of its employment. Other Southerners, although agreeing with Ruffin's more realistic judgment that slaves were less productive than free men, often dropped the matter with the observation that the difference only illustrated how well Negroes were treated.[1]

In addition to working below their capabilities[2] the slaves found their capacity limited by poor health. The distinguished United Nations nutrition expert, Josué de Castro, has analyzed the type of food fed to the slaves and concluded that, although the diet was bulky, it was bad. The slave's food gave him the appearance of good health and kept him going in the monotonous routine of field work, but it undermined his strength.[3] Richard H. Shryock, a foremost historian of medicine,

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[1]See e.g. The Southern Quarterly Review, XIX (Jan.,1851), 221. Ruffin sometimes argued in this manner.

[2]Cf., Charles Sackett Sydnor, Slavery in Mississippi (New York: D. Appleton-Century Co., 1933), pp. 16, 86ff; E. A. Davis (ed.), Plantation Life in the Florida Parishes of Louisiana: The Diary of B. H. Barrow ("Columbia University Studies in the History of American Agriculture," IX; New York, 1943), pp. 431ff.

[3]The Geography of Hunger (Boston: Little, Brown and Co., 1952), Chapter III, esp. pp. 127-38. John Hebron Moore's recent study confirms the general opinion that antebellum Mississippi probably never grew enough fruits and vegetables to provide a balanced diet. See Agriculture in Ante-Bellum Mississippi (New York: Bookman Associates, 1958), p. 61. Poor housing conditions also contributed to the weakened condition of the slaves. See De Bow's Review, IX (Sept., 1850), 325.

suggests that the slave's diet may well have produced a form of malnutrition not yet identified.[1]

A large part of the blame for the poor performance of the slaves accrued to the likeliest scapegoat, the overseer, who was charged with being too harsh, with being too permissive, with being indifferent to everything but the cotton crop on which his salary depended, and so forth. From the time of John Taylor of Caroline the planters, and especially the reformers berated the overseer and held him responsible for most of the ills of the system.[2] Some put the matter differently and explained that the planter was the best manager for his own estate and should attend to it himself.[3] On the other hand, some overseers did excellent work, and the case against the group should not lead us to forget the many admirable exceptions.[4] But on the whole the overseers were poor

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[1]Richard H. Shryock, "Medical Practice in the Old South," South Atlantic Quarterly, XXIX (April, 1930), 160f.; also, Felice Swados, "Negro Health on the Ante-Bellum Plantations," Bulletin of the History of Medicine, X (Oct., 1941), 460f.

[2]John Taylor, Arator; Being a Series of Agricultural Essays, Practical and Political (end ed., rev. & enl.; Georgetown: J. M. Carter, 1814), pp. 68ff; Carolina Planter, I (1844-45), 25; "Address of J. L. Bridges of Edgecomb" in the North Carolina State Agricultural Society, Transactions, 1857 (Raleigh,1858), p. 17.

[3]The American Farmer, XIII (April 22, July 22, 1831), 48, 152. Cf., Avery O. Craven, Edmund Ruffin, Southerner (New York: D. Appleton and Co., 1932), p. 19; Ulrich Bonnell Phillips, Life and Labor in the Old South (Boston: Little, Brown and Co., 1948) Chapter XV; and John Spencer Bassett (ed.), The Southern Plantation Overseer as Revealed in His Letters ("Smith College Fiftieth Anniversary Publications"; Northampton, Mass., 1925).

[4]See e.g. The Plantation Book in the John C. Jenkins and Family Papers, 1837-58: typescript in the Louisiana State

administrators, and when we consider Arthur C. Cole's estimate that two million slaves--a large majority of those in agriculture--worked under them, the seriousness of the problem is apparent.[1]

The low productivity of the slave was the direct result of lack of incentive, of lack of training, of the weaknesses of the overseer system, and of various other familiar factors. To avoid these difficulties an occasional slaveowner would grant his laborers special privileges. C. C. Baldwin of Rockbridge, Virginia, explained the prosperity of his modest sixty-acre farm by saying that his eight slaves had "no domestic restraints." They ate as much as they pleased, had keys to all locked doors, and lived well.[2] In short, they were half-free. But this was a solution that most slaveholders surely found unacceptable.

Only a few of the many other varied and complex effects of slavery on productivity can be mentioned here. Critics of slavery have generally assumed that the system created a contempt for manual labor, whereas others have countered with the assertion that the yeomen were held in high esteem. I am not

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University Library; microfilm copy at Columbia University. James C. Bonner, "The Plantation Overseer and Southern Nationalism as Revealed in the Career of Garland D. Harmon," Agricultural History, XIX (Jan., 1945), 1-11; J. G. de Roulhac Hamilton (ed.), The Papers of Thomas Ruffin (4 Vols.; "Publications of the North Carolina Historical Commission"; Raleigh, 1918-20); see the letters of William and James Ruffin, Feb. 5, 19, 1831.

[1] The Irrepressible Conflict, 1850-65, Vol. VII of The History of American Life, ed. Arthur M. Schlesinger and Dixon Ryan Fox (12 Vols.; New York: The Macmillan Co., 1934), p. 41

[2] The Southern Planter, XII (Aug., 1852), 243.

sure that there was not in fact considerable contempt for the working farmers despite the political orations on the dignity and independence of the yeomanry. Even if we assume that the protestations of respect were genuine, they do not prove that which they are alleged to. Karl Polanyi, in a notable essay on Aristotle as an economist, suggests that although he did not hold manual labor degrading, he abhorred the idea of working for another. Polanyi remarks that in this attitude Aristotle represented Greek slaveholding society.[1] One suspects that he spoke for slaveholding societies in general.

Dr. Samuel Cartwright, an outspoken and socially minded Southern physician, referred contemptuously to those whites "who make negroes of themselves" in the cotton and sugar fields.[2] The prevalence of such an attitude so demoralized white labor that planters often preferred to hire slaves because they were better workers than available white men.[3] At its worst, the contempt for hired labor extended to all manual labor, which according to one editor, was considered "menial and revolting."[4] To work hard, in many places, was "to work like

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[1]"Aristotle Discovers the Economy," Chapter V of Trade and Market in the Early Empires: Economics in History and Theory, ed. Karl Polanyi, Conrad M. Arensberg, Harry W. Pearson (Glencoe, Ill.: The Free Press and the Falcon's Wing Press, 1957), p.77.

[2]De Bow, Industrial Resources, III, 62.

[3]See e.g. Cornelius O. Cathey, Agricultural Developments in North Carolina, 1783-1860 ("The James Sprunt Studies in History and Political Science," XXXVIII; Chapel Hill: University of North Carolina Press, 1958), pp. 54f.

[4]The Southern Cultivator, V (Jan., 1847), 141.

a nigger."[1] The prevailing attitude toward labor undermined the productivity of those free workers who might have made important contributions at regular intervals. Thus, it lowered productivity generally and helped weaken the entire economy.

As field workers slaves may not necessarily have been poor. Quite possibly they picked as much cotton as free men might have done under similar conditions. Measurement of their productivity is virtually impossible, and there is room for disagreement on this matter. But even if an affirmative conclusion is reached, the maintenance of a certain standard of work in the cotton fields was obtained at the expense of versatility on the plantations and by sacrificing an adequate social division of labor in society as a whole.

Negro Labor and Slave Labor

The Negro slave worked badly, according to some leading scholars, not because he was a slave, but because he was a Negro. This argument has taken two forms: (1) the Negro has certain unfortunate biological or racial traits such as a migratory instinct or an easygoing indolence;[2] and (2) the Negro came from a lower culture in Africa and had to be

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[1]Paul H. Buck, "Poor Whites in the Ante-Bellum South," American Historical Review, XXXI (Oct., 1925), 48.

[2]Alfred Holt Stone, Studies in the American Race Problem (New York: Doubleday, Page & Co., 1908), pp. 145, 790-93. Stone offers no evidence to support his generalizations about racial characteristics; geneticists and anthropologists had not done much useful work on the problem in 1908. His views are therefore merely observations and common-sense reasoning. Undoubtedly, they are the products of an able, conscientious, and honest scholar; but they are still a poor substitute for scientific evidence.

disciplined to labor.[1] I do not think that the first argument requires refutation; surely, the findings of anthropology and genetics are sufficiently well known to place the burden of proof on those who would defend this thesis.[2] The second proposition, however, raises serious questions of an economic as well as social nature. If the assertion is sound, then slavery was the only way in which the South could have used black labor, and bondage taught the Negroes to work systematically in an agricultural economy.

Phillips defends slavery as a historically progressive institution that assembled workers in a more productive pattern than had existed previously. He then implies that enslavement in America civilized the Negro and disciplined him to labor.[3] Probably, ancient slavery did play the role Phillips suggests; but to accept that generalization by no means commits one to the corollary that he draws for American Negro slavery. He gives no concrete evidence but refers to the views of the sociologist, Gabriel Tarde, who, we are told, "elaborated" T. R. Dew's idea that enslavement domesticated men much as animals had been domesticated previously. An examination of

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[1]Gray, History of Agriculture, I, 462ff; Phillips, American Negro Slavery, pp. 278ff, 344; Life and Labor, pp. 188f; Avery O. Craven, Soil Exhaustion as a Factor in the Agricultural History of Maryland and Virginia, 1606-1860 ("University of Illinois Studies in the Social Sciences, XIII, no. 1; Urbana, 1925), p.163.

[2]For an able summary--a bit outdated but still useful--of the scientific evidence on race see Otto Klineberg, Race Differences (New York: Harper & Brothers, 1935). Klineberg has put together the most important data uncovered by anthropoligists, geneticists, and psychologists. More recent material has not challenged the general conclusions of the book.

[3]Phillips, American Negro Slavery, pp. 278f, 344.

Tarde's discussion shows that it offers little to support Phillips' position. The idea of reducing men to slavery, Tarde suggests, probably arose after the successful domestication of animals, and in both cases the subjected were tamed and transformed into beasts of burden and made more productive for others.

Tarde's ideas should be considered within the context of his concept of imitation, according to which an enslaved people learns from its conquerors, whereas the latter do not deign to absorb the ways of their victims.[1] This idea is in itself dubious, but if it has any relevance to the problem at hand it merely suggests that the Negro in America was confronted with a higher culture. I doubt that many, outside the ranks of the most dogmatic of cultural relativists, would argue with such a generalization. But on the central question of labor productivity Tarde's thesis is valid only if we assume that the Negro had to be brought to America to acquire the habit of systematic agricultural labor. Phillips never puts things quite that baldly, but there can be little doubt that his analysis rests on this proposition.

Phillips' interpretation of African life has had a profound effect upon students of American Negro slavery. Unfortunately, his ideas depend upon the now discredited work of Joseph Alexander Tillinghast and Jerome Dowd. According to

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[1]Gabriel Tarde, The Laws of Imitation, trans. Elsie Clews Parsons (New York: Henry Holt and Co., 1903), pp. 278f, 221, and passim.

Tillinghast, African Negroes were "savages," subject to the unfathomable "mysterious force" of heredity. The West African population before the European conquest supposedly had no cereals and survived on a bare subsistence of vegetable roots. Tillinghast, Dowd, and others whose work Phillips draws upon have applied untenable methods, made dubious assumptions, and produced work that anthropologists today consider of little or no value.[1] One might be inclined to forgive Phillips and those who have followed him for trusting the judgment of anthropologists, were it not that the arguments contain hopeless contradictions and were it not that even during the nineteenth century some scholars like Chernyshevsky were warning that anthropologists and social scientists were often victims of the racial prejudices that so permeated European and American society. Moreover, Phillips republished his books in the 1930's, and Craven and Gray wrote during the Twenties and Thirties, when impressive new work on African society was available.

The first contradiction in the Tillinghast-Phillips interpretation is the fact of importation. If the African had not been disciplined to agricultural labor, why was he brought here at all? The "domestication" of savages is no easy matter, and

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[1]Joseph Alexander Tillinghast, The Negro in Africa and America ("Publications of the American Economic Association," 3rd Series, III, no. 2; New York: The Macmillan Co., 1902), pp. 2f, 18f. Cf., Jerome Dowd, The Negro Races (2 Vols.; New York: The Macmillan Co., 1907), Vol. I, passim. For a thorough and convincing critique of these works see Melville J. Herskovits, The Myth of the Negro Past (New York: Harper & Brothers, 1941) Chapters I, II, esp. pp. 55-61.

only a small percentage of those enslaved can be expected to survive. Negroes were first brought to the Western Hemisphere because they were accustomed to agricultural labor, whereas many of the Indians previously enslaved were not and tended to die under the pressure.[1] Furthermore, since the Negroes brought from Africa came from well established agricultural communities one or two generations should have sufficed to assimilate them into American culture.[2] Any other conclusion would, I think, have to rest on unscientific biological=racist assumptions.

Secondly, in order to show that Africans were backward Tillinghast and Phillips say that slavery was common among them. And so it was! And there is no better proof that African society had "domesticated" its population before the white man volunteered to assume responsibility . West African peoples like the Ashanti and Dahomey had elaborate military structures, legal systems, and commercial relations.[3] A re-examination of the economic structure of West Africa and of its implications for American slavery is therefore in order.

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[1]The experience of the Indians within that which is now the United States is well known. Even more impressive is the evidence from Latin America, where a sustained effort was made to enslave the Indians; it was successful only where the Indians had previously developed an agricultural community of an advanced type. Otherwise, the experiences paralleled that of Bahia, Brazil, where 40,000 Indians were enslaved in 1563, but only about 3,000 of these survived the next twenty years. See João Dornas Filho, A Escravadão no Brasil (Rio de Janeiro: Civilização brasiliera, 1939), p. 40.

[2]As has been pointed out by Kenneth M. Stampp, The Peculiar Institution, Slavery in the Ante-Bellum South (New York: Alfred A. Knopf, 1956), pp. 13f.

[3]C. G. Seligman, Races of Africa (3rd ed.; London:Oxford University Press, 1957), p. 58.

There are other objections to Phillips' approach. He assumes that the Negro, once brought here, retained many African traits, which hampered his productivity. Indeed so prominent an anthropologist as Melville Herskovits attempts to prove that the Negro has preserved a large part of his African heritage to the present day.[1] This contention has come under heavy, and I think successful, fire from E. Franklin Frazier, who has shown that Herskovits' evidence illuminates Brazilian rather than North American experience. American Negroes were contemptuous of newly imported Africans and set out to "Americanize" them forthwith. As Frazier says, the array of isolated instances of African survivals only indicates how thoroughly American slavery wiped out African social organization, habits, and ideas.[2] If we are to avoid baseless racist and mystical assumptions we shall have to know just which traits the Negro brought from Africa and kept for generations and just how they affected his productivity. No such data has been forthcoming, and we must conclude that the assertion of special traits (as used by Phillips, not Herskovits) is nothing more than the original proposition that the Negro was not disciplined to labor until brought here.

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[1]Herskovits, Myth of the Negro Past, passim. But Herskovits is interested in different problems than Phillips and does not share his bias or his conclusions.

[2]E. Franklin Frazier, The Negro in the United States (New York: The Macmillan Co., 1949), pp. 6-11. For a brief statement of Herskovits position see Myth of the Negro Past, p. 16.

Furthermore, that which two scholars have called "the day to day resistance to slavery" is assumed by Phillips to have been simple negligence and criminal behavior. Raymond and Alice Bauer have summarized the evidence indicating that slaves were often aware of their economic value and engaged in various forms of sabotage, including deliberate wastefulness, slowdowns, feigned illnesses, self-inflicted injuries, and of course, the well known abuse of tools and livestock.[1] Dr. William A. Booth of Lafourche Parish, Louisiana, wrote during the cholera epidemic of 1849 that the Negroes did not care whether they lived or died. "All Negroes are fatalists," he said, and "the worse /the cholera/ rages, the less they regard it."[2] The doctor's conclusions are questionable, but his report is illuminating.

Of the Negroes who came direct from Africa there is little doubt that most were from the West Coast. Herskovits, the foremost authority on the Dahomey, says that those famous slave-raiders rarely went more than 200 miles inland and that most of their victims lived much closer to the coast.[3] There is no longer any doubt that the peoples of West Africa, especially the Dahomey, Ashanti, Yoruba, and other Gold Coast and Nigerian peoples, had mature systems of agriculture. The Dahomey even

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[1] "Day to Day Resistance to Slavery," Journal of Negro History, XXVII (Oct., 1942), 401f, 407; see also Herskovits, Myth of the Negro Past, pp. 99-105.

[2] E. D. Fenner (ed.), Southern Medical Reports (2 Vols.; New Orleans: B. M. Norman, 1849-50), I, 215.

[3] The Myth of the Negro Past, pp. 61-62.

had a plantation system, and all these people had significant division of labor. Trade was extensive and carefully regulated; craft guilds were common; and a definite class structure had appeared.[1] The Yoruba, the Nupe, and the Fulani had absorbed Moslem culture, and when the Fulani overran northern Nigeria, they carried Moslem scholars with them. Before the Fulani conquest the Nupe of Nigeria had developed an urban civilization partly under Moslem influence.[2]

The development of mining provides some clues to the economic level of West Africa. Gold and iron mining flourished at least as early as the fourteenth century, and the Arabs drew upon the area for part of their gold supply. The tales of wonderful metals and metal work attracted the Portuguese and led to their initial explorations. The peoples of Ghana and Nigeria used iron hoes and other agricultural implements, and the Yoruba of southern Nigeria enjoyed a reputation for fine work in copper and tin.[3]

In contrast to Tillinghast's picture of indolent, berry-picking natives, the proverbs, aphorisms, and customs of the

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[1]Seligman, pp. 51-54; Melville J. Herskovits, Economic Anthropology. A Study in Comparative Economics (New York: Alfred A. Knopf, 1952) esp. Chapters VI and VII. On trade regulation see Rosemary Arnold, "A Port of Trade: Whydah on the Guinea Coast," Chapter VIII of Polanyi, Arensberg, and Pearson.

[2]S. F. Nadel, A Black Byzantium. The Kingdom of the Nupe in Nigeria (London: Published for the International Institute of African Languages and Culture by the Oxford University Press, 1946), pp. 76-85.

[3]Walter Cline, Mining and Metallurgy in Negro Africa (Menasha: George Banta Publishing Co., 1937), pp. 11-17, 78-80.

West African peoples indicate that the population was accustomed to hard work. Sayings included: "Poverty is the elder of laziness"; "He who stays in bed when he is able to work will have to get up when he cannot"; and "Dust on the feet is better than dust on the behind."[1] Prestige accrued to him who worked hard, fast, and well and was therefore a powerful motivating force.

These facts, now taken for granted by anthropologists, are not so surprising when one considers that even in the most primitive societies there is hard work to do. One works, as Herskovits says, because everyone works, because one must work to live, and because it is the tradition to work. The Dahomey, who were among the more advanced of the African peoples, had a reputation for industriousness, held hard work praiseworthy, and practiced crop rotation and agricultural diversification.[2]

The most puzzling aspect of Phillips' position is his awareness of slavery among the West Africans. He remarks that slavery was "generally prevalent" and adds that, according to Mungo Park, the slaves in the Niger Valley outnumbered the free men by three to one at the end of the eighteenth century.[3] Phillips never seems to realize that the existence of African

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[1]Herskovits, Economic Anthropology, p. 118.

[2]Melville J. Herskovits, Dahomey, An Ancient West African Kingdom (2 Vols.; New York: J. J. Augustin, 1938), I, 33f.

[3]Phillips, American Negro Slavery, pp. 6, 27; cf., Life and Labor, pp. 188ff.

slavery shatters his insistence that the Negroes were not habituated to agricultural labor. In one or two instances he seems to say that labor discipline had been acquired in Africa, but he never reconciles this observation with his general view.[1] Thus, although Phillips is more cautious than Craven and Gray in his use of the idea of the undisciplined Negro laborer, he is also less clear and consistent. Tillinghast and Dowd, for their part, set the bad example, for in the same books in which they assure us that the Negroes were the laziest of food gatherers, they announce that African society had slaves, debt peons, and private property.[2]

The Dahomey had large crown-owned plantations worked by slave gangs under the direction of overseers whose business it was to maximize output. Debt peonage was also a well established institution.[3] Among the Nupe slaves were widely used in agriculture and were said to have numbered thousands at the time of the British conquest. The more primitive tribes of northern Nigeria had been conquered and enslaved by the Nupe before the beginning of the nineteenth century.[4] The Ashanti had an elaborate system of family landownership and imposed a light corvée upon those of low status. The tribes of the Ashanti hinterland practiced slavery, debt peonage, and systematic agriculture.

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[1]Phillips, American Negro Slavery, pp. 45, 344.

[2]Tillinghast, pp. 25, 38; Dowd, I, 91-99.

[3]Herskovits, Dahomey, I, 82f, 99, 102; II, 97.

[4]Nadel, pp. 85, 196ff.

slavery, although to what extent we do not know; and many of the peoples of the Congo and of Angola also held slaves and other types of forced laborers in an agrarian economy.[1]

The African economy was nevertheless lower than that of the European world, and we may assume that the Negro's productivity was well below that of the white man. Therefore, emancipation would not suddenly have accomplished the miracle of raising the Negro's productivity to the level of, say, the Northern white farmer. But, since the Negro was used to agricultural work the task of raising his productivity should not have been difficult. In a friendly society, with adequate incentives, the Negro laborer's efficiency should have improved quickly. There is no scientific basis for any other assumption.

That the Negro worked hard in African agriculture does not prove that his economic faculties did not decline once he was separated from his homeland. Pitman says that Negroes taken to the West Indies knew how to tend their own gardens and care for livestock but were totally unprepared for the work expected of them in the sugar fields.[2] It is doubtful if any human being can be expected to be prepared to be driven in gangs under those conditions. Yet we know that among some of the Africans

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[1] Ibid., pp. 145-49; /H. P. Smit/, The Native Tribes of South West Africa (Cape Town: Cape Times Ltd., 1928), pp. 33f, 41; L. Marquard and T. L. Standing, The Southern Bantu (London: Oxford University Press, 1939), p. 50.

[2] Pitman, p. 594.

even the plantation system was known. Moreover, Herskovits has shown that various forms of collective labor were common in Africa and that American slavery represented a distorted continuation of some familiar patterns.[1]

That which was unfamiliar was the brutality of American slavery. Under its mildest forms Southern slavery had to be far harsher than its African counterpart. Except among the Dahomey, African slavery was patriarchal. Even slaves from a conquered tribe were sometimes assimilated into the new culture. A slave might buy his freedom and become a free man in his new homeland, and of course there was little racial antipathy. In the South the Negro received a series of hard blows. He worked under harsh conditions and was torn from his culture, family life, and system of values. And he found himself in a society that offered him no adequate substitutes. If the Negro was "culturally" unattuned to hard work, then this condition reflected not his African background but a deterioration from it.[2]

To say that the Negro suffered from a cultural dislocation that may have affected his economic propensities does not imply that, after all, the Negro slave was a poor worker because he

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[1]Herskovits, Myth of the Negro Past, p. 161.

[2]Consider the analagous situation of motherhood. Evidence indicates that American Negro slave mothers often did not care to raise children, did not take care of them, and in extreme cases killed them. Some observers attribute this phenomenon to racial characteristics. But the Bauers have noted that this indifference to children did not exist among the West Africans. They suggest, plausibly, that the slave mother often had no interest in children because she could not consider them her own. See Bauer and Bauer, pp. 451ff.

was a Negro. Enslavement itself, especially the enslavement of a people regarded as racially inferior and unassimilable, produces such dislocation. Once slavery passes from its mild, patriarchal stage, the laborer is regarded less and less as a human being; increasingly he is treated as a beast of burden, particularly when he is a foreigner who is viewed as biologically inferior. Even in societies where bondage is initially patriarchal, slavery facilitates the growth of large-scale production, which corrodes the older comradeship between master and servant. The existence of slavery lays the basis for such a development, especially where markets are opened and the institutional barriers to commercialization are removed. Such a course may not be inevitable, but slavery does establish a powerful tendency toward large-scale exploitation of men and resources. The rise of the plantation system in Dahomey is an illustration, although the economic structure was unusual and cannot be regarded as a mature, commercially oriented slave system. Thus slavery, no matter how patriarchal at first, will, if it is permitted to grow naturally, break its modest bounds and produce an economy that will rip the laborer from his culture and yet not provide him with a genuine replacement.

Even if we view the problem of the Old South as the presence of a culturally dislocated labor force, we should not be justified in asserting that the difficulty was with the Negro as a Negro. Rather, the central cause of the process of dislocation and the deterioration of his work habits was slavery itself. Slavery, once it becomes a large-scale enterprise,

The Ashanti defeated one of these tribes, the Dagomba, at the end of the seventeenth century and obligated it to produce 2,000 slaves annually.[1] The Ibo of southeastern Nigeria, slavetraders as well as a source of slaves, produced several important crops with servile labor.[2] During the eighteenth and early nineteenth centuries the great West African peoples--the Yoruba, Dahomey, and Fulani--fought continually for control of southwestern Nigeria, and each in turn enslaved thousands during the wars.[3]

The absence of slavery among some of the coastal peoples does not mean that agriculture was undeveloped or that hard work was missing. For instance, the Bobo, who were probably an important source of slaves for the United States, had a reputation for being conscientious agricultural laborers, although they refused to hold men in bondage.[4]

Even if we assume that the interior yielded some of the slaves who reached the American market there is no reason to think that these noncoastal peoples lacked agriculture or shirked hard work. The Bantu of Southwestern Africa practiced

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[1]R. S. Rattray, Ashanti (Oxford: At the Clarendon Press, 1923), 223-27; and The Tribes of the Ashanti Hinterland (2 Vols.; Oxford: At the Clarendon Press, 1932), I, 261-68; II, 348ff, 402f, 564.

[2]C. K. Meek, Law and Authority in a Nigerian Tribe (London: Oxford University Press, 1937), pp. 5-8, 102f, 133f, 204.

[3]Daryll Forde, The Yoruba-Speaking Peoples of South-Western Nigeria (London: International African Institute, 1951), p. 4.

[4]H. J. Nieboer, Slavery as an Industrial System. Ethnological Researches (The Hague: Martinus Nijhoff, 1900), p. 154. Phillips read and referred to Nieboer's book.

reverses its earlier contribution to the productivity of labor and destroys the culture, dignity, efficiency, and in extreme cases, the humanity of the enslaved worker.

CHAPTER II

THE PRODUCTIVITY OF LABOR - II

Slavery and Technology

Few specialists doubt that social structure has been an important factor in the history of science and technology; and no one would deny that capitalism has introduced the greatest advances in these fields. Capitalism has provided several conditions for technological progress: a strongly competitive economy; an intelligent, free, skilled labor force capable of using machinery and improving upon it; and an immense accumulation of capital for research, invention, and innovation. The entrepreneur has to reinvest profits in industrial expansion or fail to keep pace with competition; and the nature of his labor force and the extent of his capital accumulation have made possible the qualitative expansion provided by a higher technological level and have rendered fruitless most attempts at purely quantitative expansion through the addition of more workers.

Since capitalism creates an integrated national and international market it indirectly contributes much to the growth of science and technology. For example, the textile and coal industries did not depend upon science to any great extent during the nineteenth century, but they had to penetrate a geographically wide market and had to keep abreast of the demand for better

goods. Thus, among their ancillary effects were the impetus given to engineering and geology (bridges, tunnels) and to chemistry (bleaches, dyes). And of great importance, the reliance of capitalist enterprise on scientific and technological progress has fostered ways of thinking that have stimulated interest in, work at, and enthusiasm for technical projects of all kinds.

Craftsmen, skilled laborers, and small producers, who were all anxious to conserve labor time and cut costs, perhaps provided the greatest technological thrust. Specifically, the great advances of the modern era arose from a free-labor economy that provided production workers with the incentives to improve methods and techniques.[1] In nineteenth-century America "the farmers...directed and inspired the efforts of inventors, engineers, and manufacturers to solve their problems and supply their needs.../and/ the early implements were in many cases invented or designed by the farmers themselves."[2]

If laborers are to contribute much to technology the economy must permit and encourage an increasing division of labor, for skilled workers assigned to few tasks can best devise better methods and implements. Extensive division of labor

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[1]Edgar Zilsel, "The Sociological Roots of Science," The American Journal of Sociology, XLVII (Jan., 1942), 557ff. Zilsel correctly argues that ancient slavery impeded science and technology but errs in tracing the cause to the cheapness of labor.

[2]Fowler McCormick, Technological Progress in American Farming (Washington D.C.: The Newcomen Society, 1940), p. 9

cannot, however, develop in slave societies. Once an initial accumulation of capital takes place, the division of labor, if not impeded, will result in further accumulation and further division and so forth. This process encounters several difficulties in slave economies. First, the heavy capitalization of labor, the high propensity to consume, and the weakness of the home market impede seriously the accumulation of capital. Secondly, technological progress and division of labor result in work for fewer hands; but slavery requires all hands to be occupied at all times. Capitalism has solved this problem by a tremendous economic expansion along varied lines (qualitative development) but slavery's obstacles to industrialization and qualitative expansion prevent this type of solution.

In part, the slave South offset its weaknesses by drawing upon the technology of more progressive areas. Countries that lag industrially and then attempt to catch up have the advantage of being able to copy from older industrial nations. During the first half of the nineteenth century the United States copied on a grand scale. But the South was limited even in the extent to which it could copy, and it was especially restricted in possibilities for improving techniques once they had been acquired. Regions to which the transference of technical skills has been most effective have been those with an abundance of trained craftsmen as well as of natural resources.[1]

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[1]H. J. Habakkuk, in Economic Progress, ed. Dupriez, p. 156.

In the North a shortage of unskilled labor and a preoccupation with labor-saving machinery stimulated the absorption of advanced techniques and the creation of new ones. In the South the importation of slaves remedied the labor shortage by providing an ample supply for the plantations while the slave system forced out nonslave productive units. The availability of a "routinized, poorly educated, and politically ineffectual rural labor force" of whites as well as Negroes rendered, and to some extent still renders, interest in labor-saving machinery pointless.[1]

Some statistics will illustrate the South's indifference to science and technology.[2] There were few scientific

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Simon Kuznets has even suggested that the major capital stock of a people is its vocational skills and know-how. See "Toward a Theory of Economic Growth," in National Policy for Economic Welfare at Home and Abroad, ed. Robert Lekachman (Garden City: Doubleday and Co., 1955), p. 39.

There was also a shortage of skilled labor in the North, but it was relative to the immense economic potential and was remedied fairly quickly by the importation of Europeans.

[1]James H. Street, The New Revolution in the Cotton Economy. Mechanization and Its Consequences (Chapel Hill: University of North Carolina Press, 1957), p. 34.

[2]Southern States promoted some fine agricultural and geological surveys primarily because of a few selfless, able, socially conscious men who were willing to do a difficult job with little appreciation and support. The case of Oscar M. Lieber, the state geologist of South Carolina, is suggestive of others. He was denied adequate funds and had to work with his own money until necessity forced him to resign in 1860. See his letter in the South Carolina Mineralogical and Geological Survey, Report, 1860, pp. v-vi. The state geologist of Alabama was not paid at all for his first survey and received only $2,500 for his second. Arkansas paid the same; Mississippi paid only half as much. Illinois, on the other hand, paid $5,000 and California $6,000. See Alabama Geological Survey, Second Biennial Report, 1852, p. ix; U.S. Department of the Interior, U.S. Geological Survey, The State Geological Surveys of the United States, ed. C.W. Hayes (Washington, 1911), pp. 10, 17, 21, 42, 83.

societies in the slave states in the 1850's--only five of the thirty-five in the United States--and they were of poor quality. The best societies were in the Northeast, although after 1825 the West proved fertile ground for their growth.[1] Of the seventeen scientific schools and colleges in the country in 1860 only three were in the South, and more striking, only one of the seventeen agricultural schools and colleges was in the agrarian slave states.[2] The root of the scientific and technical growth of the North was, as Dirk J. Struik has said, in "the industrial revolution and its expansion in a capitalist society without feudal remains."[3]

Negro slavery retarded technological progress in many ways: it prevented the growth of industrialism and urbanization;

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[1]R. S. Bates, Scientific Societies in the United States (New York: Columbia University Press, 1945), pp. 45ff, 51.

[2]Eighth Census of the United States, 1860, Miscellaneous Statistics, p. 510.

[3]The Origins of American Science (New England) (New York: Cameron Associates, 1957), p. 384, n.3.

Thomas C. Johnson, Jr. tries to prove that scientific interest was well developed in the Old South. He points out that of the 16,137 patents granted up to 1849 Southerners received 2,906. That record is less than startling; but in any case one wonders how many inventors followed McCormick north to profit from their work. Johnson's evidence of Southern scientific interest was such data as the number of students who selected elective chemistry courses at the University of Virginia. The enrolment in these courses rose from 438 in the 1831-36 period to 991 in the 1851-56 period. In the first place, the figures prove nothing about science and technology in the South. In the second place, the University of Virginia was an unusual Southern institution. And finally, the enrolments in chemistry courses did not keep pace with the general enrolment. The proportion of students taking the course dropped from 51.7 per cent to 41.8 per cent. See Scientific Interests in the Old South (New York: D. Appleton-Century Co., 1936), esp. pp. 3-6 and n. 2 on p. 3; also pp. 13f and n. 10.

it retarded the division of labor, which has spurred the creation of new techniques; it barred the labor force from the intelligent participation in production that has made possible the steady improvement of implements and machines; and it encouraged ways of thought antithetical to the spirit of modern science.[1] Perhaps of greatest relevance, the impediments to technological progress undoubtedly damaged Southern agriculture, for improved implements and machines were largely responsible for the dramatic increases in crop yields per acre in the Northern states during the nineteenth century.[2] The steady deterioration of American soil under the conditions imposed by commercial exploitation has been offset primarily by the gains accruing from increased investments in technological improvements. Recent studies show that from 1910 to 1950 agricultural output per man-hour doubled only because of the rapid improvement in implements, machinery, and fertilizers.[3] But the backward economy of the South prevented such agricultural improvement and even the maintenance of old standards.

The Southern farmers were especially hurt by technological backwardness, for the only way in which they might have compen-

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[1]Cf., S. C. Gilfillan, The Sociology of Invention, An Essay on the Social Causes of Technic Invention and Some of Its Social Results; Especially as Demonstrated in the History of the Ship (Chicago: Follett Publishing Co., 1936), pp. 5-9 and passim.

[2]Leo Rogin, The Introduction of Farm Machinery in Its Relation to the Productivity of Labor in the United States During the Nineteenth Century ("University of California Publications in Economics," IX; Berkeley, 1931), Chapter I.

[3]Cited by Ronald L. Mighell, American Agriculture: Its Structure and Place in the Economy (New York: John Wiley & Sons, Inc., 1955), pp. 7f.

sated for the planters' advantage of large-scale production would have been to attain to a much higher technological level. But the social pressure to invest in slaves and the high cost of machinery in a region that had to import much of its equipment made such an adjustment difficult.

Large-scale production gave the planter an advantage over his weaker competitors within the South, but the plantation was by no means more efficient than the family farm operating in the capitalist economy of the free states. Large-scale production, to be most efficient under modern conditions, must provide a substitute for the incentives possessed by the free individual farmer. Advanced mechanization ("factory farms") is such a substitute, but the mechanization required is only now becoming possible in the most advanced countries. The experience of Soviet agriculture, with its politically induced collectivization of a backward countryside, has once again demonstrated that the prerequisite for efficient large-scale agricultural commodity production is a level of industrial-technology such as is only now being attained in the United States and the Soviet Union.[1]

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[1]One may argue, as does Paul A. Baran in The Political Economy of Growth (New York: Monthly Review Press, 1957), pp. 267ff, 278-83, that collectivization was justified because the alternative in a country that lacked the urban purchasing power to pay high prices for foodstuffs was to have the rural sources of capital accumulation dried up by heavier peasant consumption. He adds that the USSR had to force the pace of industrialization for military and political reasons, and that grain deliveries to the cities had to be insured. Baran's arguments are essentially political. I do not think that anyone can doubt that collectivization removed a good part of the peasants' incentives without providing them with improved implements and machines. Cf., W. Arthur Lewis, The Theory of Economic Growth (Homewood, Ill.: Richard D. Irwin, 1955), p. 134 for a summary of past experiences of large-scale farming.

The Division of Labor on the Plantations

Although few scholars assert that the Southern slave plantations were self-sufficient units, most assume a fair degree of division of labor. The employment of skilled artisans is usually treated as a minor matter nor worth serious attention. Yet, an examination of plantation manuscripts and data in the manuscript census returns shows that considerable sums were paid for the services of artisans and laborers and that the extent of home manufactures was slight.

Home Manufactures

Rolla M. Tryon, in his Household Manufactures in the United States, 1640-1860,[1] notes that the Confederacy was unable to repeat the achievements of the colonies during the Revolutionary War, when family industry supplied the war effort and the home front. Although household manufacturing survived longer in the slave states than in other parts of the country, slave labor proved so inefficient in making cloth, for instance, that planters preferred not to bother. In those areas of the South where slavery predominated household manufactures decreased rapidly after 1840, and the system never took hold in the newer slave states of Florida, Louisiana, and Texas.[2] But whereas its disappearance in the North was

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[1](Chicago: The University of Chicago Press, 1917), pp. 5, 295ff.

[2]Ibid, pp. 184ff, 298, 371.

occasioned by the development of much more advanced factory processes, in the South it was part of a general decline in skill and a lowering of technique.

An examination of the data in the manuscript census returns for selected counties in 1860 bears out Tryon's generalizations. It also shows that the large plantations, although they usually produced greater totals than the small farms, did very poorly in the production of home manufactures. In the Mississippi cotton counties studied the big planters (thirty-one or more slaves) averaged only $76 worth of home manufactures during the year, whereas other groups of farmers and planters showed much less. In the Georgia cotton counties the small planters (twenty-one to thirty slaves) led other groups with $127, and the big planters produced only half as much. Moreover, fifty-eight per cent of the big planters in the Mississippi counties recorded no home manufactures at all, and most agriculturalists in the Georgia counties produced nothing. In the Virginia counties the same results appeared: in the tobacco counties studied the big planters led other groups with $56 worth of home manufactures, and in the tidewater and northern wheat counties the big planters led with $35.[1]

The Richmond Dispatch estimated in the 1850's that the South spent five million dollars annually for Northern shoes

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[1] See Appendix II for the determination of sample counties and Appendix IV for a discussion of how the material from the manuscript census returns was used.

and boots.[1] Although the figure cannot be verified, there is no doubt that Southerners bought most of their shoes in the North. One of the bigger planters, Judge Cameron of North Carolina, owner of five plantations and 267 slaves in 1834, had to purchase more than half the shoes needed for his Negroes despite his large organization and conscientious attempt to supply his own needs.[2] Most planters apparently did not even try to produce shoes or clothing. When a planter with about thirty slaves in Scotland Neck, North Carolina, made arrangements to have clothing produced on his estate, he hired an outsider to do it.[3] Yet until 1830 shoes were produced in the United States with tools and by methods not essentially different from those used by medieval serfs,[4] and not much equipment would have been needed to continue these methods on the plantations. Even simple methods of production were not employed on the plantations because the low level of productivity made them too costly relative to available Northern shoes. At the same time, the latter were more-expensive than they ought to have been, for transportation costs were high, and planters had little choice but to buy in the established New England shoe centers.

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[1]De Bow, Industrial Resources, II, 130.

[2]Cameron Papers, CXIII, In the University of North Carolina.

[3]Simmons Jones Baker Account Book, miscellaneous notes, at the University of North Carolina.

[4]Blanche Evans Hazard, The Organization of the Boot and Shoe Industry in Massachusetts before 1875 ("Harvard Economic Studies," XXIII; Cambridge, 1921), p. 3.

It may have paid to keep all available slaves in the cotton fields, but during periods of low prices the reverse was probably true. At those times the factors forcing a one-crop agriculture and the low productivity of nonfield labor wrought devastating results. The South's trouble was not that its plantations could not produce shoes and clothing, nor that it had few shoe and clothing factories, nor that it lacked diversified agricultural and industrial enterprises. The great difficulty was that it suffered from all three at the same time. The lack of division of labor on the plantations, and the lack of social division of labor in the region forced the planters into dependence upon the Northern market. The total result was to raise the cost of producing cotton during periods of low as well as of high cotton prices. Even during the extraordinary years of the Civil War, when Southerners struggled mightily to feed and clothe themselves, the attempt to produce home manufactures met with only indifferent results.[1] These observations merely restate the problem of division of labor in the Old South: the low level of productivity, caused by the inefficiency of the slaves and the general backwardness of society, forced increasing specialization in staple crop production under virtual colonial conditions.

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[1]Cf., Mary Elizabeth Massey, Ersatz in the Confederacy (Columbia: University of South Carolina Press, 1952), chapter I and passim.

The Employment of Skilled Laborers

Plantation account books reveal surprisingly high expenditures for a variety of tasks requiring skilled and unskilled labor.[1] A Mississippi planter with 130 slaves paid an artisan $320 for labor and supplies for a forty-one day job in 1849. Other accounts show that Governor Hammond spent $452 to have a road built in 1850; another planter spent $108 for repair of a carriage and $900 for repair of a sloop in 1853, and $175 for repair of a bridge in 1857; a third spent $2,950 for the hire of artisans in 1856 on a plantation with more than 175 slaves.[2]

The largest expenses were for blacksmiths' services. A Panola, Mississippi, planter made expenditures for the following in 1853: sharpening of plows and mending of shovels and construction of plows, ox-chains, hooks, and other items. In 1847 a Greensboro, Alabama, planter, whose books indicate that he was businesslike and efficient, spent about $140 for blacksmiths' services on his large plantation of

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[1]The use of white labor for ditching is frequently commented upon, but the size of the expenditures is not always appreciated. One planter paid $170 in 1842, whereas another spent $250 in 1859. Such sums were not trifles for planters, especially small ones. See Moses St. John R. Liddell and Family Papers for 1852 and the Leonidas Pendleton Spyker Diary, Feb. 8, 1859. Both sets of papers at Louisiana State University.

[2]Haller Nutt Papers for 1849, at Duke University; and James H. Hammond Account Book for 1850, Stephen D. Doar Account Books for 1853 and 1857, and Charles Bruce Plantation Accounts for 1856--all in the Library of Congress.

seventy-five slaves.[1] One South Carolina planter with forty-five slaves had an annual blacksmiths' account of about $35, and expenditures by other planters were often higher.[2]

Even simple tasks like the erection of door frames sometimes required the services of a hired carpenter, as was the case with a Jefferson County, Mississippi, planter in 1851.[3] If buildings, chimneys, or slave cabins had to be built, planters generally hired free laborers or perhaps slave artisans.[4] Skilled slaves had unusual privileges and incentives, but there was not much for them to do on any single plantation. Rather than allow a Negro to spend all his time acquiring a skill for which there was only limited need, a planter would

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[1]Everard Green Baker Papers, I, 139. Iverson L. Graves spent $20 during four months of 1853 for the sharpening and repairing of tools; Graves Papers, XV. Both sets of papers at the University of North Carolina. Henry Watson Papers, 1847, at Duke University.

[2]See De Bow, Industrial Resources, I, 161. The Killona Plantation Journals, I, 60ff, reveal that about $75 was spent during eight months by a planter with fifty slaves. Cf., William McKinley Book, p. 17; Robert W. Withers Books, I, 46; James Sheppard Papers, April 9, 1849. The Killona Papers are in the State Department of Archives and History, Jackson, Mississippi; the others are at the University of North Carolina.

[3]Duncan G. McCall Plantation Journal and Diary, Jan. 4, 1851. The Plantation had 75 slaves. Papers at Duke University.

[4]Ibid., Jan. 6, 1851. Spyker Diary, Jan. 15, 1857. Spyker, with more than 100 slaves, spent more than $200 for the services of a mason. A letter to Mrs. Howell Cobb (April 27, 1846) indicates that Negro cabins were generally built by hired labor at costs up to $250 per cabin. See Ulrich B. Phillips, Plantation and Frontier. Documents: 1649-1863 Illustrative of Industrial History in the Colonial and Ante-Bellum South (2 Vols.; Cleveland, Ohio: The Arthur H. Clark Co., 1909), II, 38.

hire a slave for short periods. But even this type of slave specialization was frowned upon by many planters, who considered the incentives and privileges to be subversive of general plantation discipline.

Ironically, the white artisans could not make a full contribution to society either, for, whereas the Northern artisans were instrumental in furthering technique and improving implements, Southern artisans were discouraged from doing so. First, planters were not much interested in putting improved implements in the hands of their careless slaves, and secondly, although individual planters spent considerable sums for artisan labor, the total demand in the Cotton Belt could not keep pace with the supply of those anxious to earn a few dollars wherever they could. Thus, there was plenty of ostensibly skilled labor at the low wages planters would pay, but it was of notoriously poor quality. In a society that degraded manual labor, at least when performed for others, there was little of that pride in work that characterized artisanship in free societies or in the semi-autonomous cities of medieval Europe.

Division of labor did not develop on the plantations because slaves were usually not trusted with skilled tasks, because planters were often unwilling to extend privileges that could have provided incentives to better work, and because there was not enough work to keep skilled labor occupied through most of the year. True, slaves could have been used in the cotton fields most of the time and on certain special tasks

on occasion. But without steady work at his trade, the level of productivity to which the laborer could attain in his "specialty" would have to be very low. Under the circumstances the best course was to keep the slaves in the cotton fields, where the simplicity of the tasks minimized the damage done by their unwillingness to work properly. This decision to keep the slaves working at staple crops, although it may have been a purely rational calculation, betrayed a fundamental weakness in the system and illustrated one aspect of the many-side pressure propelling the South into colonial dependence upon the more advanced North.

Farm Implements and Machinery

"There is nothing in the progress of agriculture," The United States Agricultural Society reported in 1853, "more encouraging than the rapid increase and extension of labor-saving machinery."[1] From 1850 to 1860 the value of farm machinery and implements manufactured in the United States rose by 160 per cent, and the machinery designed and produced during the thirty years prior to 1850 came into widespread use. Threshing machines, corn shellers, straw cutters, drills, reapers, equipment for sowing grains broadcast, and plows of various types all achieved considerable popularity before the Civil War.[2] The harrow came into general use in the 1820's

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[1] Journal of the United States Agricultural Society, I (1853), 132.

[2] H. W. Quaintance, The Influence of Farm Machinery on Production and Labor ("Publications of the American Economic Association" 3rd Series, V, no. 4; New York, 1904), p. 11; The Institute of the City of New York, Annual Report, 1847, pp. 174ff.

and 1830's, and the cultivator was popular in the East by 1840 and in the West by 1850.[1] Wheat drills and corn planters were first manufactured in the United States about 1840, and production was substantial within ten years.[2] A superior reaper entered the market in 1855, although less satisfactory models had been in use earlier. In 1855, 15,000 reapers were produced, and a year later 20,000 were said to be in use in Illinois alone. By 1860 American farmers had an estimated 100,000 reapers, and annual production had reached 20,000. This machine allowed the North to increase its wheat production during the war despite a severe shortage of manpower.[3]

The South did not profit much from these technological advances, nor did it contribute much. The South probably had as much talent as the North, but the inefficiency of slave labor and the other adverse effects of the slave system made the employment of improved tools and machines pointless and compelled Southern inventors to go north. C. O. Cathey, in commenting upon the agitation for improved implements in North Carolina in the 1850's, says that, surprisingly, none of the

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[1]Fowler McCormick, The Development of Farm Machines (Washington, D.C.: The Newcomen Society, 1939), p. 16; Clarence Danhoff, "Agricultural Technology to 1860," Chapter VI of Harold E. Williamson, The Growth of the American Economy. An Introduction to the Economic History of the United States (New York: Prentice-Hall, Inc., 1946), p. 123.

[2]Robert L. Ardrey, American Agricultural Implements (Chicago: The Author, 1894), pp. 31f; John W. Oliver, History of American Technology (New York: The Ronald Press, 1956), p. 225.

[3]Danhoff in Williamson (ed.), pp. 129f; Edward W. Byrn, The Progress of Invention in the Nineteenth Century (New York: Munn & Co., 1900), p. 205.

implements demanded were produced on a large scale within the state and that no local inventor profited much for his trouble.[1] In view of the small market for new and better equipment the result is not so surprising at that, unless undue attention is paid to the statements of agrarian reformers or to the illusory valuations that sometimes appeared in the census reports.

The most obvious obstacle to the employment of better equipment was the slave himself.[2] In 1843 a Southern editor sharply rebuked planters and overseers for complaining that Negroes could not handle tools. Such a complaint was, he said merely a confession of poor managerial ability, for with proper supervision slaves would provide proper care.[3] The writer was unfair. Careful supervision of unwilling laborers would have entailed either more overseers than most planters could afford or a slave force too small to provide the advantages of large-scale operation. The harsh treatment that slaves gave equipment shocked travelers and contemporaries, and neglect of tools was among the most common reasons given for inflicting punishments on Negroes.[4] In 1855 a South

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[1] Agricultural Developments, p. 68.

[2] The familiar generalization that slaves mishandled equipment so badly that planters were reluctant to purchase good implements has received new support from Moore's able study of conditions in Mississippi. See Agriculture in Ante-Bellum Mississippi, p. 41.

[3] The Southern Planter (Richmond), III (Sept., 1843), 205f.

[4] Cf., Hammond Plantation Book, 1832-39, "Instructions to Overseer."

Carolina planter wrote in exasperation that:

> "The wear and tear of plantation tools is harassing to every planter who does not have a good mechanic at his nod and beck every day in the year. Our plows are broken, our hoes are lost, our harnasses need repairing, and large demands are made on the blacksmith, the carpenter, the tanner, and the harnassmaker." (Sic.)[1]

We do not know what proportion of Southern implements were made by local blacksmiths and what proportion were purchased from Northern manufacturers, but the difference in quality was probably not so great as one might imagine. Undoubtedly, local blacksmiths contributed wretched goods; but the equipment made in the North specially for the Southern market was well below national standards. J. D. Legare, editor of The Southern Cabinet, visited implement factories in the North and was "struck" by the inferior grade of equipment sent to the South. The metal was the poorest available, and the workmanship was far worse than that put into goods for the free states. The wooden plows were the cheapest that could be made. The reason for the double standard was, as Legare admitted, that planters demanded inexpensive items.[2] Planters would not spend money for good implements because the slaves would not take care of them; and the poor quality of those purchased guaranteed that they would not long survive even normal treatment.[3]

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[1] The Farmer and Planter, VI (Feb., 1855), 43.

[2] The Southern Cabinet, I (Sept., 1840), 531-36.

[3] Moore (Agriculture in Ante-Bellum Mississippi, p. 168) says that a few Northern manufacturers gave all a bad name by turning out poor goods for the Southern market. But Northern producers normally sent inferior goods south, for planters would not pay for the better models.

In 1857 The Farmer and Planter published a special report by a former editor who had visited the South Carolina State Fair and had inspected plows made by Southern manufacturers. He described the plows as poor, of indifferent quality and crude construction, and added that most Southern producers had advanced only to the point at which James Small of Berwickshire had left the plow in 1740.[1]

The implements used on the plantations were generally much too heavy for efficient use. The "nigger hoe", often employed in relatively advanced Virginia, was far heavier than the "Yankee hoe", which the slaves broke easily. Those used in the Southwest were almost three times the weight of those manufactured in the North for Northern use.[2] Curiously, in some cases equipment was too light for adequate results. Whereas most planters bought extra heavy implements in the hope that they would withstand the rough handling, others resigned themselves to breakage and bought the cheapest possible.[3]

Good plows in 1857 sold for fifteen or twenty dollars, although perhaps some of those selling at five or ten dollars

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[1]VIII (Nov., 1857), 245.

[2]C. G. Parsons, Inside View of Slavery; Or a Tour Among the Planters (Boston: J. P. Fewett & Co., 1855), p. 94; Danhoff in Williamson (ed.), p. 120.

[3]On the coastal plain of the Southeast during the twentieth century the lack of capital has caused continued reliance on harrows and plows that are too light for most purposes. See Hugh Hammond Bennett, The Soils and Agriculture of the United Southern States (New York: The Macmillan Co., 1921), p. 232.

were adequate. An eighty-acre farm in Iowa, in Danhoff's estimation, had at least $375 worth of implements in addition to good plows and small tools.[1] Cultivators and harrows cost from five to twenty dollars; a grist mill from fifteen to thirty dollars; a tread mill horsepower from eighty-five to one hundred and fifty dollars; a seed drill sixty dollars; a reaper-mower one hundred and thirty-five dollars; and so forth. M. W. Philips, one of the few advanced planters in the Lower South, used such expensive equipment as straw cutters, which sold generally for from twenty-five to forty-five dollars, and corn and cob crushers, which sold for from thirty to fifty dollars. But he noted that planters usually refused to buy anything but the cheapest of essential items. "We of the South have a jaundiced eye," he wrote. "Everything we view looks like gold--costly."[2]

Southerners preferred to pay less than standard prices for their goods, even at the expense of quality. Plows such as those generally in use in Arkansas were valued at five dollars, and perhaps of greater significance, an average cotton producing unit of 100 acres was said to have only fifteen dollars worth of equipment other than plows.[3] A Mississippi planter valued his thirty "indifferent" plows at seventy-five dollars; even if he had made a liberal allowance

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[1]Danhoff in Williamson (ed.), p. 136 and n. 22.

[2]The Farmer and Planter, II (March, 1851), 19.

[3]De Bow's Review, XII (Jan., 1852), 72.

for depreciation, he was clearly using the poorest kind of equipment.[1] As an indication of the quality of the work done by local blacksmiths, one planter spent a total of five dollars for ten turning plows in 1853.[2] Gray claims that most Southern plows were worth only from three to five dollars. There is little reason to question either this estimate or his opinion that they probably did not last more than a year or so.[3]

Most planters in Mississippi, wrote M. W. Philips, thought that they could use one kind of plow for every conceivable purpose.[4] The weakness was doubly serious, for the one kind of plow was usually poor. The most popular plow in the Lower South, at least well into the Forties, was the shovel plow. This instrument, which continued to be used until 1860, was a V-shaped piece of iron with backward sloping wings and no mouldboard. Rather than turn the soil, it stirred the surface to a depth of two or three inches.[5] The shovel plow was made of wrought iron, rather than the more efficient cast iron, and was "a crude and inefficient instrument which, as commonly employed, underwent no essential improvement throughout its long career."[6] It was light enough for a girl to

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[1]Sheppard Papers, valuation figures for 1847.

[2]Graves Papers, XV, expenditures for Feb.-May, 1853.

[3]History of Agriculture, II, 796.

[4]The American Cotton Planter, II (Aug., 1854), 244.

[5]See The Southern Cabinet, I (April, 1840), 199; Danhoff in Williamson (ed.), p. 118.

[6]Rogin, p. 54.

carry and exemplified the "too light" rather than "too heavy" type of instrument used on the plantations.

In the 1850's the shovel plow slowly gave way in the South to a variety of light mouldboard plows, which at least were of some help in killing and controlling weeds. Good mouldboard plows should offer other advantages, such as aid in burying manure, but those in use in the South were not nearly so efficient as those in use in the free states.[1]

In 1830 manufacturers in Connecticut began to produce large numbers of Cary plows exclusively for the Southern market. These light wooden plows with wrought-iron shares were considered of good quality. Unfortunately, they required careful handling, for they broke easily; and they could not penetrate more than three or four inches below the surface. The date 1830 is significant, for by the early

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[1]On the advantages of the mouldboard plow for weeding and burying manure see Sir E. John Russell, Soil Conditions and Plant Growth (8th ed., rev. by E. Walter Russell; London: Longmans, Green and Co., 1950), pp. 578ff. Mouldboard plows were in general use in New England at least as early as 1840. See M. H. Chevalier, "Les Charrues anciennes de l'Amérique et de l'Océanie," in Société des Ingénieurs Civils de France, Memoires et compte rendu des travaux, LXXIII (1920), 71.

In recent years some agronomists have challenged the usefulness of deep plowing and have argued that it does much more harm than good. The literature on this contention is already vast and the issue still undecided. A firm conclusion on the effects of the methods used by antebellum Southern planters will have to wait until the experts settle the technical issues. Nevertheless, it is significant that the planters' failure to plow deep was due not so much to any special agronomical knowledge as to a lack of proper equipment.

1820's Northern farmers were shifting to cast-iron plows that could cover fifty per cent more territory with fifty per cent less animal- and man-power.[1]

When cast-iron plows did enter the South, they could not be used to the same advantage as in the North, for they needed the services of expert blacksmiths when, as frequently happened, they broke.[2] The Northern farmer provided careful handling, could draw upon skilled blacksmiths, andhad implements with interchangeable parts. The planter, however, saw his plows manhandled by indifferent slaves and rarely could or would spend money for good ones. By the 1850's Western farmers passed beyond the use of cast-iron plows and worked with steel ones, whereas in the 1860's Easterners began to use chilled-iron plows designed especially for their soil conditions.[3]

Twenty years after the introduction of the cultivator in 1820 Northern farmers considered it standard equipment, especially in the cornfields. But cultivators, despite their tremendous value, were so light that few planters would trust

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[1]Rogin, pp. 8f, 30f. The Cary plow was also called Dagon, Degen, Connecticut, and various other names.

[2]H. P. Smith, Farm Equipment and Machinery (2nd ed.; McGraw Hill Book Co., 1937), pp. 47ff.

[3]Cf., Oliver, p. 224. Avery O. Craven maintains that in Maryland and Virginia farmers and planters used excellent equipment after 1840 (Soil Exhaustion, p. 152). But it was excellent only relative to those used further south. When improvements entered the South they were generally confined to the Upper South and to a few counties below Virginia. In Chapter V, I shall examine the circumstances under which those reforms occurred.

them to their slaves. Since little wheat was grown below Virginia the absence of reapers was not especially important, but the backwardness of cotton equipment was. A "cotton planter" (a modified grain drill) and one man could do as much work as two mules and four men,[1] but it was rarely used. Similarly, corn planters (especially the one invented by George Brown in 1853) might have saved a tremendous amount of labor time; but these were costly, needed careful handling, and would have rendered part of the slave force superfluous. Since slaveholding was a matter of prestige and honor and since slaves were an economic necessity during the picking season planters preferred not to pay for machines that would have forced them to cut their labor force or that would have idled their Negroes much of the time.[2]

The cotton picker presents special, complicated, technical and economic problems. So long as a mechanical picker was not available a large labor force would have been needed for the harvest. It is sometimes suggested, therefore, that the South's

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[1]Danhoff in Williamson (ed.), p. 126; The American Cotton Planter, XII (April, 1858), 115. Grain drills sold for about $100 in the South, according to The Farmer and Planter, II (Nov., 1851), 161; cf., De Bow's Review, VI (Aug., 1848), 133.

[2]George F. Lemmer says that tobacco and hemp growers in Missouri failed to keep pace with grain growers in the use of improved implements and machinery because tobacco and hemp machinery did not improve much. Yet, we need to know why labor-saving machinery for those crops was not developed. The answer--or at least part of it--may be traced to the use of slave labor in the tobacco and hemp regions; free labor predominated in the grain areas. See George F. Lemmer, "Farm Machinery in Ante-Bellum Missouri," Missouri Historical Review, XL (July, 1946), 469, 479.

failure to keep pace with the North in quantity and quality of farm implements was merely a reflection of the technical difficulties preventing development of a picker. But the matter is not so simple. First, in 1850 Samuel S. Rembert and Jedediah Prescott of Memphis patented a mule-drawn cotton picker that was a "simple prototype of the modern spindle picker."[1] Virtually no progress was made on the original design until forty years later, and then almost as long a span occurred before further advances were made. The reasons for the failure were in part technical and in part the economic pressures arising from slavery and share-cropping. Although one can never be sure about such things, the evidence accumulated by historians of science and technology strongly suggests that the social and economic impediments to technological change are generally more powerful than the specifically technical ones. The introduction of a cotton picker would have entailed the full mechanization of farming processes, and such a development would have had to be accompanied by a radically different social order. Surely, it is not accidental that the mechanical picker has in recent decades taken hold in the Southwest, where share-cropping has been weak, and has moved east slowly as changes in the social organization of the countryside have proceeded. Secondly, even without a mechanical picker the plantations might have used good implements and a smaller labor force during most of the year and temporary help during the harvest. In California in 1951, for

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[1]Street, p. 92.

example, fifty per cent of the occasional workers needed in the cotton fields was obtained from within the county and ninety per cent from within the state. Temporary employees were obtained from among rural and town housewives, youths, and seasonal workers anxious to supplement their incomes.[1] There is no reason to believe that this alternative would not have been open to the South in the 1850's if slavery had been eliminated. The technical difficulties hindering the development of a cotton picker cannot be held accountable for the South's poor record.

A few examples, which could be multiplied many times, illustrate the weakness of plantation technology. A plantation in Stewart County, Georgia, with a fixed capital investment of $42,660 had only $300 invested in implements and machinery. The Tooke plantation, also in Georgia, had a total investment in implements and machines of $195, of which a gin accounted for $110. Plantations had plows, perhaps a few harrows and coulters, possibly a cultivator, and in very few cases a straw-cutter or corn and cob crusher. Whenever possible of course a farmer or planter acquired a gin, and all had small tools for various purposes.[2]

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[1] Ibid., p. 197.

[2] David Hillhouse Memorandum Book, p. 25, in the Alexander Robert Lawton Papers, which are located in the University of North Carolina; for the Tooke plantation see Ralph B. Flanders, "Two Plantations and a County in Ante-Bellum Georgia," Georgia Historical Quarterly, XII (March, 1928), 4. See also Cameron Papers, CXIII; Andrew Flinn Plantation Book, 1840, in the University of South Carolina South Caroliniana Society (microfilm copy in private possession). Peter W. Hairston Plantation Book, 1857; Killock Plantation Books, VII, 1849 inventory; Newstead Plantation Diary, records for 1861--all in the

The figures reported in the censuses of farm implements and machinery are of limited value and must be used carefully. We have little information on shifting price levels, and the valuations reported to census-takers were not standardized. The same type of plow worth five dollars in 1850 may have been recorded at ten dollars in 1860, and in view of the general rise in prices something of the kind probably occurred.[1] Under certain conditions, which will be explored in Chapter V, genuine improvement took place; but the reforms were neither so extensive nor so intensive as the statistics suggest.

Even if we put aside these objections and examine the investments in selected counties in 1860, the appalling state of plantation technology is evident. Table 1 presents the data from the manuscript census returns for 1860. Of the 1,969 farmers and planters represented only 160, or eight per cent, had more than $500 invested in implements and machinery. If we assume that a cotton gin cost from $100 to $125, then the figures for the cotton counties suggest that all except the planters (twenty slaves or more) either did

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University of North Carolina. Eli J. Capell & Family Papers, Plantation and Account Book for 1851, pp. 1, 83, in the Department of Archives, Louisiana State University; Joseph M. Jaynes Plantation Account Books, p. 15, in Duke University.

[1]Commodity prices rose from twenty-three to thirty-five per cent from 1849 to 1857 and then slumped somewhat following the crisis. In 1859 prices were from ten to sixteen per cent higher than they had been in 1849. See the Snyder-Tucker and Warren-Pearson indices in U. S. Department of Commerce, Bureau of the Census, Historical Statistics of the United States, 1789-1945 (Washington, 1949), pp. 232f.

TABLE 1

MEDIAN VALUE OF FARM IMPLEMENTS AND MACHINERY IN SELECTED COUNTIES, 1860[a]

Sample Counties[b]	Number of Slaves on Farms & Plantations[c]							
	0	2	7	15	25	45	80	110
A: Virginia Tobacco Counties (Amelia, Buckingham)	$40	$50	$50	$100	$150	$320	$925	
B: Virginia Tidewater Gloucester, Charles City)	30	35	70	150	200	500	725	
C: Virginia Northern Wheat Counties (Fauquier, Prince William)	60	100	150	300	425	1200	1350	
D: Georgia Upland (Walker, Gordon)	10	75	100	215	450	300		
E: Georgia Cotton Belt (Dougherty, Thomas)	25	75	135	200	350	400	500	
F: Mississippi Cotton Belt (De Soto, Marshall)	50	100	150	300	500	700	1000	1200

[a]Calculated from the manuscript census returns for 1860; see General Appendix IV for a discussion of the methods used.

[b]See General Appendix II for a discussion of the methods used to select sample counties.

[c]The number of persons in each group was as follows:

A: 67, 45, 45, 52, 23, 20, 6
B: 41, 26, 31, 24, 12, 9, 4
C:175, 59, 62, 62, 19, 7, 1
D:364, 37, 27, 17, 4, 3
E: 43, 19, 18, 21, 13, 22, 7
F:204, 83, 89, 92, 47, 45, 19, 5.

without a gin or had very little else. Note also that an increase in the slave force did not entail significant expansion of technique. In the cotton counties, as the size of the slaveholdings increased, the investments in implements and machines increased also, but in small amounts. Only units of twenty slaves or more showed tolerably respectable amounts; but even these were poor when one considers the size of the estates.

Conclusion

The South's greatest difficulty was the low productivity of its labor force. All admissable evidence indicates that the Negroes were capable of improving their productivity under favorable conditions but that slavery and cultural dislocation rendered this improvement impossible. The low level of productivity, and the factors related to it, retarded the division of labor and prevented the technological progress that might have led, in turn, to a higher productivity. Under the circumstances concentration on a staple crop, even during the periods of low prices, had to be more profitable than the diversion of labor to other activities. To say that it paid to keep slaves in the cotton fields is therefore beside the point. It paid because the economy was backward; and the consequence of that backwardness was the economic subjugation of the South.

CHAPTER III

SLAVERY AND THE EXHAUSTION OF THE SOIL

Soil Exhaustion as a Historical Problem

Although historians long held soil exhaustion in the Old South to be a result of slavery and the plantation system, scholars in recent decades have raised doubts and offered alternative explanations. Fortunately, the study of other areas of the world and of other historical periods has occasioned similar disputes about the nature and role of soil exhaustion, and important aspects of the problem have been clarified.

During the early part of the twentieth century students of European economic history engaged in a lively and illuminating, though not altogether conclusive, debate on the impact of soil exhaustion on social change. A review of some of the contributions should help us to clarify the issues in the problem of soil exhaustion in general and under slavery in particular. Vladimir G. Simkhovitch opened the controversy with the assertion that the Roman Empire and late medieval English society decayed primarily because of the decline of the fertility of the soil.[1] He did not fully develop his ideas,

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[1] "Rome's Fall Reconsidered," Political Science Quarterly XXXI (June, 1916), 201-43; and his earlier "Hay and History," Political Science Quarterly, XXVIII (Sept., 1913), 385-403.

but one of his talented students, Harriet Bradley, has contributed an able monograph on England.[1] Simkhovitch and Miss Bradley have tried to interpret whole epochs in terms of the exhaution of the soil, but their arguments, although attractive, have been subjected to withering criticism. Miss Bradley rejects the popular idea that the early enclosures and the growth of sheep raising were due to a rise in the demand for and the price of wool. She argues that wool prices fell during the fifteenth century and failed to rise as rapidly as wheat prices during the sixteenth. The conversion of arable land to pasture, she notes, did not cease during the seventeenth centuy, when the profits from wool growing fell. She concludes that the fertility of the common fields had declined as a result of the strip system, which prevented individual initiative in crop rotation and the like.

However plausible, there are disturbing elements in this thesis. First, the prevalent high agricultural wages might well have made sheep raising more profitable than wheat growing despite an unfavorable price differential. Secondly, her price data is based on the work of Thorold Rogers, who, as Miss Bradley acknowledges, had warned that the evidence for wool prices is scanty and inconclusive.[2]

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[1] The Enclosures in England: An Economic Reconstruction (New York: Columbia University Press, 1918).

[2] For a fuller discussion of the weaknesses of Rogers' wool price data see Tawney, p. 196.

Reginald Lennard has replied to Miss Bradley and to Simkhovitch by citing the "facts of general economic history" and especially the growth of centers of cloth manufacture and other enterprises, which stimulated the demand for foodstuffs. He also has drawn attention to agronomical evidence indicating that plants grown year after year on the same land will continue to yield a minimum output.[1] A study of English wheat yields by M. K. Bennett confirms Lennard's observations. Although his statistics are incomplete, Bennett finds that from 1200 to 1450 British wheat yields were eight or nine bushels per acre and that output tended to rise slowly rather than to decline.[2] A. P. Usher has, moreover, shown that so long as minerals are restored to earth absolute exhaustion is impossible, although depletion may become sufficiently serious to render "practical agriculture" unprofitable.[3] The question, then, is what is practical agriculture?

The critiques of Lennard, Bennett, and Usher satisfactorily dispose of the thesis of an absolute and continuous deterioration of the soil; but we must still account for the role of soil exhaustion in the changes that took place on the English

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[1]"The Alleged Exhaustion of the Soil of Medieval England," Economic Journal, XXXII (March, 1922), 12-27.

[2]British Wheat Yield for Seven Centuries," Economic History, III (Feb., 1935), 12-29, esp. p. 28.

[3]"Soil Fertility, Soil Exhaustion, and Their Historical Significance," Quarterly Journal of Economics, XXXVII (May, 1923), 398.

countryside after 1200, for the minimal output of eight or nine bushels per acre could do little more than permit the peasantry to earn a livelihood. The economic changes of the sixteenth century, however, required, not the maintenance of this minimum output, but a marked increase in productivity to sustain a growing urban population and the demands of a developing world market. So long as agriculture served local areas low productivity was permissable, but once production had to be adjusted to competitive national and international markets, ways had to be found to increase yields.[1]

The commercial exploitation required by capitalism made greater demands upon the soil. The medieval peasant understood quite well the need for manuring, but social conditions prevented him from applying his knowledge. The lord maintained the right to fold all sheep, and smetimes cattle, on his own land, and a peasant could rarely afford to feed his stock through the winter.[2] Under these circumstances the soil continued to yield enough to feed the peasantry but hardly enough to service urban or foreign markets. A radical economic adjustment had to occur before the land could be made to yield greater returns.

The essence of soil exhaustion is not the total exhaustion of the land, nor merely "the progressive reduction of crop

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[1]Cf., Norman Scott Brien Gras, A History of Agriculture in Europe and America (2nd ed.; New York: F. S. Crofts & Co., 1940), p. 20; Usher, p. 397.

[2]H. S. Bennett, Life on the English Manor (Cambridge: At the University Press, 1937), pp. 77ff.

yields from cultivated lands,"[1] for the reduction can be arrested at a level adequate to meet local needs. Rather, our theory must be adjusted to the requirements of each historical period and place. The rise of capitalism forces us to alter the definition to include the inability of the soil to recover sufficient productivity to maintain a competitive position. The many contributions to the discussion of soil exhaustion should demonstrate that the basic problem is the reaction of social institutions to new economic demands, rather than the natural deterioration of the soil.

Slavery and Soil Exhaustion

The steady deterioration of the soil presented one of the most serious problems facing antebellum Southern agriculture. Although the land of the Black Belt was among the finest in the world and although cotton was not an especially exhausting crop, the depletion of Southern soil proceeded with frightening rapidity.

Many of the principles of soil science have only recently come to be understood, and many misleading ideas prevailed during the nineteenth century. Nevertheless, several important points had been settled by the mid-1850s: that crops require phosphates and salts of alkalis; that nonleguminous crops require a supply of nitrogenous compounds; that artificial

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[1]As suggested by William Chandler Bagley, Jr., Soil Exhaustion and the Civil War (Washington: American Council on Public Affairs, 1942), p. 2.

manures may maintain soil fertility for long periods; and that fallowing permits an increase in the available nitrogen compounds in the soil.[1] Southern reformers, especially the talented Edmund Ruffin, had discovered these things for themselves and were particularly concerned with counteracting soil acidity.[2] Southern agricultural periodicals and state geological surveys repeatedly stressed the need for deep plowing, crop rotation, the use of legumes, manuring, and so forth. Although the results of the agrarian reform movement were uneven at best and although John Taylor of Caroline, the South's first great agrarian reformer, had called slavery "a misfortune to agriculture incapable of palliation,"[3] later agronomists denied that slavery contributed to the destruction of the soil.

Ruffin, for example, attributed this exhaustion to the normal evolution of agriculture in a frontier community and assumed that economic pressures would eventually force farmers and planters to adopt new ways.[4] Ruffin's attitude

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[1]Sir E. John Russell, p. 15. See also Fred A. Shannon, The Farmer's Last Frontier, Vol. V of The Economic History of the United States, ed. Henry David et al (9 Vols.: New York: Rinehart & Co., Inc., 1945), Chapter I. Shannon emphasizes that soil science was particularly weak until the appearance of translations of Glinka's work, the German edition of which appeared in 1914 and the English in 1927.

[2]Cf., An Essay on Calcareous Manures (5th Ed. Amended and enlarged; Richmond: J. W. Randolph, 1852; first ed., 1832), pp. 39ff; also, Craven, Ruffin, pp. 56ff.

[3]Arator, p. 57.

[4]Address on the Opposite Results of Exhausting and Fertilizing Systems of Agriculture, Read before the South Carolina Institute at Its Fourth Annual Fair, Nov. 18, 1852 (Charleston:

has been resurrected and supported by many historians who hold that slavery did not prevent the adoption of better methods and that the Civil War interrupted a general agricultural reformation.[1] Lewis C. Gray subscribes to this approach but adds the important qualification that, whereas the North overcame the effects of soil exhaustion by agricultural and industrial diversification, the South found it difficult to overcome the effects of the one-crop system.[2] We need not reopen the tedious argument about the causal relationship of slavery, the plantation system, and the one-crop system to realize that so long as slavery existed genuine diversification was close to being an impossibility.

Slavery contributed to soil exhaustion by preventing the South from combating the problem after the frontier conditions had disappeared. Whereas Bagely, for example, argues that "the slaveowner cannot, because of slavery, escape wearing out the soil,"[3] I should suggest that the weakness lay in the slaveowners' inability to restore land to competitive

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Walker and James, 1853), p. 6. Only occasionally after 1830 was a voice raised against slavery as a major obstacle to reform. See, e.g., Cassius Marcellus Clay, The Writings of Cassius Marcellus Clay, Including Speeches and Addresses, ed. Horace Greeley (New York: Harper & Brothers, 1848), p. 74.

[1]Cf., e.g., Craven, Soil Exhaustion, passim: Robert R. Russel, "The General Effects of Slavery Upon Southern Economic Progress," Journal of Southern History, IV (Feb., 1938), 36; James C. Bonner, "The Genesis of Agricultural Reform in the Cotton Belt," Journal of Southern History, IX (Nov., 1943), 475.

[2]History of Agriculture, I, 445.

[3]Bagely, p. 84.

levels after they had become exhausted naturally and inevitably in a country with a moving frontier. The one-crop system, perpetuated by slavery, prevented crop rotation; the dearth of liquid capital made the purchase of fertilizers difficult; the poor quality of the implements interfered with the proper use of available manures; and the carelessness of the slaves made all attempts at soil reclamation or improved tillage dubious propositions.[1]

The Use of Fertilizers

The direct and indirect effects of slavery greatly restricted the use of fertilizers. For cotton and corn the application of fertilizers to hills or rows is a method far superior to spreading it broadcast, and considerable care is needed if the labor is not to be wasted.[2] The planter had to

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[1]Simkhovitch cites as sound and sensible Columella's advice to Roman farmers to manure their land. But Simkhovitch adds that whether the advice could be followed was "another question." Political Science Quarterly, XXXI (June, 1916), 211. Similarly, Tenney Frank opposes Simkhovitch by referring to the well known skill of the Roman farmers in the use of manures, legumes, crop rotation, etc., and Pitirim Sorokin adds that since Chinese farmers restored their soil he fails to understand why the Roman farmers could not have done the same. But Simkhovitch's "another question" still remains. He misses the chance to pursue the matter and to undermine the criticism, for Frank's Roman farmers and Sorokin's Chinese were not slaves working on latifundia. See Tenney Frank, "Recent Work on the Economic History of Ancient Rome," Journal of Economic and Business History, I (Nov., 1928), 110; Pitirim Sorokin, Contemporary Sociological Theories (New York: Harper & Brothers, 1928), 591-94.

[2]Cf., Robert M. Salter, "Methods of Applying Fertilizers," in U. S. Department of Agriculture, Yearbook of Agriculture, 1938: Soils & Men (Washington, 1938), pp. 558ff.

guarantee maximum supervision to obtain minimum results. As observed in Chapter II, planters did not have the equipment necessary to bury fertilizers by deep plowing, and the large estates, which inevitably grew out of a slave economy, made fertilization almost a physical and economic impossibility. In certain parts of the Upper South planters solved the problem by selling some of their slaves and transforming them into liquid capital with which to purchase commercial fertilizers. The smaller slave force made possible greater supervision and smaller units. This process, to which we shall return in Chapter VI, depended on the profitable sale of Negroes to the new areas of the Lower South and was therefore applicable only to a small part of the South. In the Southeast below North Carolina the use of fertilizers proceeded, as did reform in general, with painful slowness. Despite the pleas of the reformers, the reports of state geologists, and the efforts of local or state agricultural societies, county after county reported to the federal Patent Office, which was then responsible for agricultural affairs, that little fertilization of any kind was taking place.[1]

Many planters used cotton seed as fertilizer in the 1850's; but it was most successful in the cornfields, and the cotton fields had to depend largely on barnyard manure. This dependence was not in itself a bad thing, for barnyard manure

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[1]Cf., e.g., U. S. Commissioner of Patents, Reports on Agriculture, 1847 (p. 387); 1849 (pp. 144, 170); 1851 (p. 329); 1854 (pp. 114f). The list could be expanded greatly.

probably supplies plants with needed iron. But Southern livestock was not kept in adequate numbers to do much good.[1] To be of use barnyard manure required considerable care in storage and application, and even today much of it is lost. In 1938 Department of Agriculture experts estimated that one-half was dropped on uncultivated land and that the valuable liquid portion of the remainder was often lost. Improper application rendered much of what was left useless, for manure must be applied at the right time according to local soil conditions and climate.[2] This fertilizer requires all the time, supervision, interest, and care that farmers can provide and that are almost inconceivable on plantations worked by slaves under the supervision of overseers or planters with little desire to spend much time watching their laborers.

The poor quality of the livestock and the careless way in which it was tended led Oscar M. Lieber, South Carolina state geologist, to remark in 1856 that "no manure worth mentioning is saved under the present system."[3] J. M. Gallant told the Agricultural Society of Amite County (Mississippi) in 1857 that the methods used to store what little manure was accumulated resulted in a two-thirds depreciation of its

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[1]See Chapter V.

[2]Robert M. Salter and C. J. Schollenberger, "Farm Manure," in U. S. Department of Agriculture, Soils & Men, p. 445.

[3]South Carolina Mineralogical, Geological, and Agricultural Survey, Annual Report on the Survey of South Carolina, 1856 by Oscar M. Lieber (Columbia, 1856), p. 128.

value.[1]

Even in such livestock raising states as Kentucky the accumulation of sufficient manure was difficult. Stock raising was largely a separate industry, and tobacco and hemp growers often did not keep an adequate supply of animals. The increase in the number of animals sold out of the state intensified the difficulty. Barnyard manure cost about two dollars per ton in Kentucky in the 1850's, and the state geologist estimated that about 400 tons were needed to restore an exhausted acre. Thus the accumulation of manure by stock raisers did not necessarily benefit the planters and farmers of the state.[2] For good reason the state geologist of Mississippi scoffed at those who urged a great increase in cattle raising in order to produce more manure. He pointed out that it was ridiculous to think that animals could be profitably kept for manure alone. Half the slave force, he added, would be required to give the animals the care they needed.[3]

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[1]The Mississippi Planter and Mechanic, I (Dec., 1857), 286. Cf., Maryland, Annual Report of the State Agricultural Chemist to the House of Delegates, 1850, by J. Higgins (Annapolis, 1850-56), p. 16; Report for 1851, p. 25.

Karl Kautsky suggests that as the Roman latifundia grew and cattle were entrusted to slaves the amount of manure declined and the exhaustion of the soil proceeded with increasing rapidity. Foundations of Christianity, trans. Henry F. Mins (New York: S. A. Russell, 1953), p. 53.

[2]Kentucky Geological Survey, Annual Report of the State Geologist, 1857 by David Dale Owen (Frankfort, 1857), pp. 25, 48.

[3]Mississippi Geological Survey, Report on the Geology and Agriculture of the State of Mississippi by Eugene W. Hilgard (Jackson, 1860), pp. 250f.

The difficulties in accumulating barnyard manure stirred a growing interest in marl, which was so highly recommended by Edmund Ruffin as an agent capable of counteracting soil acidity and of "deepening the soil" by lowering the level of good earth.[1] In 1853 he claimed that land in Virginia that had been properly marled had increased its value by 200 per cent.[2] Craven suggests, however, that guano should be credited with much of the improvement in Virginia and Maryland and that marl was not always useful.[3] This judgment corresponds to what Department of Agriculture experts now say about marl as a fertilizer.[4] Nevertheless, guano was expensive, and marl was readily at hand; so, Southern state geologists concentrated on finding marl deposits and making recommendations for their exploitation.[5] The state geologist of

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[1] Calcareous Manures, p. 169.

[2] Virginia State Agricultural Society, Journal of Transactions, I (1853), 11.

[3] Craven, Soil Exhaustion, pp. 148ff.

[4] Oswald Schreiner, Albert R. Merz, and B. E. Brown, "Fertilizer Materials," in U. S. Department of Agriculture, Soils & Men, p. 517.

[5] South Carolina Agricultural Survey, Report on the Commencement and Progress of the Agricultural Survey of South Carolina for 1843 by Edmund Ruffin (Columbia, 1843); Missouri Geological Survey, Second Annual Report by G. C. Swallow (Jefferson City, 1855), pp. 146ff; Kentucky Geological Survey, Report for 1854, p. 19; Delaware Geological Survey, Memoir on the Geological Survey of the State of Delaware, 1837-38 by James C. Booth (Dover, 1841), p. viii; North Carolina Geological Survey, Report of Professor /Ebenezer/ Emmons (Raleigh, 1852), p. 53; Tennessee Geological Survey, Seventh Geological Report to the General Assembly, 1843 by G. Troost (Nashville, 1843), pp. 32ff; J. H. Allen, "Some Facts Respecting the Geology of Tampa Bay," The American Journal of Science and Art, Series 2, I (Jan., 1846), 41.

Mississippi, L. Harper, even suggested that marl was superior to guano since its benefits lasted for several years whereas guano's were bestowed upon a single crop. He admitted that few in Mississippi could afford guano anyway, and we may pardon his excessive praise of a fertilizer that his readers had some chance to obtain.[1] Yet by 1860 few in Mississippi used either guano or marl. Perhaps in time more would have been used on the plantations, but one may question whether the cost of transporting the quantities required for large estates could have been borne by more than a few. We know that not much marl was used in Alabama or Georgia by 1850, and there is no evidence that the situation changed much during the Fifties.[2] When marl was used, the methods of application were usually so bad that Ruffin despaired of ever teaching planters to use it properly. To make matters worse, the errant planters only succeeded in convincing themselves that Ruffin was, after all, only a "book farmer."[3]

The great hope of the planters and farmers with exhausted lands was Peruvian guano. The desire for guano reached notable

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[1]Mississippi Geological Survey, Preliminary Report on the Geology and Agriculture of the State of Mississippi (Jackson: 1857), pp. 17, 172.

[2]Alabama Geological Survey, First Biennial Report on the Geology of Alabama by M. Tuomey (Tuskaloosa, 1850), pp. 165f; see also the remarks of Governor Crawford of Georgia in Southern Cultivator, V (Jan., 1847), 3.

[3]See the report of Ruffin's experiences in the Alabama Geological Survey, First Biennial Report, 1850, p. 166.

proportions during the 1840's and 1850's: whereas less than 1,000 tons were imported from Peru during 1847-48, more than 163,000 tons were imported during 1853-54.[1] In a single year the 17,000 white inhabitants of Kent County, Delaware, reportedly spent $175,000 for guano,[2] and the citizens of Maryland, Virginia, and Delaware reclaimed their worn-out land largely with its aid. Guano was particularly good for wheat, and the planters of the tidewater had excellent results with it. Planters and farmers in the interior benefited much less, for they were concentrating on improving the quality of their tobacco crops, and guano tended to make the tobacco coarse. Then too, they generally had small slave forces to begin with and could not so readily sell surplus slaves to pay the large bills for commercial fertilizers.[3]

Guano, like other fertilizers, required considerable care in application; in fact, if not used intelligently it could damage the land. The less expensive American guano required more attention and contained hard lumps that had to be pulverized carefully.[4]

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[1]U. S. Commissioner of Patents, Report on Agriculture, 1854, p. 93. In 1860 The Southern Planter published a special advertising supplement in which eight of twenty pages were devoted to advertisements for guano. See XX ("Advertising Sheet no. 8).

[2]Gouverneur Emerson, Address Delivered before the Agricultural Society of Kent County, Delaware, Oct. 15, 1857 (Philadelphia: National Merchant Printers, 1857). p. 8.

[3]Cf., De Bow's Review, XIII (Dec., 1852), 627-30; U. S. Commissioner of Patents, Report on Agriculture, 1851, p. 286.

[4]Joseph Jones, First Report to the Cotton Planters' Convention of Georgia on the Agricultural Resources of Georgia (Augusta: Published by the Convention, 1860), pp. 64ff; Hunt's Merchants Magazine, VIII (May, 1843), 485; Frederick

Rosser H. Taylor and Weymouth T. Jordan claim that guano made an impact on the Lower South in the 1850's. Taylor asserts that the supply could not keep up with the demand in the Southeast, but he admits that, in South Carolina at least, application was largely restricted to the coastal areas.[1] Jordan insists that guano was used widely in North Carolina, but his evidence, drawn from an article in an agricultural periodical, is limited and unsupported. He refers only to the "noticeable" trade in Charleston and Savannah and provides no figures for the imports through New Orleans and Mobile.[2]

When guano was used at all in the Lower South indications are that the wealthy coastal planters applied it to their badly exhausted fields.[3] True, some guano was imported into the Cotton Belt by Thomas Affleck and others, but the agricultural periodicals, which provided so much detail on all innovations, were unable to supply figures on the extent of the sales.[4] Most of the counties in the Lower South

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Law Olmsted, Journey in the Seaboard Slave States in the Year 1853-54 with Remarks on Their Economy (New York: Dix and Edwards, 1856), p. 303.

[1]"The Sale and Application of Commercial Fertilizers in the South Atlantic States to 1900," Agricultural History, XXI (Jan., 1947), 47f; and "Commercial Fertilizers in South Carolina," South Atlantic Quarterly, XXIX (April, 1930), 181, 184f.

[2]"The Peruvian Guano Gospel in the Old South," Agricultural History, XXIV (Oct., 1950), 218f.

[3]Cf., the report in the Diary of John Berkeley Grimball, III, 95, in the University of North Carolina; and the Capell Diary, 1849-50, last page.

[4]Cf., The American Cotton Planter, I (Feb., 1853), 51: II (Feb., 1854), 61f. Robert W. Williams, in his essay on

polled by the Patent Office in the early Fifties failed to respond to questions about fertilizers, and we may suspect that there was nothing to report. The counties and localities that did respond--Habersham and Harris in Georgia, Laurensville in South Carolina, Edwards in Mississippi, Jackson in Alabama, and others--generally reported no commercial fertilizers in use and little fertilization of any kind.[1]

According to the Report on Agriculture submitted by the Commissioner of Patents in 1854, about 300 pounds of Peruvian guano were needed to fertilize an acre of exhausted land, and a second dressing of 100 to 200 pounds was recommended for land planted to Southern staples.[2] That is, about 450 pounds of guano were needed per acre of cotton land.[3] Although the American Guano Company claimed that 200 to 350 pounds of its brand were enough, the more objective De Bow's Industrial Resources insisted that 900 pounds of this inferior but adequate fertilizer were needed.[4] At forty dollars per ton

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Affleck's reforming activities, fails to mention the venture, and I have not been able to find any indication that he was successful. See Williams' "Thomas Affleck: Missionary to the Planter, the Farmer, and the Gardener," Agricultural History, XXXI (July, 1957), 40-48.

[1]U. S. Commissioner of Patents, Reports on Agriculture, 1851 (p. 318, 322, 336); 1852 (pp. 73, 82, 89).

[2]Pp. 100f.

[3]Local conditions made a great difference; in some cases experiments with only 200 pounds were successful. See e.g. The American Cotton Planter, I (Feb., 1853), 61.

[4]American Guano Company, Report of Experiments with American Guano (New York, 1860), p. 9; De Bow, Industrial Resources, I, 66.

a planter with 250 acres would have had to spend somewhere between $500 and $2,500 for this second-rate guano; and since the effects of all guanos were not lasting he would have to spend it regularly. Whatever the advantages of the relatively inexpensive American variety, it required more cash than most planters had.

Some guanos, the Venezuelan for example, could be obtained for as little as thirty dollars per ton. Even that price was too high for most planters, and the product was of dubious value.[1] Peruvian guano sold for forty-five or fifty dollars per ton during the Fifties, but the costs of transportation were such that planters in Mississippi had to pay sixty-five dollars and those in the Southeast about sixty dollars.[2]

Consider the experience of Captain A. H. Boykin of the Sumter District in South Carolina. He applied nine tons during one year of the 1850's and smaller amounts in other years. Those nine tons sufficed for from forty to sixty acres (the exact number of acres fertilized was not given) and could not have cost less than $450. Boykin owned 4,314 acres, so his expenditures benefited only a tiny portion of his estate.[3] In the interior of South Carolina the expense

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[1] Hunt's Merchants' Magazine, XXXIV (March, 1856), 440. Often these inferior guanos were sold at high prices and labeled Peruvian guano. See Maryland, Annual Reports of the State Agricultural Chemist, 1853 (pp. 36f), 1855 (pp. 84ff).

[2] Mississippi Geological Survey, Preliminary Report, 1857, p. 24; R. H. Taylor, Agricultural History, XXI (Jan., 1947), 47.

[3] Boykin Papers, expenditures for 1852-59, in the University of North Carolina.

would have been at least $540 and in Mississippi at least $585. When one considers how large the plantations of the Cotton Belt were and how carelessly and wastefully the slaves worked, planters cannot be blamed for ignoring the results of neat experiments conducted by a few unusual men like David Dickson of Georgia or Noah B. Cloud of Alabama.[1] James S. Peacocke of Redwood, Louisiana, summed up some of the planters' problems:

> In respect to our worn out lands, it is almost useless for anyone to waste paper and ink to write to the Southern planter telling him to manure. It is well enough for Northern farmers to talk; they can well afford to fertilize their little spots of ten or a dozen acres; but a Southern plantation of 500 or 600 acres in cultivation would require all the manure in the parish and all the force to do it justice... Again, we have no time to haul large quantities of manure to the field, for it generally takes until January to get all our cotton, and we have to rush it then, to get time to make repairs before we go to plowing for our next crop.[2]

Peacocke was writing about barnyard manure, but all that he needed to add in order to account for other fertilizers was that few planters, and far fewer farmers, could afford to

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[1]Dickson spent between $7,000 and $10,000 per year for commercial fertilizers for his cotton fields. He was a remarkable manager, kept considerable livestock, and provided thoroughgoing supervision for his fifty-five slaves. Cloud had only a few slaves and was essentially a working farmer. On Dickson see Ralph B. Flanders, Plantation Slavery in Georgia (Chapel Hill: University of North Carolina Press, 1933), p. 91; and Chester MacArthur Destler, "David Dickson's 'System of Farming' and the Agricultural Revolution in the Deep South, 1850-1885," Agricultural History, XXXI (July, 1957), 30-39. On Cloud see Weymouth T. Jordan, "Noah B. Cloud's Activities on Behalf of Southern Agriculture," Agricultural History, XXV (April, 1951), 53-58, esp. p. 55.

[2]The American Agriculturalist, V (Sept., 1846), 273.

purchase commercial fertilizers.[1]

Crop Rotation

Rotation of staple crops with alfalfa, clover, and other legumes might have protected and restored Southern soils. Rotation helps counteract the effects of leaching and erosion, and green manure, although perhaps less useful than barnyard manure, increases the supply of nitrogen in the soil. Moreover, as Ebenezer Emmons, state geologist of North Carolina, pointed out, marl could be harmful if too much were applied; proper rotation of crops and plowing under the peas could offset the danger of excessive lime.[2]

The South is not good grass country, but a number of soil-improving crops could have been grown: alfalfa, cowpeas, oats, rye, several clovers, hairy vetch, and others.[3] Although nitrogen manuring for cereals tends to encourage the growth of the straw relative to the grain, experiments indicate that the reverse is true for cotton and corn. Yet the Lower South accounted for an insignificant portion of the modest grass and clover seed output of the slave states. John Hebron

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[1]Mississippians generally admitted that no plantation or large farm could afford the cost of using guano or other commercial fertilizers. See Moore, pp. 194f.

[2]North Carolina Geological Survey, Report, 1852, p. 45.

[3]A. J. Peters and Roland McKee, "The Use of Clover and Green Manure Crops," in U. S. Department of Agriculture, Soils & Men, p. 442; Hugh Hammond Bennett, p. 17.

Moore suggests that the production of cowpeas in Mississippi is underestimated by historians, who fail to realize that cowpeas were left in the field for livestock and therefore not harvested. His statistical analysis is, however, built on a great deal of supposition. Probably he is quite right in saying that far more cowpeas were produced than is generally appreciated, but he himself admits that the cotton-corn-cowpea sequence did not return enough food elements to the soil to prevent a steady deterioration of fertility.[1]

There were exceptions to the no-rotation rule. Ruffin used a fine six-field system, and a fellow Virginian, Colonel Tulley, rotated his wheat with clover and got excellent results.[2] Most planters, especially in the Cotton Belt, were unwilling, and more often economically unable, to take land away from their cash crop. The factors that impeded the accumulation of adequate livestock made rotation difficult, for there was not much chance of turning hay into cash. The slaves were most productive when concentrated in gangs in the cotton fields, and the more their tasks were varied the less was accomplished.

Even an enlightened planter like M. W. Philips generally ignored legumes and depended upon a rotation of cotton and

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[1]Moore, pp. 60, 124, 176.

[2]Craven, Ruffin, p. 86; Niles' Weekly Register, LXIX (Oct. 11, 1845), 92.

corn, with only a few acres put aside for oats and vegetables. Alexander McDonald of Eufaula, Alabama, boasted of a system of rotation that assigned 267 acres to crops other than cotton. Of these, however, 200 were planted to corn. Of the 900 or so acres cultivated on the estate of George Noble Jones in Florida only about 150 were given over to oats, and no clover was planted.[1] In 1860 Eugene W. Hilgard, Mississippi state geologist, wrote that the only rotation practiced on a large scale was that of cotton and corn, and similar reports came from throughout the Lower South.[2]

Plantations, Farms, and Exhausted Lands

Phillips questions the thesis that plantation slavery was responsible for soil exhaustion and draws attention to the type of land settled by the big planters. He insists

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[1] The American Agriculturalist, V (Jan., 1846), 22, for McDonald; for Philips see F. L. Riley (ed.) "Diary of a Mississippi Planter: M. W. Philips, Jan. 1, 1840 to April, 1863," Publications of the Mississippi Historical Society, X (1909), 339, 445. For Jones see J. D. Glunt and U. B. Phillips (eds.), Florida Plantation Records from the Papers of George Noble Jones ("Publications of the Missouri Historical Society," St.Louis, 1927), records for 1855-56. See also Hopeton Plantation Record Book, 1818-41, for the years 1820-28, as an illustration of the same procedure in an earlier period; records in the Library of Congress.

[2] Mississippi Geological Survey, Report, 1860, p. 241; The St. John's Colleton Agricultural Society (S.C.), Report of the Special Committee on Professor Shephard's Analysis of the Soils of Edisto Island (Charleston: Published by the Society, 1840), pp. 9, 13; U. S. Commissioner of Patents, Report on Agriculture, 1852, p. 94; Report, 1860, pp. 224-38, esp. pp. 226f. The Civil War did little to solve the problem. For a discussion of the difficulties of practicing rotation under the share and tenant systems see Clyde E.Leighty, "Crop Rotation," in U. S. Department of Agriculture, Soils & Men, pp. 406-30, esp. p. 423.

that the plantation system was rooted in the alluvial areas of the Lower South and that exhaustion was due primarily to the farmers of the Piedmont who "cropped and cleared out."[1]

First, note that the farmers of the Piedmont resorted to exploitative methods after the frontier conditions had passed because they were in an unequal competition with slave-driven estates; therefore, if the plantations were not responsible for exhaustion, the slave system was responsible for the persistence of frontier methods that continued to exhaust the soil and made it impossible to reclaim worn-out land.[2] Secondly, Phillips seems to have made a hasty generalization, for the alluvial lands of the South are limited to the Mississippi Valley, the Texas and Carolina coasts, and a few other areas; the plantation system and the large slaveholdings spread well beyond the alluvium. Once the nonalluvial soils deteriorated plantation slavery could not have been expected

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[1]"Plantations with Slave Labor and Free," American Historical Review, XXX (July, 1925), 747.

[2]The same objection applies to the remarks of M. Rostovtseff, who asserts that Roman fields were exhausted by grain-growing peasants. See "The Decay of the Ancient World and Its Economic Explanations," The Economic History Review, II (Jan., 1930), 210f. Since the coloni tilled much of the soil planted to grain Rostovtseff's observation, even if valid, does not prove that slavery was not an exhausting system. The coloni were an integral part of the slave economy as a whole, and systems of dependent labor (slave or half-free) generally produce similar results unless special incentives are provided. See the results of recent studies pertaining to the United States: J. Hoyle Southern, "Land Tenure and Soil Conservation," in The Social and Economic Significance of Land Tenure in the Southwestern States. A Report of the Regional Land Tenure Research Project, ed. Harold Hoffsommer (Chapel Hill: University of North Carolina Press, 1950, 216f; and M. R. Cooper and others, "The Causes: Defects in Farming Systems and Farm Tenancy," in U. S. Department of Agriculture, Soils & Men, pp.148-57.

to survive merely in the alluvial districts. The great plantation areas of central Mississippi and Alabama, for example, were not alluvial and were subjected to the threat of exhaustion.

Phillips' contention that the alluvial soils were inexhaustible must also be modified. He seems to have accepted the opinion of antebellum writers like Sir William Howard Russell and George White, who insisted that the alluvial soils and even some of the nonalluvial soils of the South were indestructible.[1] This opinion, challenged in its own day,[2] was not wholly correct. The alluvium of South Carolina, for instance, was being destroyed by effects of the cultivation of higher regions, where wasteful measures depleted the protective forests and caused inundations in the low country.[3] The frontier had long passed in South Carolina; the exploitation of poor upland regions resulted from the concentration of wealth engendered by slavery. Although the plantation system did not destroy the alluvial soils direct, its indirect effects damaged them.

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[1]Sir William Howard Russell, My Diary North and South (Boston: T.O.H.P. Burnham, 1863), p. 270; George White, Statistics of the State of Georgia (Savannah: W. T. Williams, 1849), p. 38.

[2]Cf., De Bow, Industrial Resources, I, 356.

[3]South Carolina Mineralogical, Geological, and Agricultural Survey, Report, 1856, p. 105.

The Exhaustion of the Soils of the Lower South

Charles Sackett Sydnor, in calculating charges arising from the depreciation of the land in Mississippi in the 1850's, estimates a cost of three per cent per year.[1] Thomas P. Govan, in a critique that has gained wide acceptance, challenges this estimate with the assertion that there can be no justification for assuming that the state's land would be exhausted after only thirty-three years. That land is still growing cotton, he argues, and the costs of manuring and preparing the soil might have been offset by the increased yields produced by these measures.[2]

We have seen the kind of measures that were taken to restore the soil, and the facts concerning the rapid deterioration of Mississippi's soils contradict the suggestion that a significant increase in yields was effected. Daniel Lee, editor of the Southern Cultivator, estimated in 1858 that forty per cent of the South's cotton land was already exhausted, and he was given considerable support by other competent observers.[3] Mississippi hired several able geologists and agronomists to study the problem, and their reports should dispel any lingering doubts. L. Harper reported in

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[1] Slavery in Mississippi, pp. 196ff.

[2] "Was Plantation Slavery Profitable," The Journal of Southern History, VIII (Nov., 1942), 522.

[3] Southern Cultivator, XVI (Aug., 1958), 233; speech of Garnett Andrew of Georgia in The Southern Central Agricultural Society, Transactions, 1851 (Macon, 1852); De Bow, Industrial Resources, II, III.

1857 that the state's nonalluvial areas, especially those with prairie soils, were rapidly exhausting. "Mississippi is a new state," he wrote. "It dates its existence only from 1818; and notwithstanding all its fertility, a large part of the state is already exhausted; the state is full of old deserted fields."[1] Harper's successor, Eugene W. Hilgard, reported in 1860 that the state's land exhausted after about thirty years of cultivation. Some parts of Mississippi, he added, reminded him of the descriptions of Europe after the Thirty Years' War.[2] As early as 1842 The Southern Planter had reported that the interior of Mississippi was full of worn-out land, and the soil deteriorated steadily thereafter.[3]

Similar accounts came from the Southeast, where few doubt that much of the land was exhausted.[4] Even the western parts of the Upper South suffered greatly. Chitwood Allen, president of the Kentucky State Agricultural Society, told that group in 1841 that the best districts in the state were exhausting rapidly.[5] In 1854 the state geologist expressed

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[1]Mississippi Geological Survey, Preliminary Report, 1857, p. 171, also pp. 19, 25.

[2]Mississippi Geological Survey, Report, 1860, pp. 238f.

[3]The Southern Planter (Natchez), I (Jan., 1842), 13.

[4]Georgia did not conduct a geological or agricultural survey in the late antebellum period; but see the report of chemist Joseph Jones, Chapter XII.

[5]Presidential Report (Lexington, 1841), pp. 3-8.

similar fears about the rich soil of the bluegrass country.[1]

Govan's assertion that Mississippi still grows cotton is yet more puzzling than his doubts about the extent of exhaustion during the antebellum years. Certainly Mississippi still grows cotton, but in 1930 the South (the ex-slave states except Missouri, Maryland, Delaware, and Texas), with only one-sixth of the nation's crop land, accounted for two-thirds of the fertilizer bill. Forty-one per cent of the cost of farm operations in the South went into fertilizers, whereas the cost in the rest of the country was only five per cent. More than seventy per cent of the South's farm income was absorbed by these expenditures, although only fifteen bushels of corn were produced per acre, compared with forty-three in New England and thirty-six in the Middle Atlantic states.[2] In parts of South Carolina in 1920 about 1,000 pounds of fertilizer were needed per acre of cotton land, and the general requirements of Mississippi ranged from 200 to 1,000 pounds.[3] The South still grows cotton only

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[1]Kentucky Geological Survey, Annual Report, 1854, pp. 276ff, 374. Even the hemp lands wore out under the one crop system, although hemp is relatively nonexhausting. See James F. Hopkins, A History of the Hemp Industry in Kentucky (Lexington: University of Kentucky Press, 1951), p. 24.

[2]Howard W. Odum, Southern Regions of the United States (Chapel Hill: University of North Carolina Press, 1936), pp. 65-68; Rupert B. Vance, Human Geography of the South. A Study in Regional Resources and Human Adequacy (Chapel Hill: University of North Carolina Press, 1932), p. 97.

[3]Hugh Hammond Bennett, pp. 38, 80.

because of tremendous expenditures for fertilizers with which to strengthen its exhausted soils.

Slavery and the plantation system led to agricultural methods that depleted the soil. In this respect the experience of the South did not differ much from that of the Northern frontier; but slavery forced the region into continued dependence upon exploitative methods after the frontier had passed. Worse, it prevented the reclamation of the greater part of the worn-out lands. The plantations were too large to fertilize easily; the necessary livestock was missing; the planters and farmers could not afford commercial fertilizers; proper crop rotation could be practiced only with great difficulty; and the labor force was of poor quality. Under such circumstances, notwithstanding successes in some areas, the system could not reform itself. When reforms did come to Maryland and Virginia and to certain counties of the Lower South it was either at the expense of slavery altogether or by a reduction in the size of slaveholdings and the transformation of the surplus slaves into liquid capital.

CHAPTER IV

THE ATTEMPTED ADJUSTMENT OF SOUTHERN AGRICULTURE - I DIVERSIFICATION OF CROPS

The 1840's were a turning point for American agriculture: whereas less than ten million dollars worth of foodstuffs were exported in 1837, almost seven times as much were exported ten years later; and at the same time, the domestic market for agricultural produce expanded at a quickening pace. Yet the agrarian South found itself falling behind the free states in agricultural production, as in almost everything else. Although the slave states retained a higher output of corn than the North, the gap was narrowing, and in view of the greater consumption of corn in the South, the region's relative position was not good. Hinton Helper--whatever his sins against statistical method--justly taunted Southerners for their pride in an agriculture that could not feed them. He observed that the combined cotton, rice, tobacco, hemp, and sugar production of the South in 1850 did not equal in value the hay crop of the free states.[1]

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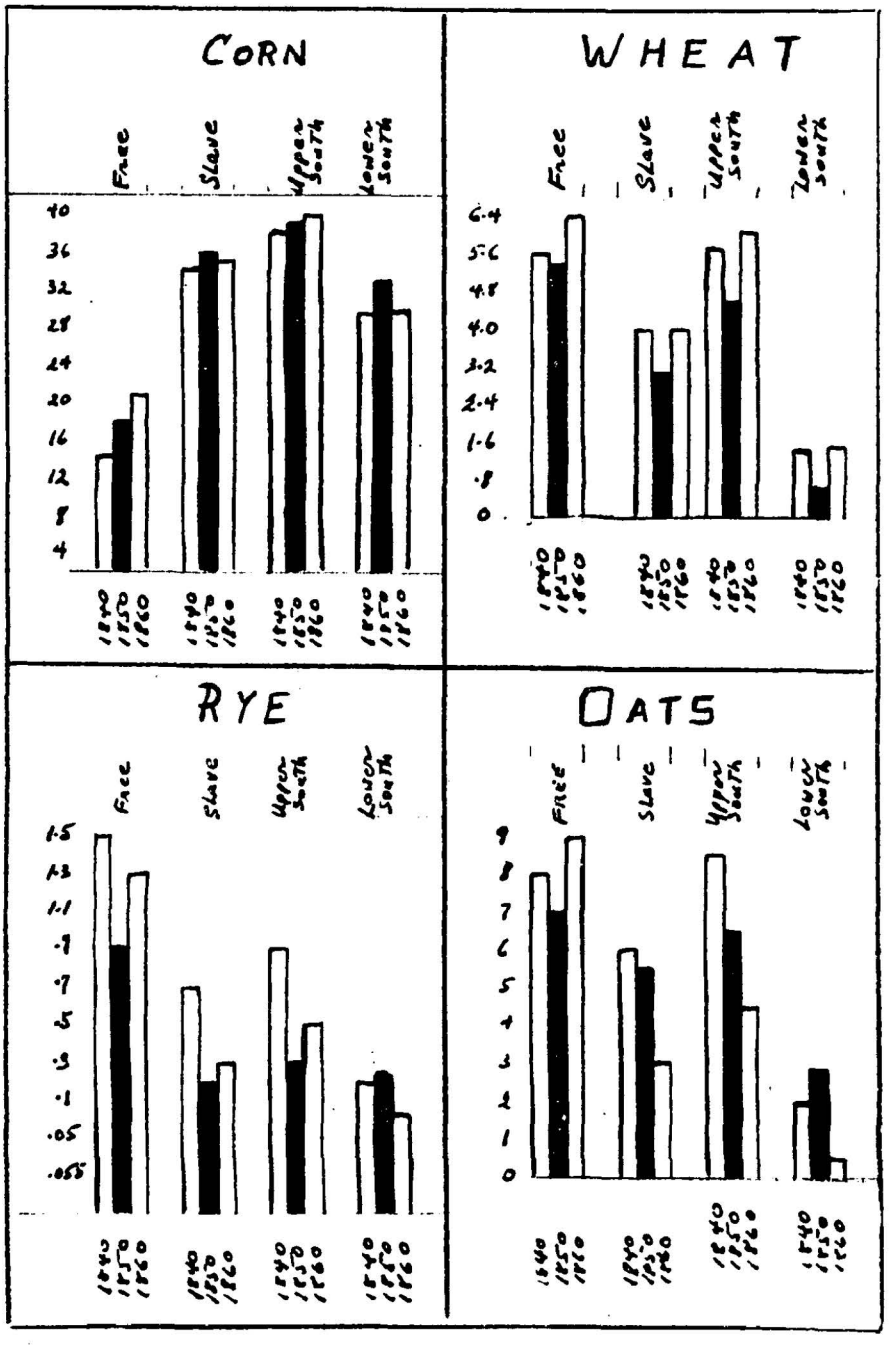
[1]Hinton Rowan Helper, The Impending Crisis of the South: How to Meet It (New York: Burdick Brothers, 1857), pp. 33ff, 46. Arthur C. Cole investigated Helper's claim and concluded that he was correct. Cole's conclusion is presented in The Irrepressible Conflict (p. 59), but space prevented him from publishing the data with which he worked.



GRAPH 1

PER CAPITA CEREAL PRODUCTION, 1840-1860
(in bushels)

Computed from Census Reports for 1840, 1850, 1860.

The statistics for per capita production of four principal cereals (corn, wheat, oats, and rye) illustrate the comparative position of the slave economy. Graph I shows the data for the free states, the slave states as a whole, the Upper South (including Tennessee and North Carolina) and the cotton states of the Lower South. The free states were rapidly closing the gap in per capita output of corn: Northern output rose sixty-four per cent between 1840 and 1860, whereas Southern output increased by less than three per cent. Northern wheat production increased significantly during the two decades, whereas Southern did not; and the Northern per capita oat production rose ten per cent, whereas Southern was halved. Perhaps of greatest interest, the per capita output of three of the four cereals fell in the Lower South. The exception, wheat, was not produced in significant quantities below the southern border of Tennessee and North Carolina.

Thus, during 1850-1860, when national grain exports were rising, those of the South's leading port, New Orleans, suffered a sharp decline: flour exports dropped from 251,000 barrels to 80,000; wheat from more than a million bushels to 2,000; corn from almost three million bushels to less than a quarter of a million, and so forth. The city's grain exports consisted of Western produce, which largely went east after 1850. Foodstuffs sent to New Orleans in the Fifties were chiefly those intended for the Black Belt.[1]

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[1]Cf., Louis Bernard Schmidt, "The Internal Grain Trade of the United States, 1850-60, Iowa Journal of History and

From the beginning of the century the Cotton Belt could not feed itself. Although statistics are scarce, the overland trade between Kentucky, Tennessee, and the Northwest on the one hand, and the Lower South on the other, is known to have been large. Throughout the 1840's South Carolina alone probably imported between 260,000 and 300,000 bushels of corn annually, although the amount seems to have declined in the Fifties.[1] Cincinnati alone in 1845 sent south 110,000 barrels and 304,000 pounds of bulk pork and almost 150,000 barrels of flour, together with large amounts of other foodstuffs.[2] The port of Mobile increased its imports for sale in the Cotton Belt considerably between 1850 and 1860: the importation of pork and flour doubled and that for corn rose by twenty-five per cent.

Politics, XVIII (Jan., 1920), 110; E. Merton Coulter, "The Effects of Secession upon the Commerce of the Mississippi Valley," Mississippi Valley Historical Review, III (Dec., 1916), 276; Frank H. Dixon, A Traffic History of the Mississippi River System (Washington, D.C.: National Waterways Commission, Doc. #11, 1909), p. 34; R. B. Way, "The Commerce of the Lower Mississippi in the Period 1830-1860," Mississippi Valley Historical Association, Proceedings, X (1918-19), 62; Emory R. Johnson and others, History of Domestic and Foreign Commerce of the United States (2 Vols.; Washington: Carnegie Institute of Washington, 1915), I, 242.

[1]On the early trade see Elizabeth L. Parr, "Kentucky's Overland Trade with the Ante-Bellum South," The Filson Club History Quarterly, II (Jan., 1928), esp. pp. 71-75, 81; for the importations into South Carolina see De Bow's Review, I (June, 1846), 486f, and the U. S. Commissioner of Patents, Report on Agriculture, 1844, p. 69. For Florida see Dorothy Dodd, "Florida in 1845," Florida Historical Quarterly, XXIV (July, 1945), 8.

[2]Henry Clyde Hubbart, The Older Middle West, 1840-1880. Its Social, Economic and Political Life and Sectional Tendencies Before, During and After the Civil War (New York: D. Appleton-Century Co., 1936), p. 79; William A. Mabry, "Ante-Bellum Cincinnati and Its Southern Trade, in American Studies in Honor of William Kenneth Boyd, ed. David K. Jackson (Durham, N. C.: Duke University Press, 1940).

This reliance of the agrarian South on food imports worried thinking Southerners.[1] In 1855 James L. Orr told the South Carolina Institute for the Promotion of Agriculture, the Mechanic Arts, and Manufactures that the importation of foodstuffs transferred wealth to the border states and to the Northwest and reduced drastically the profits of cotton plantations.[2] Even during the 1850's, when reformers claimed some progress in their campaign to convince planters to raise more corn and pork, farmers and planters in the Mississippi cotton counties spent up to $550 per year for food and those in the Georgia cotton counties that I have studied spent up to $250 annually.[3]

Edmund J. Forstall, the House of Baring's able and informed agent in Louisiana, wrote in the 1840's that the cotton and sugar planters of Louisiana reduced corn production when the prices of their staple were high and reversed the procedure when prices fell.[4] This common-sense observation has been repeated by historians ever since, and although

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[1]Of course there were the usual rationalizations. David Christy, for example, insisted that Western farmers were being made dependent on the Southern market. The significance of the growing two-way trade between East and West escaped him. See Cotton is King; Or the Culture of Cotton and Its Relation to Agriculture, Manufactures, and Commerce; to the Free Colored People; and to Those Who Hold that Slavery is in Itself Sinful (2nd ed., rev. & enl.; New York: Derby & Jackson, 1856), pp.145ff.

[2]De Bow's Review, XIX (July, 1855), 21.

[3]See the analysis in the special appendix to Chapter V.

[4]The Agricultural Productions of Louisiana, Embracing Valuable Information Relative to the Cotton, Sugar, and Molasses Interests, and the Effect upon the Same of the Tariff of 1842 (New Orleans: The Author, 1845), p. 31.

many once held slavery responsible for the South's unfortunate dependence upon a few crops, recent scholarship has generally rejected the idea. One of the recent viewpoints, presented most clearly by Gray, insists that industrial capitalism effected a worldwide division of labor within which the South was especially equipped to grow certain crops. He adds that Southern staples required year-long labor and made alternation of crops impossible.[1]

If the South grew cotton because there was a persistent demand for it, if the region willingly accepted that role in the worldwide division of labor, then surely cotton production must have been consistently profitable. "If cotton cannot be grown to pay at the present rates," protested De Bow's Review, "it is assuredly certain it will not be raised."[2] But such was not the case. Low Prices prevailed for many antebellum years, and the 1840's were generally difficult for Southern agriculture. If the South voluntarily accepted cotton growing because it was profitable, then we need to know why production expanded in periods of falling

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[1]Gray, History of Agriculture, I, 458f. Contemporary Southerners sometimes used similar arguments. See e.g. Thomas Cooper, A Manual of Political Economy (Washington: Duff Green, 1834), p. 57. Alfred Holt Stone notes that the nonperishable nature of cotton made possible its concentration at the coast at a time when transportation and warehouse facilities were poor and long delays would have rendered many agricultural commodities worthless. "The Cotton Factorage System of the Southern States," American Historical Review, XX (April, 1915), 559.

[2]I (March, 1846), 233.

prices.[1]

Undoubtedly, farmers are slow to change their crops, but prolonged agricultural depressions are generally accompanied by a shift of capital and manpower to the cities. Slavery prevented the development of an economy in which industry could expand and made the South a victim of the declining position of agriculture. Moreover, natural conditions did not prevent the South from changing to other crops. Its long, warm summers and short, mild winters are ideal for a variety of crops, and in some sections two or three can be grown in a single year.[2]

Gray argues that the crops best suited to the South required a long growing season; one suspects that the long growing season was a factor in suiting those crops to the slave South. Cotton kept the slaves busy all year, and therefore "no time.../was/ lost in that idleness and unremunerative work which it was the planter's chief business to guard against."[3] So long as slave labor was used cotton or a similar crop was essential both for profit and for labor discipline. As Cairnes observed, a single laborer might

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[1]For correlations of price and output see W. J. Barbee, The Cotton Question. The Production, Export, Manufacture, and Consumption of Cotton. A Condensed Treatise on Cotton in All Its Aspects: Agricultural, Commercial, and Political (New York: Metropolitan Record Office, 1866), p. 108; U. S. Dept. of the Treasury, Registry of the Treasury, Reports on Commerce and Navigation: 1850 (pp. 20ff), 1855 (pp. 24f), 1860 (pp. 16f).

[2]Calvin B. Hoover and B. U. Ratchford, Economic Resources and Policies of the South (New York: The Macmillan Co., 1951), p.6.

[3]U. B. Phillips, Plantation and Frontier, I, 92-93.

cultivate twenty acres of wheat, but he could not handle more than three of cotton. Thus, this crop made possible the concentration of the labor force in gangs in the smallest possible area.[1]

A principal reason for the continuation of the one-crop system in periods of falling prices was the exigencies of the credit system. Planters operated with little liquid capital; a large part of their funds went to purchase slaves, and a good part of that which was left went toward maintaining an aristocratic style of living. Slaveowners bought everything, major items and minor, on credit. Since they pledged their crops in advance they were victimized by the credit mechanism and had little choice but to continue to expand cotton production despite falling prices. Of course this dependence on credit and a single crop is not a special problem of slavery, for it is common in agriculture generally. But the investments in slaves and consumption presented peculiar difficulties. The planters were, in any case, not small operators like sharecroppers and might have been expected to summon the resources to break out of their constraint.

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[1]Cairnes, The Slave Power, p. 50; cf., Max Weber, General Economic History, trans. Frank H. Knight (Glencoe, Ill.: The Free Press, 1950), p. 79.

[2]The crop lien was well known in the Old South. See Roger W. Shugg, Origins of Class Struggle in Louisiana. A Social History of White Farmers and Laborers during Slavery and after, 1840-1875 (Baton Rouge: Louisiana State University Press, 1939), p. 110; Charles S. Davis, The Cotton Kingdom in Alabama (Montgomery: Alabama State Department of Archives & History, 1939), pp. 34f; Matthew B. Hammond, The Cotton Industry, An Essay in American Economic History (New York: The Macmillan Co., 1897), p. 82.

Gray and the many others who try to absolve slavery from responsibility for the one-crop system do not consider that a profitable Southern economy need not have been linked with the export trade. They do not consider that industry might have arisen on the basis of a large home market. Gray even suggests that diversification of agriculture was often a step backward toward natural economy and away from commodity production.[1] But why was there no large Southern market for grains, meat, and vegetables? Slavery prevented the rise of a prosperous yeomanry and a large effective demand for industrial products; a weak rural market, together with other fruits of slavery, retarded industrialism and urbanization and prevented the growth of an urban market for a diversified agriculture.[2]

The agrarian reformers urged that planters grow an adequate supply of food for plantation consumption regardless of the price of staples. In general, they succeeded only

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[1]Gray, History of Agriculture, I, 458. Gray's point is valid only on the assumption of continued reliance upon slave plantations. See below, Chapter VI.

[2]For a summary of the ways in which the factorage system interfered with rational plantation management and adversely affected the whole economy see Stone, The American Historical Review, XX (April, 1915), esp. p. 563; also, Ralph W. Haskins, "Planter and Cotton Factor in the Old South: Some Areas of Friction," Agricultural History, XXIX (Jan., 1955), esp. pp. 2-5; and W. A. Low, "Merchant and Planter Relations in Post-Revolutionary Virginia, 1783-1789," Virginia Magazine of History and Biography, LXI (July, 1953), esp. p. 315f.

where the slave system declined sufficiently to permit the growth of an urban market for foodstuffs or where proximity to the free states permitted sale of commodities to Northern towns and cities. Where the plantation system remained intact, the reformers had great difficulty in convincing planters to follow their recommendations, and one suspects that economics, rather than ignorance or intransigence, had most to do with the failure.

Herbert Weaver argues that the reformers were quite successful in Mississippi, for corn production in the counties he studied rose by thirty-eight per cent between 1850 and 1860.[1] If, instead of working with his questionable sampling technique, we consider the state totals, a somewhat different picture emerges: per capita corn production fell slightly from 37.0 bushels to 36.7 during the decade.[2] In view of the prosperity of the decade Mississippians probably ate a bit more than before and possibly fed their animals more. Improved implements and machinery increased per capita free state corn yields substantially during 1850-1860. Yet, despite these considerations, which might lead us to expect improved per capita production, the reverse is true. Weaver, relying on the statistics for improved acreage, claims that

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[1] Mississippi Farmers, pp. 100ff.

[2] Computed from Statistical View of the United States, 1850: Compendium of the Seventh Census, pp. 171ff; Eighth Census of the U. S., 1860, Agriculture, pp. 184ff.

at least half the land of the big planters was given over to crops other than cotton. But Linden, in his critique, notes that census officials defined improved acreage so as to include land cleared for grass, grazing, or lying fallow.[1] Furthermore, the quality of the land is of decisive importance, and relevant data is unavailable. B. L. C. Wailes, the state geologist and agricultural surveyor, wrote in 1854 that if total corn output were distributed properly it might provide a "scant subsistence" for the farmers and planters of the state. He added that whole areas of the state, especially the northern cotton counties, had to depend on imports from Tennessee and Kentucky.[2]

The slave system made the augmentation of nonstaple production difficult, and the willingness or unwillingness of the planters to diversify their crops was not the major problem. To take slaves away from a single money crop a manager would have to divide his attention and supervise several operations simultaneously. The slaves were quick to take advantage and to work even less energetically and skillfully than usual; thus, planters despaired of making diversification pay. In the words of John D. Ashmore, a

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[1]Weaver, p. 49; Linden, p. 169. Linden also found serious errors in Weaver's calculations.

[2]Mississippi Agricultural and Geological Survey, Report, 1854, p. 186.

cotton planter from the Sumter District of South Carolina:

> In planting corn it is impossible for the master or overseer to be present at the dropping or covering of every hill. I have found that the best remedy against irregularity is to select a trusty woman (men are usually engaged at heavier work at this season) who covers, and is consequently present all the time, and hold her responsible not only for her own but for the work of both corn droppers and coverers--in other words to make an overseer of her for the time.[1]

Ashmore was probably a good psychologist, but what could "hold her responsible" mean and how could anyone be sure that the work was being done properly?

Slaveowning wheat growers, especially in the Lower South, found it difficult to compete with Northern farmers, for poor handling and packing generally depreciated the value of the flour.[2] Jonathan N. Herndon, a planter of the Newberry District of South Carolina, indicated that he and other planters in the older areas managed to improve grain production by reducing the acreage under cultivation by two-thirds and manuring and cultivating intensively.[3] Such a program required a small slave force and maximum supervision. Recent studies show that manuring corn with nitrogen fertilizer will yield good crops if the corn is

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[1]Plantation Journal, 1853-1857, p. 72; typescript in the University of North Carolina.

[2]The South Carolina Agriculturalist, I (Aug., 1856), 97f. This complaint was rarely heard in Virginia or Maryland, where the smaller slave force made possible more careful supervision. When handled properly Southern flour was rated among the finest in the country. See the report of Professor L. C.Beck of Rutgers in the U. S. Commissioner of Patents, Report on Agriculture, 1848, pp. 267f.

[3]The Southern Agriculturalist (Laurensville), I (Aug., 1853), 226.

planted close together and strict attention is paid to the manner of planting corn in rows forty-two inches apart, with seeds separated by eleven to fifteen inches.[1] Antebellum Americans had learned as much themselves, and Northern farmers planted carefully in two or three feet squares. Most Southerners, however, took fewer pains and planted corn in squares of from eight to fifteen or more feet. The failure to plant more closely was perhaps in part due to carelessness or ignorance, but more likely it was due to the poor quality of the land provided for crops other than cotton.[2]

Planters generally assigned their worst land to corn and other nonstaple crops. C. G. Parsons saw many acres that produced only four bushels of corn, and in South Carolina eleven bushels to the acre was about average.[3] The advanced Capell plantation in Amite County, Mississippi, produced between thirteen and eighteen bushels per acre, and other planters and yeomen who kept records--and these were undoubtedly the best--recorded similar amounts or less.[4] In the greater part of Georgia fifteen to twenty bushels

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[1]Sir E. John Russell, p. 65.

[2]The Arator, I (Nov., 1855), 235; The Farmer and Planter, II (March, 1851), 30; The Southern Central Agricultural Society, Transactions, p. 205; Moore, p. 116.

[3]Parsons, p. 81; Helper, pp. 69f; Carolina Planter, I (Feb. 5, 1840), 25f.

[4]Capell Diary, p. 124, andAccount Book, back of cover page. Cf., John Houston Bills Diary, III (July 20 and Sept. 15, 1859); Columbus Morrison Journal and Accounts, 1845-1862, Dec. 31, 1845. Both sets of papers are at the University of North Carolina.

of corn were maximum.[1] The cotton counties of Georgia averaged closer to twelve bushels and the diversified farming counties about eighteen.[2]

Wheat production below Virginia was shifted to land that was even worse than that used for corn. In Georgia the cotton counties yielded only eight bushels to the acre, and the general farming counties produced ten or twelve.[3] Similar results were reported from other states, although Southerners undoubtedly required enough wheat to necessitate importations.[4] Land given over to hay production was no better, and Olmsted estimated that Virginia, which was one of the best Southern states in this respect, produced less than one-eighth as much per acre as did New York or Massachusetts.

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[1]See the report of Dr. Whitten of Hancock County, Ga., in The American Institute of the City of New York, Annual Report, 1847.

[2]Data for the amount of corn produced per acre was found in Schedule IV ("Social Statistics" of the manuscript census returns. Why these data were not included in the agricultural schedules is not clear, and they seem to have been overlooked by historians. According to Gray (History of Agriculture, I (531-35) the following counties were typical upland cotton areas: Coweta, Hancock, Newton, Thomas, Dougherty, Houston, Monroe, and Sumter; the following were typical diversified farming counties: Chatooga, Gordon, Floyd.

[3]See note 2 above. The cotton counties were Troup, Monroe, Hancock, Newton, Stewart; the farming counties were Gordon, Walker, Floyd, Chatooga, Cobb, and Hall.

[4]U. S. Commissioner of Patents, Report on Agriculture, 1852, p. 73. Emerson David Fite estimates that the slave states imported ten million bushels annually from the North. I could not verify this figure, but if accurate, the South spent more than eleven million dollars annually for wheat. See Fite's Social and Industrial Conditions in the North During the Civil War (New York: The Macmillan Co., 1910), p. 18, n. 1.

As with other crops, Southerners had to depend upon imports.[1]

Prince Carl of Solms-Braunfels libeled Texans when he asserted that, in contrast to the German settlers, they were too lazy to grow some vegetables and a few other crops.[2] Viktor Bracht was more acute during his travels and noted that slavery in Texas produced profits because of the use of gang labor methods.[3] The failure of diversification in plantation economies has been general. The one major exception that comes to mind is the Jesuit colony in Paraguay, which was self sufficient. However, a close look at its economic structure reveals that it was more feudal than slave.[4]

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[1]Olmsted, Seaboard, pp. 44, 166; Ashmore Plantation Journal, Apr. 27, 1857; William Massie Papers, June 27, 1841, at Duke University; The Farmer and Planter, II (Feb., 1841), 4.

[2]Texas, 1844-1845 (Houston: Anson Jones Press, 1936), pp. 25, 39.

[3]Texas in 1848 (San Antonio: Naylor Printing Co., 1931), pp. 122f. Cf., Abigail Curlee, "The History of a Texas Slave Plantation, 1831-63," The Southwestern Historical Quarterly, XXVI (Oct., 1922), 88, 91. The Germans of Orange and Davidson Counties, N.C., also maintained fairly diversified agriculture. They were generally small slaveholders or nonslaveholders. See William Herman Gehrke, "The Ante-Bellum Agriculture of the Germans in North Carolina," Agricultural History, IX (July, 1935), 144-47; and "Negro Slavery Among the Germans in North Carolina," North Carolina Historical Review, XIV (Oct., 1937), 307-24.

[4]On Rome see Tenney Frank (ed.) An Economic Survey of Ancient Rome (5 Vols.; Baltimore: The Johns Hopkins Press, 1933-40), I, 68f, 162f; on the British West Indies see Pitman, p. 585. Basil Rauch recounts how Southerners tried to win Northern support for the annexation of Cuba by pointing to the market for foodstuffs on the slave plantations there. American Interest in Cuba: 1848-1855 (New York: Columbia University Press, 1948), pp. 182ff.

Some private property was permitted the laborers on the Jesuit plantations in Paraguay, although the profit motive was systematically discouraged. The Indians had considerable incentives, for they were treated far better than those on the secular estates. With the support of an international organization, the

In spite of all the problems arising from the inefficiency of the labor force and from the credit system one must admit the theoretical possibility that the plantations could have achieved self-sufficiency in food production. That they failed to do so indicates the strength of the one-crop tendencies of the economy. The agricultural reformers complained in exasperated tones that the planters did not raise enough food for their own use. The more alert of them, however, also warned against raising too much corn. M. W. Philips, thinking no doubt of the yeomen who raised corn for sale to the plantations, insisted that a one-crop system of corn production was no better than one of cotton.[1] Oscar M. Lieber, the state geologist of South Carolina, drew attention to a graver problem: planters had to be careful not to raise a surplus of corn, for there was no market for it. Similarly, Charles Yancey of Buckingham County, Virginia, wrote that planters and farmers would not grow oats because the only possibility of disposing of them lay in person-to-person barter.[2] On the one hand, planters needed to raise enough grain to feed the people on their plantations. On the other hand, they had to be careful not to raise a surplus, for it would go to waste and render the whole operation too costly.

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leaders did not have to worry much about international competition. See Oreste Popescu, El Sistema Económico en las Misiones Jesuíticas (Bahia Blanca: Editorial "Pampa Mar", 1952), pp. 11f, 41,57,114; Dornas Filho, pp. 28f.

[1] The Farmer and Planter, II (March, 1851), 18.

[2] For Lieber's comments see the South Carolina Mineralogical and Geological Survey, Report, 1857, p. 106; and for Yancey's see U. S. Commissioner of Patents, Report on Agriculture, 1849, p. 137. Cf., Robert Barclay Allardice, Agricultural Tour in the United States and Upper Canada (Edinburgh: William Blackwood & Sons, 1842), p. 96.

For most it seemed best to forget the whole thing and concentrate on cotton.

To some extent the border states took advantage of the Northern market, and Tennessee, Maryland, and Virginia produced wheat in large quantities. But so long as the slave system dominated the South, the regional market was retarded, and there was insufficient capital for a system of transportation to bind the slave states to the free cities of the Northeast. Certain parts of the Upper South did raise corn and pork for the Cotton Belt, which had, however, little to send in exchange. Increasingly, the border areas looked to the widening market of the free states.

Thus, the pleas of the reformers for diversification were little more than exhortations for a step backward toward natural economy. While the regional market was undeveloped--while, that is, slavery existed--progress in the production of foodstuffs had to be limited. With greater effort and support the reformers might have made the South self-sufficient in food, but the one-crop system, with its destructive effects upon the soil and the economy would have been modified only slightly. The program of the reformers could not have narrowed the growing gap between the economic strength of the free states and the slave nor resolved the dilemma of how to retain slavery and yet guarantee the preservation of Southern productive and political power. True diversification depended upon new markets, and new

markets depended upon urbanization. Ironically, the reformers urged an increase in food production in order to strengthen the slave system by cutting capital exports; yet, if deprived of their plantation market, the border states would have had to adjust their economy more thoroughly to that of the free states and, possibly, to finance the adjustment by selling their slaves south. In short, the program to save slavery would have hastened its destruction in the Upper South and yet have provided only temporary relief to the slave-owners of the Lower South.

CHAPTER V

THE ATTEMPTED ADJUSTMENT OF SOUTHERN AGRICULTURE - II THE CONDITION OF LIVESTOCK

Livestock in General

In his account of Southern livestock Gray pays too much attention to the number of animals and far too little to their quality. The South had half the country's cattle, sixty per cent of the oxen, and ninety per cent of the mules; and the totals for the Lower South compared favorably with those of the border states.[1] Gray might add that the value of livestock in the Lower South exceeded that in the Upper South in both 1850 and 1860 and that it increased at a faster rate during that decade. Cathey, using a similar approach, concludes that North Carolina must have been self-sufficient in pork, for the state contained an adequate number of swine.[2]

Yet, The South was confronted by a paradox: an abundance of livestock and an inadequate supply of meat and work animals. John Taylor of Caroline pointed out the peculiar circumstance,

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[1] History of Agriculture, II, 831f, 1042.

[2] Agricultural Developments, p. 183. Curiously, Cathey notes that many cows in the state were of poor quality. It is not clear why he did not investigate more carefully the quality of the hogs. See pp. 175-78.

and Southern agricultural writers referred to it throughout the antebellum period.[1] The United States Agricultural Society reported in the 1850's that thousands of American milch cows were so poor that they could not pay their way and were instead a tax on their owners.[2] This statement, which could have been made for almost every class of animals, applied with particular force to the condition of Southern livestock.

Frank L. Owsley, summarizing his own researches and those of his students, describes that which he believes to have been a flourishing livestock industry in the South. Although the region easily had the animals to feed the plantations, he argues, livestock raisers preferred to send their meat products to New Orleans, Mobile, Savannah, and Charleston for export to the West Indies and the cities of the Northeast, for the warm, damp Southern winters caused meat to spoil easily.[3] Owsley's argument deserves careful attention but presents serious difficulties, for he does not explain why these animals were not sold on the hoof to nearby planters. Kentucky and Missouri sent great numbers of animals south throughout the antebellum period. The two

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[1]Taylor, Arator, p. 165; Southern Agriculturalist (Charleston), VIII (March, 1835), 244; The Farmer and Planter, IX (Jan., 1858), 5; American Cotton Planter, II (June, 1854), 181; U. S. Commissioner of Patents, Report on Agriculture, 1851, p. 315. The same situation still persists in a large part of the South: see Hoover and Ratchford, p. 102.

[2]Journal of the United States Agricultural Society, I, nos. 3-4 (1853), 133.

[3]Plain Folk, pp. 34-50, 135f.

states sold almost $1,700,000 worth of animals to South Carolina alone in 1835, and work animals, hogs, cattle, and sheep worth more than that passed by Cumberland Ford in 1838.[1] In 1836 drovers of horses and hogs from Kentucky, Missouri, and neighboring states sold two million dollars worth of animals to South Carolina, and by 1839 Kentucky alone earned as much from its Southern trade.[2] This overland trade eventually gave way to railroad shipments, especially of bulk pork, but during 1849-1850 a total of 185,000 hogs were sent south from Kentucky and Tennessee; tobacco and cotton planters and farmers in North Carolina and elsewhere continued to buy large numbers of animals on the hoof.[3]

Owsley apparently has been unduly impressed by planters' complaints about weather conditions. There is reason to believe, however, that these complaints were largely excuses. Under the pressure of economic necessity during 1837-1849 Mississippians salted a considerable portion of their own meat, and during the Civil War the farmers of

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[1]John Ashton, A History of Hogs and Pork Production in Missouri ("The Missouri State Board of Agriculture Monthly Bulletin," XXI, no. 1; Jefferson City, Jan., 1923), p. 53; Mary Verhoeff, The Kentucky Mountains ("Filson Club Publications," no. 25; Louisville, Ky., 1911), p. 123.

[2]Verhoeff, p. 99, n. a; T. D. Clark, "Livestock Trade Between Kentucky and the South, 1840-1860," Kentucky State Historical Society Register, XXVII (May, 1929), 570. J. S. Buckingham, The Slave States of America (2 Vols.; London: Fisher, Son, & Co., 1842), II, 203f; and Parr, passim.

[3]U. S. Commissioner of Patents, Report on Agriculture 1850, p. 563; Report, 1853, pp. 56ff; Rosser H. Taylor, Slaveholding in North Carolina: An Economic View (Chapel Hill: University of North Carolina Press, 1926), pp. 36f.

North Carolina salted their meat for home consumption rather than contribute it to the Confederate war effort.[1]

Owsley produces no figures to justify his assumption of exports to the Northeast and the West Indies. Statistics on the trade with New York and other coastal ports are not available, but to my knowledge none of the studies of the Northeastern ports and Northeastern economic development in general mentions a significant trade in meat or meat products with the South. Neither Percy Wells Bidwell's Rural Economy in New England at the Beginning of the Nineteenth Century,[2] which deals with the early period, nor Louis Bernard Schmidt's article on "Internal Commerce and the Development of National Economy before 1860,"[3] which deals with the antebellum period itself--to mention only two of the outstanding works--even hint at such a trade. Owsley's contention appears all the more dubious in the light of our knowledge of the position of livestock farmers in New England. Refrigerated cars were introduced in 1851, and Western butter and meat quickly dominated the Eastern urban markets. Even the thrifty farmers of Vermont, known for the

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[1]Moore, p. 64; Cornelius O. Cathey, "The Impact of the Civil War on Agriculture in North Carolina," in Studies in Southern History, ed. J. Carlyle Sitterson ("The James Sprunt Studies in History and Political Science;" Chapel Hill: University of North Carolina Press, 1957), pp. 102f.

[2]("Transactions of the Connecticut Academy of Arts and Sciences," April, 1916), pp. 352f.

[3]Journal of Political Economy, XLVII (Dec., 1939) 80ff.

good quality of their stock, were forced to shift to other types of production.[1] It is difficult to imagine that Southern butter and meat helped push out New England products, or that they rivaled Western products in the cities of the Northeast.

Figures available for the foreign trade fail to substantiate Owsley's hypothesis. If we exclude New Orleans, which handled the exports of the whole Mississippi Valley, the value of the combined exports of meat and animal products from Savannah, Mobile, and Charleston was an insignificant twenty-five thousand dollars for the year ending June 30, 1856--the first year for which we have reliable figures.[2]

If Owsley's contention were correct surely the South would have had a modest meat-packing industry. The plantation market, though limited, was of adequate proportions to sustain a pork industry, and if the supply of good meat had been forthcoming, livestock need not have been exported at all. During the war the eastern part of the Confederacy was gripped by a persistent meat shortage and tried to increase the number of good animals. Lack of time, shortages of

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[1]T. D. Seymour Bassett, "A Case Study of Urban Impact on Rural Society; Vermont, 1840-1880," Agricultural History, XXX (Jan., 1956), 30.

[2]U. S. Treasury Department, Report of the Secretary of the Treasury Transmitting a Report from the Register of the Treasury of the Commerce and Navigation of the United States for the year Ending June 30, 1856, pp. 304-11.

feed, and lack of experience, combined with the traditional difficulties, prevented significant progress.[1]

Those who would follow Gray and Owsley in attributing much significance to the figures for the number of animals (or for the value of livestock) should consider the situation in Georgia and Texas, which were the leading livestock raising states of the Lower South. Owsley attaches great significance to the large numbers of animals reported to have been in the pine barrens of Georgia, but according to De Bow's Industrial Resources, there was no beef raising industry in that or any other part of the state.[2] Reports from Georgia during the 1840's and 1850's stressed that thousands of animals had to shift for themselves during the winter and that their condition was miserable. First-class hogs for the planters' tables had to be imported from the free states, as did much of the mess pork for the slaves. The milch cows and beef cattle were of deplorable quality, and despite increasing attention at least half the work animals had to be imported.[3] The state's gold mine workers had to be fed from purchases from hog drovers from Tennessee.[4]

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[1]Massie, p. 61.

[2]Owsley, Plain Folk, pp. 44f; De Bow, I, 539.

[3]American Agriculturalist, III (April, 1844), 117; VI (June, 1845), 176; U. S. Commissioner of Patents, Report on Agriculture, 1849), pp. 145f; 1851, p. 325; The Arator, II (Oct., 1856), 577ff.

[4]Fletcher M. Green, "Georgia's Forgotten Industry: Gold Mining," Georgia Historical Quarterly, XIX (Sept., 1935), 211f.

When the Southern Central Agricultural Society (of Georgia) issued awards to stock raisers in 1851 few Georgians were among the winners, and in some categories none could be found to enter the contests.[1]

The animals in Texas, which made a great contribution to the South's livestock figures, were poor even by Southern standards. In 1860 Texas cattle were largely semi-wild and probably were worth only one-half as much as the animals in other Southern states. When large numbers of cattle were driven north after the Civil War the little merchantable beef that they yielded was of inferior quality. Until 1860 transportation difficulties were so great that only a small portion of the saleable cattle were actually sent to market, and attempts to produce meat biscuits for sale in the West proved futile.[2]

One of the reasons most frequently given for the poor condition of Southern livestock was the effect of the climate, which is supposedly inappropriate for grasses and for

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[1] Transactions, 1851, passim.

[2] Lewis F. Allen, American Cattle: Their History, Breeding and Management (New York: Orange Judd & Co., 1868), p. 12; Edward Everett Dale, Cow Country (Norman: University of Oklahoma Press, 1942), pp. 80f, and The Range Cattle Industry (Norman: University of Oklahoma Press, 1930), p. 24; J. Frank Dobie, "The First Cattle in Texas and the Southwest Progenitors of the Longhorns," The Southwestern Historical Quarterly, XLII (Jan., 1939), 184, 189; T. J. Cauley, "Early Meat Packing Plants in Texas," The Southwestern Political and Social Science Quarterly, IX (March, 1929), 466f.

the animals themselves. Even Edmund Ruffin used this argument and urged Southerners to concentrate on reforms other than improvement of livestock. Yet, after initial difficulties Ruffin managed to improve his own breeds sufficiently to supply the needs of his plantation.[1] Although some, like Rupert Vance, have continued to suggest that Southern grasses are too poor to sustain good livestock, others have challenged this contention and shown that bermuda grass, alfalfa, cowpeas, and other crops good for animal food succeed well in the South.[2] During the twentieth century Southerners have found that without the benefit of technological changes they have been able to grow crops to feed animals and to increase greatly the quality and quantity of their livestock. Alabama had an alfalfa and livestock boom after World War I; South Carolina tripled its hay production in the 1930's, and every Southern state improved its stock significantly.[3]

During the antebellum period some Southerners knew well enough that the customary explanations for poor stock were groundless, but their protests went unheeded. In 1868

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[1]Unpublished Autobiography, "Incidents of My Life," II, 15f, III, 226f; papers in the University of North Carolina.

[2]Vance, pp. 154-59; Street, p. 73; Hugh Hammond Bennett, pp. 20f.

[3]Glenn N. Sisk, "Agricultural Diversification in the Alabama Black Belt," Agricultural History, XXVI (April, 1952), 43; Odum, p. 597.

Lewis F. Allen, in his study of American cattle, said bluntly that the soil and climate of the South were fine for animals and that expressions to the contrary were little more than excuses by planters who preferred to raise cotton.[1] Allen was certainly correct, for raising cattle for beef became big business in Alabama in the early twentieth century, and milk production there increased significantly.[2] Southerners could not complain about the climatic effects on hogs, for weather conditions are a minor factor in hog raising. Unusually low temperatures in early spring may cause a loss of pigs at farrowing time, but the South does not suffer so much from cold springs as the rest of the country. Losses are always heaviest, however, on farms that are poorly equipped for caring for young pigs, and the slave plantations were especially weak in this respect.[3] The major difficulty was neither soil nor climate; it was the combination of careless treatment and the lack of accessible, geographically concentrated markets that might have encouraged animal husbandry on a large scale.

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[1]Allen, p. 23. Cf., American Farmer, XI (May, 1830), 299; and the comments of De Bow in U. S. Commissioner of Patents, Report on Agriculture, 1848, p. 516.

[2]Sisk, p. 44; Hugh Hammond Bennett, p. 32; Odum, p. 394.

[3]On weather conditions and hog raising see G. C. Haas and Mordecai Ezekiel, Factors Affecting the Price of Hogs ("U. S. Department of Agriculture, Department Bulletin," no. 1440; Nov., 1926), p. 25.

Virtually every competent traveler to the Old South expressed astonishment at the brutal, careless treatment that slaves accorded to livestock. James Redpath, for example, after describing how a slave tried to get a horse to move on difficult terrain by throwing rocks at his legs, suggested that "this is a fair specimen of the style in which slaves treat stock."[1] In many areas slaves who were too old or infirm to work in the fields cared for the animals, and wherever livestock raising was taken seriously slaves were considered next to useless.[2] In addition to carelessness and negligence slaves were accused of deliberately sabotaging plantation meat supplies by stealing hogs, plundering smoke houses, and the like. Perhaps these thefts were motivated by hunger or perhaps by rebelliousness; whatever the reason, they were apparently common.[3]

Confronted by these difficulties reformers returned to a single theme: the need for careful management and proper treatment. Food for stock was repeatedly wasted because even the most trusted slaves would pay no attention to the management of rations.[4] Planters were criticized for letting

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[1]The Roving Editor: Or Talks with Slaves in the Southern States (New York: A. B. Burdick, 1859), p. 241; Harriet Martineau, Society in America (2 Vols.; 4th ed.; New York: Saunders and Otley, 1837), I, 306.

[2]Southern Agriculturalist, VIII (Jan., 1835), 18; Charles William Ramsdell, "The Frontier and Secession," in Studies in Southern History and Politics Inscribed to William A. Dunning (New York: Columbia University Press, 1915), p. 65.

[3]Bills Diary, May 31, 1853; and Affleck's remarks in U. S. Commissioner of Patents, Report on Agriculture, 1849, p. 162.

[4]The Farmer and Planter, VI (Jan., 1855), 3.

their animals run wild or entrusting them to incompetent slaves.[1] But what else could they have done? One writer, at least, had an answer: "such attention as can only be given by those who are farmers and not planters."[2]

In addition to the direct damage done to stock by careless handling and by allowing the animals to run wild during much of the year, a good deal of harm was done indirectly. Even those animals that survived were so badly weakened that they were particularly susceptible to disease. Animal diseases were common throughout the country, but the number of complaints of wholesale deaths in the South suggests special problems, especially since so many of the complaints came from areas where livestock was known to be particularly ill-treated and underfed.[3] Dependence upon imported animals presented additional difficulties. Horses and mules suffered from the long journey from Kentucky and Missouri to the plantation areas, and animals that were in

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[1]Cf., The Arator, I (July, 1855), 115; II (Dec., 1855), 267f; The Farmer's Journal, II (June, 1853), 83; American Cotton Planter, II (June, 1854), 181; Dr. Walter Wade's Plantation Diary, Feb. 4, 1850 in the Mississippi State Department of History and Archives, Jackson, Mississippi.

[2]American Agriculturalist, VI (June, 1845), 253.

[3]Cf., The American Cotton Planter, XIII (Sept., 1859), 272; The Farmer and Planter, IX (Aug., 1858), passim; Jewel Lynn De Grummond, "A Social History of St. Mary's Parish, 1845-60," Louisiana Historical Quarterly, XXXII (Jan., 1949), p. 49; Everard Green Baker MS, II, 29, 39; Francis Terry Leak, Diary, 1839-1864, II, 109,111, 274; Louis M. De Saussure Plantation Book, pp. 8, 21, 35. The Leak and De Saussure papers are in the University of North Carolina.

good condition when they started were less healthy when they arrived at their destination.[1] The animals sent to the Lower South had to be accliminated; many failed to take the change well, and others not at all.[2]

But the effects of ill treatment were only part of slavery's contribution to the weakening of Southern livestock. The improvement of cattle breeds in the North was made possible by heavy investment of capital in improved breeds and in the development of transportation facilities. Similarly, the pork packing industry of the Middle West got started after 1818 when Eastern capital appeared in large quantities to take advantage of a growing market. Ironically, the early market was primarily that of the Southern plantations, although during the later period the urban centers of the North far outdistanced the South as a market for meat and animal products.[3]

In the South capital was lacking, transportation facilities were designed chiefly to carry cotton to the coast, and the market was of limited proportions.[4] As

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[1]Edmund F. Noel in U. S. Commissioner of Patents, Report on Agriculture, 1851, p. 278.

[2]The Farmer and Planter, VI (Jan., 1855), 1; Fenner, Southern Medical Reports, I, 32f.

[3]Charles T. Leavitt, "Attempts to Improve Cattle Breeds in the United States, 1790-1860," Agricultural History, VII (April, 1933), 51ff; "Transportation and the Livestock Industry in the Middle West to 1860," loc.cit., VIII (Jan., 1934), 22.

[4]Cf., U. B. Phillips, A History of Transportation in the Eastern Cotton Belt to 1860 (New York: Columbia University Press, 1908); U. S. Commissioner of Patents, Report of Agriculture, 1852, p. 73; Affleck's Rural Almanack, 1852, p. 61.

antislavery leader Cassius M. Clay observed:

> All our towns dwindle, and our farmers lose, in consequence, all home markets. Every farmer bought by the slave system sends off one of the consumers of the manufactures of the town: when the consumers are gone, the mechanic must go also...Beef from Fayette sold this spring in the city of New York for six dollars per hundred; but the expense of carriage was three dollars per hundred; thus for the want of a home market, which cannot exist in a slave state, the beef raiser loses one half of the yearly proceeds of his farm.[1]

For each important class of animals the result was the same wherever the large plantations dominated the economy: the animals on the large estates were abused by the slaves and were generally neglected, and the animals of both planters and farmers received inadequate attention because of the lack of capital, poor transportation, and the absence of an urban market.

Work Animals

The animals that slaves seem to have taken the greatest delight in abusing were the horses, oxen, and mules that were so essential to the day-to-day work of the plantations. If the hogs were not attended to, pork could be purchased; but there was no substitute for work animals.

Before 1830 Americans used oxen in great numbers, but afterwards they shifted to more efficient animals. Oxen, which might have worked profitably if handled with care, required more attention than even Northern farmers could give.[2]

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[1] Writings, p. 179.

[2] L. F. Allen, pp. 293f; Ruffin Autobiography, MS, II, 16. Horses replaced oxen in Europe during the sixteenth century

Although the number of oxen in the country increased by only thirty-two per cent during the Fifties, compared with a one hundred per cent increase in the number of horses and mules, this shift was not the same in the free states as in the slave. Southerners generally began to use mules; Northerners, horses. During the Fifties the ratio of horses to the total number of work animals rose from 73.3 to 75.5 per cent in the free states, but declined from 58.0 to 54.0 per cent in the slave; more significantly, in the principal plantation states of Alabama, Mississippi, and Louisiana the percentage fell from 48.0 to 36.0, whereas the ratio of mules to total work animals rose from twenty-three per hundred to thirty-five.[1]

Some historians have suggested that the Southern preference for mules rather than horses indicated agricultural progress.[2] The reason for using mules, however, as most contemporaries admitted, was not that they worked better than horses, but that they withstood more readily the punishment inflicted by the slaves.[3] As the plantation

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century, when the emphasis shifted from one of cheap maintenance to one of greater productivity. See E. M. Jope, "Agricultural Implements," in A History of Technology, ed. Charles Singer and others (London: Oxford University Press, 1956), II, 91f.

[1]Computed from the census reports for 1850 and 1860; cf., The Eighth Census of the U.S., 1860, Agriculture, p. cs.

[2]Phillips, American Negro Slavery, p. 219; Francis Butler Simkins, A History of the South (New York: Alfred A. Knopf, 1953), p. 121.

[3]Cf., e.g., The American Cotton Planter, XII (Aug., 1858), 238; The Farmer and Planter, II (Nov., 1851), 151; (Dec., 1851), 164.

system grew, the proportion of mules to horses grew with it, and wherever slaves worked, mules came into increasingly greater use.[1] In the sample counties studied[2] the same tendency appeared: the larger the slave force the greater the dependence upon mules and oxen relative to the faster, more efficient horses. (See Graph 2). Horses, which could not take so much abuse as mules and oxen, needed care and required skill in driving; slaves generally provided neither.

Hogs

The figures for the number of animals have nowhere been more misleading than in the case of hogs, which provided the main source of meat in the South. It is especially unrewarding to attach much significance to the number of hogs in an area or state; an undetermined number of animals was purchased from Kentucky, Tennessee, and the Northwest, and an increase in stock did not necessarily mean an increase in the number of animals raised at home. More important, the quality of Southern hogs was almost unbelievably bad. More often than not, hogs were allowed to run wild in the woods and to feed themselves throughout

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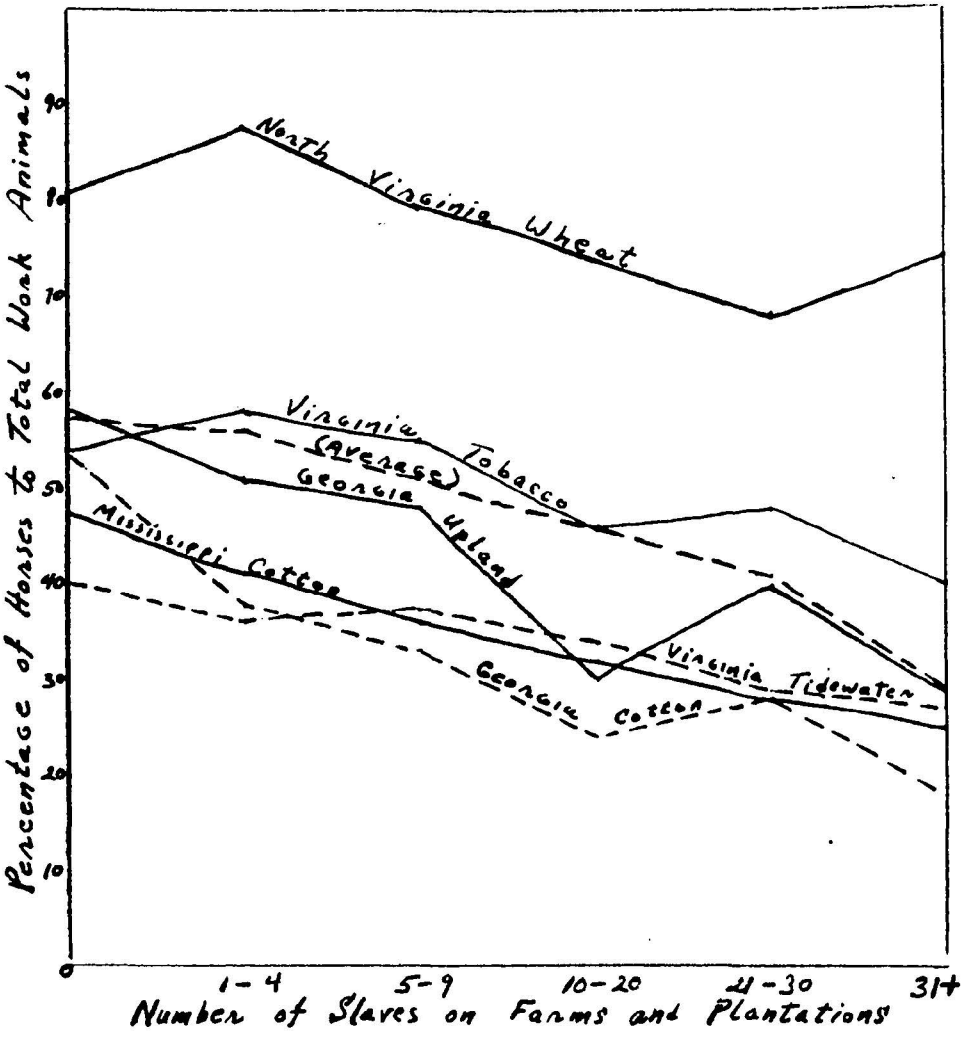
[1]During the twentieth century mules have again come into greater use relative to horses in the South. But tractors have replaced both to a large extent, and work animals continue to be used primarily on units operated by share-croppers. Cf., Street, pp. 220f.

[2]Cf., Appendices II and IV.



GRAPH 2

PERCENTAGE OF HORSES TO TOTAL WORK ANIMALS
IN SELECTED COUNTIES, 1860

Source: Computed from the manuscript census returns.
See General Appendices II and IV.

the winter as best they could; often hogs received no grain at all during the year.[1] Mast-fed hogs sometimes got fat, but the meat was barely fit for the slaves; usually, these animals weighed much less than hogs that received at least a little corn.[2] So poor was the treatment of stock that when, on occasion, superior animals were imported into the Lower South, their quality declined instead of their effecting a general improvement in the herds.[3]

During the colonial period the hogs of New England and the Middle Colonies weighed about 200 pounds. By 1860 the hogs in the Chicago market averaged 228, and those brought to Cincinnati about 200 or more.[4] And what of the South? I have found twenty-four sets of plantation records that yield information on the weight of hogs

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[1]Contemporary sources are full of reports of these practices. In one instance the hogs became so wild that they had to be shot, and there was said to be no chance of fattening them even if caught alive. See Theodora Britton Marshall and Gladys Crail Evans (eds.) "Plantation Report from the Papers of Levin R. Marshall, of 'Richmond,' Natchez, Mississippi," Journal of Mississippi History, III (Jan., 1941), 51.

[2]Cf., U. S. Commissioner of Patents, Report on Agriculture, 1853, p. 53; Wade Diary, I, 162.

[3]U. S. Commissioner of Patents, Report of Agriculture, 1852, pp. 74, 82.

[4]Bidwell and Falconer, p. 44.; Thomas Senior Berry, Western Prices before 1861: A Study of the Cincinnati Market ("Harvard Economic Studies," LXXIV; Cambridge, 1943), pp. 231ff; De Bow, Industrial Resources, I, 378. St. Louis hogs averaged just under 200 pounds: see Ashton, p. 56.

slaughtered. These data, drawn from eight states, accounted for almost 4,000 hogs, the median weight of which was 140 pounds. These records were from the best plantations, and some of them came from the Upper South, where the reform movement had made progress. Furthermore, the average weights were inflated by the inclusion of the heavier hogs bought from drovers to be slaughtered on the plantations. Thus, the average weight was assuredly not more than 125 pounds, and any error is probably on the side of generosity. Below I shall consider the significance of this figure in terms of plantation expenditures, receipts, and the problem of self-sufficiency in foodstuffs.[1] Most of the slave states imported pork despite large numbers of hogs reported in the census returns, for local animals were of poor quality and furnished little meat.

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[1]See special appendix at the end of this chapter. The records are from Virginia, Tennessee, the Carolinas, Georgia, Louisiana, Mississippi, and Alabama. The Sources: Archibald Hunter Arrington Papers, X (1858); John Fletcher Comer Farm Journal, I; Rufus Reid Papers, I, 94, 110; Huguenin-Johnston Papers: Huguenin Plantation Book, 1857-60; Mackay-McNeely Papers, V, VII; Withers Books, I, 11ff, 28ff--all in the University of North Carolina. Also, Edward Dromgoole Plantation Books, 1854-60; Samuel Simpson Biddle Papers, Dec., 1857, Dec. 22, 1858; William Massie Crop Book, p. 129--all in Duke University Library. Also, S. J. Baker Account Book, 1849; Leak Papers, 1850-52; Spyker Diary, Dec. 2, 1856; Kollock Papers, 1846; Capell Plantation Record Book, 1853; Capell Diary, 1855; McKinley Book, p. 72; Jaynes Papers, 1857; Bills Papers, I, 1845-56; Morrison Papers, Dec. 11, 1845; Cameron Papers, CXIII; E. G. Baker, I, 110; Ashmore Papers, 1853-56; The Southern Planter (Richmond), XVIII (July, 1858), 433; Katherine M. Jones (ed.) The Plantation South (Indianapolis, Ind.: The Bobbs-Merrill Co., 1957), pp.282f.

Cattle

As with hogs, the importation of fine breeds of cattle resulted in a general improvement of stock in the North but in a deterioration in the fine breeds brought into the South.[1] Beef cattle, kept for the planter's table, were not good enough to offer much meat, and purchases of Western beef were frequent. There is much more specific information for milch cows. Of the states of the Lower South only Louisiana produced more than twenty pounds of butter per cow, and South Carolina, Georgia, Texas, and Florida produced fifteen pounds or less. In the Upper South production ranged from thirty-three pounds in Tennessee to forty-three pounds in Maryland, although Delaware--if we may consider it a slave state at all--produced fifty pounds. Of the free states only four produced less than fifty pounds per cow, and Rhode Island, the poorest, produced thirty-four pounds; New York led all with eighty-five pounds.[1]

Nor was the poor record of the slave states due to a greater preference for milk than butter. Although exact data are not available, Delaware, Maryland, and Virginia--easily the best producers among the slave states--are known to have consumed twenty-five per cent less milk (fluid and

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[1] Journal of the United States Agricultural Society, I (1853), 140f. In general that which was true for butter production was also true for wool production: see De Bow, Industrial Resources, I, 359; Katharine M. Jones (ed.), p. 190; Clingman, Selections, pp.114f.

processed) per capita than the free states.[1] The states producing the largest amounts of butter apparently used the greatest quantities of fluid milk.[2] There is ample evidence that planters wanted more butter and often imported it.[3]

Not all types of milch cows could have done well in the Southern climate and on Southern soil, but Herefords and other adequate milkers could have. Mississippi raised its butter sales from virtually zero at the beginning of the twentieth century to more than eight million pounds in 1927. The growth of a modest effective demand in the towns and cities largely accounted for the progress.[4]

Agricultural Adjustment: A First View

The South was caught in a series of hopeless contradictions in its attempts to increase nonstaple production and to improve its livestock. An inefficient labor force and backward business practices prevented planters from accomplishing much, and when they did succeed in raising their own food, they also succeeded in depriving local livestock

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[1] Hunt's Merchants' Magazine, XLVII (Nov., 1862), 444.

[2] The Farmer's Journal, III (April, 1854), 26f.

[3] New Orleans Price-Current, Oct. 17, 1849; Feb. 2, 1850; The Farmer and Planter, VIII (Feb., 1857), 36; The Southern Planter (Richmond), III (Aug., 1843), 177f; Mrs. Hilliard's Diary, Jan. 19, 1850, in Tulane University; McCall Papers, I accounts for Oct.-Dec., 1851. I found only one instance of a planter who sold butter: see E. W. Wilkins Plantation Account Book, 1852-64, passim, in the North Carolina State Department of History and Archives, Raleigh.

[4] Vance, pp. 168f.

raisers and grain growers of any market they may have had. The stock raisers of the back country could not sell their produce in the North because of prohibitive costs of transportation, and the planters saw no reason to vote for taxes to improve contacts with the back country, for they could purchase supplies from Western drovers or through agents.

The planters had little surplus capital with which to buy improved breeds and could not guarantee the care necessary to make the investments worthwhile. Stock raisers did not have the capital either, and if they could get it, the investments would have been foolhardy without adequate markets.

There was some room for improvement, and the work of the reformers was not wholly in vain. Some planters were encouraged to supervise operations more carefully and to provide incentives to the slaves caring for livestock or assigned to nonstaple crops. But, as has been observed, these improvements led to a worse situation for the local nonstaple producers. More general reforms occurred in certain states and counties of the older South, but these contained even more serious contradictions for the economy as a whole--as I shall try to demonstrate directly.

SPECIAL APPENDIX TO CHAPTERS IV AND V

THE COST OF FOOD PURCHASED ON FARMS AND PLANTATIONS IN SAMPLE COUNTIES IN THE COTTON BELT[1]

Minor Food Costs

Few plantations in the Mississippi or Georgia Cotton Belt raised enough corn or pork for their own use, and in addition, small expenditures had to be made for such extra foods as molasses, sugar, coffee, flour, and whiskey. In this appendix I should like to justify the generalizations made in the two preceding chapters concerning the dependence of Cotton Belt farms and plantations upon food purchases as late as 1860. Specifically, I intend to support the estimates presented in Chapter V. The following data are for the census year 1859 and indicate the continued reliance upon outside food supplies despite two decades of agitation for self-sufficiency.

"A Small Farmer" estimated that he spent ten dollars per slave for minor food items every year.[2] Governor Hammond gave his drivers an extra pint of molasses per week, and all his hands received a glass of whiskey before going into the fields at cotton-picking time; ditchers got extra meat and whiskey regularly.[3] On virtually every

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[1]For the determination of sample counties see Appendix II.

[2]De Bow, Industrial Resources, II, 337.

[3]See the notes in the "Plantation Manual" in the Hammond Papers, passim.

plantation some additional food was distributed regularly and on special occasions. During the Christmas holiday season slaves usually received extra corn and molasses, liquor, fresh meat, and other food.[1] To cover the cost of these extra foods I have assumed an expenditure of one dollar per slave per year, to be added to the food bill.

The major problem is the assessment of the large expenditures for corn and pork. Although the manuscript census returns are a good source of data for the amount of corn produced, information on plantation requirements is scarce. To compensate for the paucity of data crude methods must be employed, and therefore the estimates for corn requirements are rough.

Corn Required and Produced

Since conditions in Georgia and Mississippi were quite different, let us first concern ourselves with the latter. After determining the total food costs for Mississippi it will be simple enough to make the necessary adjustments to produce estimates for Georgia. The first task, then, is to find out how much corn the farms and

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[1]To cite one typical entry in a plantation diary: the Newstead Plantation diary (Dec. 25, 1858) reports that a hog and a cow were killed for the slaves. The planter added that he "spent the day waiting on the Negroes and making them comfortable." For a general discussion of Christmas season practices see Rosser H. Taylor, Ante-Bellum South Carolina: A Social and Cultural History ("James Sprunt Studies in History and Political Science," XXV, no. 2; Chapel Hill: University of North Carolina Press, 1942), p. 54.

plantations of Mississippi required in 1860.

Hogs

Gray notes that twenty-four bushels of corn per day were used to feed 1,000 hogs driven from the Upper South to the Southeast.[1] Two studies prepared by the Department of Agriculture show that during the twentieth century considerably higher amounts have been used to feed hogs. According to the study of R. D. Jennings, during 1900-1941 about 400 pounds (6.75 bushels) were needed to produce 125 pounds of hog.[2] The study by L. Jay Atkinson and John W. Klein indicates that in 1945, under the advanced conditions of production prevailing in the Corn Belt, 4.75 bushels were needed.[3]

Gray's figures present several difficulties. First, hogs on the plantations were probably fed according to different standards than those being sent south. Secondly, Gray gives a daily rate of feeding without indicating how many days a year hogs were fed corn. Plantation hogs were often turned out to run free in the fields and, as a result, ate far more grain than was necessary or desirable.

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[1] History of Agriculture, II, 841.

[2] Feed Consumption by Livestock (U. S. Department of Agriculture, Circular #670; Washington, D.C.: April, 1943). For the relevance of the standard weight of 125 pounds of hog see Supra, p.133.

[3] Feed Consumption and the Marketing Weight of Hogs (U.S. Department of Agriculture, Technical Bulletin #874; Washington, D.C.: July, 1848), see the table on p. 25.

After stinting their hogs with little or no corn during most of the year planters generally fed them grain for a few months in a thoroughly wasteful fashion.[1] During the corn-feeding period the animals probably ate more than the .039 bushels per day suggested by Gray.

The second problem is the more serious, for conditions varied greatly from plantation to plantation and from area to area. One planter in Virginia fed his hogs some corn throughout the year and then fed them solely on corn for four months. Another estimated that in the Carolinas hogs were fed for five months during the year. A Georgia planter said that he fed his hogs corn for two months and that most planters he knew did the same.[2] Many reports suggest that planters and farmers fed their hogs corn for somewhere between two and five months. No doubt some did not feed hogs any corn, but in those cases the quality and quantity of the meat must have resulted in higher expenditures for pork to compensate for the savings on corn. The wide range of testimony has led me to assume that hogs were fed corn for three months and given a little additional corn at other times; that is, I have calculated on the basis of 100 days of corn-feeding. Gray's figures give a yearly expenditure of 3.9 bushels of corn

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[1] The Farmer and Planter, VI (Jan., 1855), 3; Gray, History of Agriculture, II, 845.

[2] The Southern Planter (Richmond), XVIII (July, 1858), 433; Carolina Planter, I (Feb. 5, 1840), 26; The Arator, II (Oct., 1856), 577ff.

per hog. The indications of wasteful feeding methods and the implications of the two Department of Agriculture studies cited above suggest that the amount may be safely raised to 4.5 bushels. This figure corresponds roughly to that provided by Phillips from the Tait plantation records, which indicated four bushels.[1] Other contemporary sources suggested higher figures. For example, the Capell papers show that fifty-two hogs were each fed 8.6 bushels per year, largely during an eleven-week feeding period.[2] During the antebellum period, according to A. L. Kohlmeier, hogs in the Northwest were fed about fifteen bushels of corn per year.[3]

Work Animals

According to The Southern Planter, eighteen bushels of corn were needed to feed a mule for a year, whereas thirty were required for a horse.[4] The estimate for mules was probably too low, for the article favored the use of horses and was trying to concede every possible advantage to mules. We have no data for oxen, which had a reputation

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[1] Life and Labor, p. 279. The Tait plantation was in Alabama; the records are for 1832. Apparently, Phillips thought the records to be typical of plantations in the Lower South.

[2] Capell Diary, p. 128.

[3] The Old Northwest as the Keystone of the Arch of the American Federal Union. A Study in Commerce and Politics (Bloomington, Indiana: The Principia Press, 1938), pp. 32f and note 33.

[4] (Richmond), XIII (Jan., 1852), 13.

for eating less than other work animals, and fifteen bushels ought to have sufficed. The Tait plantation in Alabama fed its work animals between thirty and thirty-eight bushels of corn per head in 1832, and the data in the Capell papers show that work animals were fed much more.[1]

Jennings provides data indicating that about thirty bushels of corn were needed per work animal in 1910[2] (see Table 2 below); that is, his figures suggest that the calculations of The Southern Planter were too conservative. The following estimates are used in this study: horses, thirty-five bushels; mules, twenty-five; oxen, fifteen.

Other Animals

Jennings' data give us the raw material from which to construct a feed table for the period 1910-1941. The data include the number of animals and the amount of grain fed to each class of animals in the United States for the years 1910, 1925, and 1941 (see Table 2 below). With hogs serving as a base, the following formula is derived from the ratio for 1910 and 1925: 1:1.4=1; that is, the 1.4 ratio for hogs serves as a standard, and the ratios for the other animals are expressed in relation to hogs. The figures for milch cows are so close to those for hogs that

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[1] Phillips, Life and Labor, p. 279; Capell Diary, p. 128.

[2] Jennings, pp. 22ff.

they may be assumed to be equal; that is, the daily ration for cows is assumed to have been the same as that for hogs. Following this same procedure, other cattle would have eaten 0.425 times as much as hogs (on the basis of the 1941 compromise figure: 1.4 ÷ 0.6), and sheep, 0.285. But these animals, unlike hogs, were probably fed all year long. Thus milch cows: 4.5 bushels x 3.65 = 16.4 bushels. The same procedure yields: other cattle, 4.5 x 0.425 x 3.65 = 7.0; sheep, 0.285 x 4.5 x 3.65 = 4.7.[1]

TABLE 2

AMOUNT OF FEED PROVIDED FOR SEVERAL CLASSES OF ANIMALS IN THE UNITED STATES, 1910-1941[a]

Class of Animals	1910			1925			1941		
	Percentages[b]		Ratio[c]	Percentages[b]		Ratio[c]	Percentages[b]		Ratio[c]
	Anim.	Grain		Anim.	Grain		Anim.	Grain	
Horses & Mules	13	34	2.6	12	29	2.4	1	2	2.0
Hogs	27	37	1.4	29	42	1.4	28	48	1.7
Milch Cows	10	12	1.2	12	14	1.2	13	19	1.5
Other Cattle	21	17	0.8	27	14	0.5	28	17	0.6
Sheep	28	1	0.4	20	8	0.4	26	11	0.4

[a]Source: Jennings, Table 12, p. 18; Table 25, p. 32.

[b]E.g., for 1910 hogs constituted 27 per cent of the animals under consideration and were fed 37 per cent of the grain.

[c]Percentage of grain consumed divided by percentage of animals.

[1]Sheep of course are grazed, but some additional food is required. In the Old South, where good grazing land was scarce, the sheep may have needed more grain.

Plantations no doubt had several carriage and saddle horses, which were necessary for business as well as pleasure, plus some poultry, goats, and other animals, and of course some corn had to be allotted for seed. For convenience, I have assumed that the following quantities of corn were used for these and other miscellaneous needs: 150 bushels on plantations of twenty or more slaves; seventy-five bushels on large farms; and fifteen bushels on small farms.

Personnel

Governor Hammond estimated that thirteen bushels of corn would suffice for a grown slave's yearly rations.[1] In a slave force of fifty, ten were probably young enough to be on half rations, and I have consequently calculated on the basis of 11.5 bushels per slave in order to account for those receiving less than a full allotment of corn.

Although white families had at their disposal small amounts of rye and wheat, the popularity of corn and the greater quantities of food consumed probably resulted in corn rations per white person that were at least as large as those for each slave. Corn allowance must be made for the planter's family and for the overseer's, for it was considered part of the latter's wages and may be regarded

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[1] De Bow, Industrial Resources, III, 31; cf., the unidentified planter in Ibid., II, 333; also, U.S. Commissioner of Patents, Report on Agriculture, 1849, p. 17.

as part of the owner's managerial slary. If we assume the presence of both a planter and an overseer, 120 bushels is probably a safe estimate; on smaller holdings, from sixty to eighty bushels should have sufficed.

Table 3 shows the amounts of corn needed on farms and plantations of various sizes and the amounts actually produced, together with the resulting differentials in volume and value.

Pork Produced and Required

Determination of the amount of pork purchased by farmers and planters depends upon several set of data: the number of swine on units of different sizes; the approximate weight of hogs; and the price of pork. Pork allowances for the slaves varied, but 3.5 pounds per week seems a fair working figure, although many estimates suggest four or more pounds. The lower figure should compensate for those not on full rations. The sheep and cattle provided meat for the planter's table, but in view of the popularity of pork the whites probably ate as much as the Negroes; on the plantations an overseer's provision must also be calculated.

The number of swine has been obtained from the manuscript census returns for De Soto and Marshall counties, Mississippi in 1860. The median size of the herds was: for plantations of eighty slaves, 175; forty-five slaves, 90; twenty-five slaves, 60; fifteen slaves, 41; seven slaves,

TABLE 3

CORN REQUIRED AND PRODUCED IN THE MISSISSIPPI COTTON BELT, 1860[a]
(in bushels)

Class[b]	Number of Slaves on Farms and Plantations[c]													
	80		45		25		15		7		2		0	
	No.	Corn Req.	No.	Corn Req.	No.	Corn Req.	No.	Corn Req.	No.	Corn Req.	No.	Corn Req.	No.	Corn Req.
Slaves	80	920	45	518	25	288	15	173	7	81	2	23	0	00
Whites		120		120		80		80		60		60		60
Hogs	175	788	90	405	60	270	41	184	25	113	20	90	14	63
Horses	9	315	6	210	4	140	3	105	2	70	2	70	2	70
Mules	22	550	11	275	7	175	5	125	3	75	2	50	1	25
Oxen	9	135	5	75	3	45	2	30	2	30	1	15	1	15
Sheep	33	155	20	94	16	75	9	42	7	33	4	19	3	14
Other Cattle	34	238	22	154	14	98	13	91	8	56	6	42	5	35
Milch Cows	16	262	11	280	9	148	6	98	5	82	4	66	3	49
Other Animals		150		150		100		80		60		60		60
Required	3633		2281		1419		1008		660		495		391	
Produced	3500		2000		1500		750		500		300		250	
Difference	-133		-281		+81		-258		-160		-195		-141	
Value of Dif.	-$106		-$225		+$65		-$206		-$128		-$156		-$113	

[a]Source: See Appendices II and IV.

[b]The number of animals in each class was obtained from the manuscript census returns in the same manner as were the agricultural productions. For an outline of the procedure used see Appendix IV.

[c]The column marked "2slaves" actually represents those farms with from one to four slaves; "7" represents those with from five to nine; "15" represents those with from ten to twenty; "25" represents plantations with from twenty-one to thirty slaves; "45" represents plantations with thirty-one to sixty slaves; "80" represents plantations with more than sixty slaves. Of course, the last figure was not selected arbitrarily: eighty slaves was the median size of slaveholding for those in the group of sixty or more slaves.

[d]See Appendix III for prices.

25; two slaves, 20; no slaves, 14. These figures should be reduced by five per cent to account for losses by theft and disease. A more serious problem arises from the practice of buying hogs and fattening them on the plantation. Many of the plantation records, such as those used to arrive at the estimate of weight,[1] indicate that these purchases were regular and sizable. Since there is no way to judge accurately the proportion of hogs purchased I have estimated conservatively that twenty per cent of the hogs were purchased.

As noted previously, Southern hogs did not average above 140 pounds. But I have reduced this figure to 125 pounds for two reasons: the records came from the most advanced plantations, and the average weights were inflated by the inclusion of hogs purchased from Kentucky and elsewhere.[2] Since the weights are gross allowance must be made for loss in slaughtering. The American Cotton Planter estimated that such losses were twenty per cent, but this figure is probably too low. In the Cincinnati market, where the hogs were much superior to those raised in the South, twenty-five per cent was lost.[3] It should be safe to assume that

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[1] Supra, pp. 130ff.

[2] Cf., e.g., Ashmore MSS, Dec. 25, 1856; Massie "Crop Book," passim.

[3] The American Cotton Planter, XII (April, 1858), 133; Berry, pp. 144-46.

the smaller Southern hogs had a margin of waste not less than twenty-five per cent.

We then arrive at the following schedule of hogs yielding ninety-four pounds of pork each: plantations with eighty slaves, 131; forty-five slaves, 58; twenty-five slaves, 45; fifteen slaves, 31; seven slaves, 19; two slaves, 15; and no slaves, 11.

There is no sure way of determining the prices paid by Mississippians for pork in the 1850's. By 1861 barrels of mess pork were selling in Cincinnati for from nine dollars and fifty cents to seventeen dollars. The higher price is doubtless the better, for planters slaughtered their own hogs during the winter and had to buy during the summer, when prices were high. New Orleans prices fluctuated from fifteen dollars and twenty-five cents to nineteen dollars and fifty cents during 1858-1859, and given the differentials between New Orleans and Cincinnati, these figures are roughly comparable to those above.[1] In Alabama during the 1850's planters reportedly paid from eighteen to twenty dollars per barrel, perhaps as a result of the additional transportation costs.[2] On the basis of this evidence planters and farmers in Mississippi may be assumed

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[1] New Orleans Price-Current, Sept. 1, 1859; Berry, p. 239.

[2] Minnie C. Boyd, Alabama in the Fifties. A Social Study ("Columbia University Studies in History, Economics and Public Law," no. 353; New York, 1931), pp. 29-31.

TABLE 4

PORK REQUIRED AND RAISED IN THE MISSISSIPPI COTTON BELT, 1860[a]
(in pounds)

Pounds of Pork Required By	Number of Slaves on Farms and Plantations[b]						
	80	45	25	15	7	2	0
Slaves	14,560	8,190	4,550	2,730	1,274	364	0
Whites	1,100	1,100	1,100	500	500	500	500
Total	15,660	9,290	5,650	3,230	1,774	864	500
Pork Produced	12,314	5,452	4,230	2,914	1,786	1,410	1,034
Difference	-3,346	-3,838	-1,420	-316	+12	+546	+534
Value of Difference	-$284	-$326	-$121	-$18	0	+$46	+$45

[a]For sources and notes see Table 3.

[b]See Table 3, n. b.

TABLE 5

CORN AND PORK REQUIRED AND PRODUCED IN THE MISSISSIPPI COTTON BELT IN 1860, WITH ESTIMATED IMPORTS IN VOLUME AND VALUE[a]

Number of Slaves[b]	Corn[c]				Pork[d]				Extra Foods	Total Cost
	Req. (bu.)	Prod. (bu.)	Imports or Surplus (bu.)	Value[e] of Imports	Req. (lbs.)	Prod. (lbs.)	Imports or Surplus (lbs.)	Val.[e] of Imports		
80	3633	3500	133	$106	14560	12314	2246	$192	$80	$378
45	2281	2000	281	225	9290	5452	3838	326	45	596
25	1419	1500	+81	+65	5650	4230	1420	121	25	81
15	1008	750	258	206	3230	2914	316	27	15	248
7	660	500	160	128	1774	1786	+12	0	7	135
2	495	300	195	156	864	1410	+546	*46	2	112
0	391	250	141	113	500	1034	+534	+45	0	68

[a]Source: Appendices II and IV

[b]See Table 2, n. b. and Table 3, n. b.

[c]See Table 3.

[d]See Table 4.

[e]See Appendix III and pp. for determination of prices.

to have paid about seventeen dollars per barrel in the late 1850's.

The estimated amounts of corn and pork raised and required by farms and plantations (Tables 3 and 4), together with the small amounts of extra foods, discussed above, yield a schedule of total food costs for agricultural units of various sizes (Table 5).

Other Evidence Relating to Food Costs

Evidence from plantation manuscripts and other sources suggests that the estimates of total food costs in Table 5 are too low. The most impressive feature of these additional data are that they come from plantations that undoubtedly were among the best managed in the South. Possibly, I have underestimated the amount of corn wasted[1] or the amount of pork either wasted or purchased in the form of live hogs; perhaps the allowance for minor food items is too low; or perhaps the prices at which the calculations were made are too low. As B. L. C. Wailes noted, planters bought from agents on long term credits and often had to pay greatly inflated prices.[2] In one instance

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[1]Fannie Kemble noted that the poultry kept by slaves got into everything and were a constant nuisance. Many such intangibles may have taken a large toll. See Frances Anne Kemble, Journal of Residence on a Georgian Plantation in 1838-1839 (New York: Harper & Brothers, 1863), p. 47.

[2]Address Delivered before the Agricultural, Horticultural and Botanical Society of Jefferson College (Natchez: By the Society, 1841), p. 19.

planters had to pay twenty cents for twelve-cent pork.[1] In case of short crops planters were at a worse disadvantage than usual. In 1860, for example, farmers in the northern uplands of Louisiana had to pay three dollars a bushel for corn.[2]

In 1858 M. W. Philips insisted that he had seen figures to prove that Mississippi planters spent ten per cent of the value of their cotton crop for meat alone. The editor of The American Cotton Planter, which published Philips' views, added that in Alabama similar circumstances prevailed.[3]

The following data, drawn from various sources, give some indication of actual expenditures made by planters for foodstuffs; unless otherwise indicated they were for 1850-1860. The amounts are often below the actual expenditures, for planters generally omitted many items and failed to specify the nature of certain large purchases. For purposes of comparison, the amounts reported in Table 5 for food per slave per year are: eighty slaves, $6; forty-five slaves, $11; twenty-five slaves, $3; fifteen slaves, $14; seven slaves, $13; it would not be practical to convert the figures for smaller units into per slave figures.

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[1]Norman S. Buck, Development of the Organization of Anglo-American Trade, 1800-1859 (New Haven: Yale University Press, 1925), p. 28.

[2]Shugg, p. 104.

[3]The American Cotton Planter, XII (June, 1858), 180; XIII (Feb., 1859), 71. The article in question was signed "M. W. P."; I do not think that there can be any doubt that Philips wrote it.

According to De Bow's Review, a plantation with sixty slaves in Mississippi in 1850 had to spend eleven dollars per slave for food.[1] The Charles Clark Plantation in Bolivar County, Mississippi, spent sixteen dollars for each of fifty-two slaves in 1853.[2] Haller Nutt of Natchez, Mississippi, spent twenty-five dollars for food for each of 125 slaves.[3] The Jenkins plantation in the same state spent about thirteen dollars for each of sixty slaves during a typical year of the Fifties.[4] According to his biographer, Benjamin L. C. Wailes spent about twelve dollars per slave for his sixty Negroes.[5] One planter spent fourteen dollars in 1837 for each of thirty-six slaves.[6] Francis Terry Leak of Tippah County, Mississippi, estimated that he spent eight dollars per slave for his 110 slaves, but his records indicate that he was spending about ten dollars.[7]

Similar reports came from other states. According to Edmund J. Forstall's Agricultural Productions of Louisiana,

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[1]VIII (Jan., 1850), 18.

[2]Charles Clark and Family Papers, 1810-1892, XII, Oct. 19, 1853, in the State Department of Archives and History, Jackson, Mississippi.

[3]Haller Nutt Papers for 1850's, passim.

[4]"Stock Farm" records in Jenkins Plantation Book.

[5]Charles Sydnor, A Gentleman of the Old Natchez Region: Benjamin L. C. Wailes (Durham: Duke University Press, 1938), pp. 99f.

[6]Jones, Plantation South, pp. 280ff.

[7]Leak Diary, II, 218 and item dated June 30, 1845; III, 103, 107f.

a plantation with seventy-five slaves had to spend eleven dollars per slave in the late Forties.[1] It cost the James Monette farm of about fifteen slaves in Morehouse Parish, Louisiana, about seventeen dollars per slave in the Fifties.[2] The Moses St. John R. Liddell and Family Papers indicate that food costs in 1850 were about twenty-three dollars for each of sixty slaves.[3] The Stephen Duncan, Jr., Account Books indicate that about twenty-four dollars per slave was spent per year for 160 slaves.[4] The Planters' Banner reported in 1852 that a unit of twenty-five slaves had to spend twenty dollars per slave for food purchases.[5] And the 300 slaves on the Ervin estate in Louisiana each cost their owners about twenty-six dollars for food purchases.[6]

The Elisha King estate in Alabama reportedly spent about five dollars per slave for 150 slaves, and Henry Watson, Jr., of Greensboro, Alabama, spent close to thirty dollars for for each of sixty-seven slaves in 1848. Finally, a Virginia

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[1]Forstall, p. 24.

[2]James Monette Day Book and Diary, typescript in Louisiana University Library.

[3]The plantation was in Black River, Louisiana.

[4]Records for 1856-1860, in Louisiana State University Library.

[5]De Grummond, quoting The Planters' Banner for Sept. 25, 1852.

[6]Alice Pemble White, "The Plantation Experience of Joseph and Lavinia Ervin, 1807-1836," Louisiana Historical Quarterly, XXVII (April, 1944), 394f.

[7]Weymouth T. Jordan, "The Elisha F. King Family Planters of the Alabama Black Belt," Agricultural History, XIX (July, 1945), passim; Watson Account Book for 1832-48.

plantation with more than 175 slaves spent ten dollars per slave, and another with about 200 slaves spent seven in 1830.[1] The Isaac Franklin records show that in 1847, on an estate of more than 100 slaves, more than twenty-five dollars per slave was spent for food.[2] On the sugar and rice plantations expenditures were higher but so were receipts.[3]

The situation in the Georgia Cotton Belt was not essentially different for the slaveowning farmers, but the plantation owners seem to have been almost self-sufficient in foodstuffs (See Tables 6, 7 and 8.) The success of some of the big operators in the older Cotton Belt indicates that the theoretical possibility of raising foodstuffs could be transformed into reality when the economic pressure, and the economic resources, were strong enough. On the whole, however, we may safely say that the reform movement had not succeeded in making slaveowning units self-sufficient in foodstuffs by 1860.

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[1]Bruce Plantation Accounts, passim. Vigilance Plantation Account Book, 1829-30, in the Library of Congress.

[2]Wendell H. Stephenson, Isaac Franklin: Slave Trader and Planter of the Old South; with Plantation Records (Baton Rouge: Louisiana State University Press, 1938), records for 1847.

[3]Cf., J. Carlyle Sitterson, Sugar Country: the Cane Sugar Industry in the South, 1753-1950 (Lexington, Ky.: University of Kentucky Press, 1953), pp. 159f; A. V. House (ed.), Planter Management and Capitalism in Ante-Bellum Georgia: The Journal of Hugh Fraser Grant, Ricegrower ("Columbia University Studies in the History of American Agriculture," XIII; New York, 1954), pp. 170f; Hunt's Merchants' Magazine, XXXI (Nov., 1954), 640; John H. Randolph Expense Book, Louisiana State University.

TABLE 6

CORN REQUIRED AND PRODUCED IN THE GEORGIA COTTON BELT, 1860[a]

Item	Number of Slaves on Farms and Plantations													
	80		45		25		15		7		2		0	
	No.	Req.	No.	Req.	No.	Req.	No.	Req.	No.	Req.	No.	Req.	No.	Req.
Slaves	80	920	45	518	25	288	15	173	7	81	2	23	0	0
Whites		120		120		80		80		60		60		60
Hogs	157	707	121	545	78	351	69	311	42	189	44	198	31	140
Horses	5	175	3	105	3	105	2	70	2	70	2	70	2	70
Mules	20	500	12	300	6	150	5	125	2	50	2	50	1	25
Oxen	5	75	3	45	2	30	1	15	1	15	1	15	0	0
Sheep	39	183	15	71	27	127	10	47	8	38	4	19	2	9
Other Cattle	18	126	11	77	8	56	22	154	2	14	3	21	4	28
Milch Cows	30	492	10	164	16	262	11	180	9	148	9	148	5	82
Other Animals		150		150		100		80		60		60		60
Amount Required	3448		2095		1549		1235		725		664		474	
Amount Produced	3500		2400		1600		1000		600		480		300	
Difference	+52		+305		+51		-235		-125		-184		-174	
Value of Difference	+$47		+$275		+$46		-$212		-$113		-$166		-$157	

[a]For Sources and notes see Tables 2, 5.

TABLE 7

PORK REQUIRED AND RAISED[a]

Pork Required by (lbs.)	Number of Slaves on Farms and Plantations						
	80	45	25	15	7	2	0
Slaves	14500	8190	4550	2730	1274	364	0
Whites	1100	1100	1100	500	500	500	500
Total	15600	9290	5650	3230	1774	864	500
Produced	13100	8200	4900	4500	3700	2400	2200
Difference	-2500	-1090	-750	1270	1926	1536	1700
Value of Difference	-$213	-$93	-$64	$108	$164	$131	$145

[a]For sources and notes see Tables 3 and 4.

TABLE 8

CORN AND PORK REQUIRED AND PRODUCED
WITH ESTIMATED IMPORTS IN VOLUME AND VALUE[a]

Item	Number of Slaves on Farms and Plantations						
	80	45	25	15	7	2	0
Corn	+$47	+$275	+$46	-$212	-$113	-$166	-$157
Pork	-213	-93	-64	+108	+164	+131	+145
Extra Foods	-80	-45	-25	-15	-7	-2	0
Total Value of Imports Required or Surplus Produced	-$246	+$137	-$43	-$119	+$44	-$37	-$12

[a]For notes and sources see Tables 3, 4, 6 and 7.

CHAPTER VI

AGRARIAN REFORM AND ITS CONTRADICTIONS

The Agitation for Reform

Thoughtful Southerners, deeply disturbed by the condition of their region's agriculture, made a determined effort to do something about it. Edmund Ruffin, M. W. Philips, Noah B. Cloud, Thomas Affleck, David Dickson, and other less well known men, carried forward the tradition of John Taylor of Caroline and fought to convince planters and farmers that wasteful frontier methods had to be abandoned if the South was to progress. Although these men have been honored by historians and their work is generally appreciated, no study of Southern agriculture should fail to pay homage to their selfless efforts and genuine achievements. Yet, on the whole, they failed. They assumed that the problem was one of the normal evolution of better methods through the dissemination of information and that a thoroughgoing reformation could take place within the slave system. Previously, I have argued that these contentions were false, but the reforms that did occur need analysis and evaluation.

The history of the Southern commercial conventions and their failure to accomplish much has been ably reviewed by Herbert Wender. From the middle 1830's the results were the same: demands for direct trade with Europe, agitation for Southern manufactures, proposals for railway expansion, programs for the regulation of the sale or production of cotton, and some sentiment for reopening the slave trade.[1] The proposals discussed at these conventions and at the similar meetings of cotton planters[2] revealed two tendencies: an unwillingness to recognize that the South's problems were rooted deep in the economic structure and could not be solved by quick and easy measures, and a preoccupation with political matters. As Phillips puts it, the conventions were concerned primarily with political agitation and with giving the South a feeling of separate destiny.[3]

Ruffin, a practical man, usually concentrated on modest and realizable projects like state aid for agricultural groups. He admitted that the political position of the South rested on a strict construction interpretation of

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[1]Herbert Wender, Southern Commercial Conventions, 1837-1859 ("Johns Hopkins University Studies in Historical and Political Science," XLVIII, no. 4; Baltimore, 1930), pp. 10f, 15f, 25, 35ff; also De Bow's Review, I (Jan., 1846), 7-21; XI (July, 1851), 30ff; De Bow, Industrial Resources, I, 132; Hunt's Merchants' Magazine, XXXIV (March, 1856), 392f.

[2]Weymouth T. Jordan, "Cotton Planters' Conventions in the Old South," Journal of Southern History, XIX (Aug., 1953), 321ff.

[3]Ulrich B. Phillips, "The Central Theme of Southern History," American Historical Review, XXXIV (Oct., 1928), 31-36.

the national constitution but argued that state governments should aid agricultural schools and societies. He bitterly criticized the prevalent laissez faire attitude, which he regarded as the cause of Virginia's failure to assist agriculture.[1] The agitation for state aid had a long history in Virginia. In 1820 the Albemarle Agricultural Society, one of the oldest and best of such groups, demanded that an agricultural professorship be established in the University of Virginia and that steps be taken to assist planters and farmers.[2] In 1837 a Virginia agricultural convention petitioned the state legislature for grants-in-aid and an appropriation of $1,000 for an advisory Board of Agriculture. After years of campaigning the reformers won a major victory in 1841 when a board was established; unfortunately, the legislators declined to appropriate any funds besides inadequate traveling expenses of three dollars per member. Ruffin and other members of the board tried to carry out their task of collecting and disseminating information, but when the legislators refused to grant additional money to meet their expenses they ceased their activity.[3] Virginia's

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[1] The Farmer's Register, I, no. 11 (1834), 690ff; V, no. 7 (1837), 429f; VI, no. 11 (1838), 695-99.

[2] Rodney H. True, "The Early Days of the Albemarle (Va.) Agricultural Society," and True (ed.), "The Minute Book of the Albemarle (Va.) Agricultural Society," passim--both in The American Historical Association Report for 1918, I.

[3] Rodney H. True, "The Virginia Board of Agriculture, 1841-43," Agricultural History, XIV (July, 1940), 97-103; The Farmer's Register, IV, no. 1 (1837), 55-63; IX, no. 5 (1841), 239, 323; X (1842), 232, 241, 257, 298, 335, 383, 512; The Southern Planter (Richmond), II (Jan., 1842), 39.

experience paralleled that of other slave states, for money simply was not available.[1] During the prosperous 1850's some Southern states made small contributions to state and local agricultural societies, but the general record remained poor.

Although Southern agricultural reformers scored modest successes in their campaigns to organize state and local agricultural societies in the late Forties and the Fifties, the results were, on the whole, discouraging. Of the 912 agricultural, horticultural, and agricultural-mechanical societies in the country in 1858 only 197 were in the slave states; of those only 76 were in the cotton states.[2] Fourteen state fairs were held during the same year, but only two of them were in the Southern states.[3] Some historians make too much of those agricultural societies that did exist and suggest that the South was becoming more and more conscious of the need for such groups. Small advances notwithstanding, there is little to indicate that Southern organizations had significant strength. In the 1830's Ruffin ridiculed local societies and their programs. "The publication of their constitutions," he noted, " has so often been

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[1]In 1857 a Mississippi Agricultural Bureau was established by the legislature, but it seems to have been primarily a propaganda agency for secessionists. See Moore, pp. 201ff.

[2]Computed from data in U. S. Commissioner of Patents, Report on Agriculture, 1858, p. 91.

[3]Kentucky Farmer, I (July, 1858), 8. One fair was in Kentucky and the other in Alabama.

the prelude to [their] dissolution."[1] Ten years later a meeting was called in Richmond to organize a state agricultural society but few attended besides politicians. The customary grandiose plans emerged, and Ruffin, who had refused to attend a meeting that he believed would lead to nothing, was elected president. He declined, and as he predicted, the society proved worthless.[2]

When societies were organized they too often repeated the experience of the short-lived Anderson County (Tennessee) Agricultural and Mechanical Society: eighteen persons attended the organizational meeting and eight were elected officers.[3] In Louisiana De Bow reported that the only functioning society was poorly attended and accomplished little.[4] Agricultural societies were revived during the 1850's in Mississippi and elsewhere, but too often they were little more than specialized secessionist clubs.[5] In general, Southern agricultural societies were dominated by planters who were more interested in social activities than practical affairs and who preferred raising race horses to work animals.

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[1] The Farmer's Register, III, no. 9 (1838), 575.

[2] "Incidents of My Life," unpublished autobiography in Ruffin papers, III, 223. Note the experience of James Mallory of Talladega, Alabama, Diary, Aug. 5, 1850 in the University of North Carolina.

[3] Constitution and Minutes for 1856, pp. 7, 13, in David K. Young papers, in the University of North Carolina.

[4] Industrial Resources, I, 62f.

[5] Cf., Moore, pp. 196-199.

In 1858 the Patent Office polled the nation's agricultural socieities to determine their size and effectiveness. About thirty-five per cent of those in the free states and territories (247 of 715) responded, whereas only seventeen per cent of those in the cotton states (thirteen of seventy-six) and twenty-two per cent of those in the Upper South (twenty-seven of 121) were heard from. Probably, those societies that failed to respond were relatively weak. The free state societies that did report accounted for a membership of 91,480, compared with a total slave state membership (of the societies reporting) of only 8,689. Of those in the South only 2,474 were in the cotton states. Four Northern States (Illinois, New York, Ohio, and Pennsylvania) each boasted a larger membership than was reported for the entire South. Three other free states (Massachusetts, Michigan, and Indiana) each had a membership of more than 7,500.[1]

Some Southerners suggested that planters, living in isolation, could not be moved to participate in agricultural or economic organizations.[2] This contention probably has a good deal of merit, for planters, with a typically

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[1]Computed from data in the U. S. Commissioner of Patents, Report on Agriculture, 1858, pp. 91-220.

[2]See, e.g., the speech of the Rt. Reverend Stephen Elliott, Jr., to the Southern Central Agricultural Society, Transactions, 1851. Cf., the perceptive remarks of W. J. Cash, The Mind of the South (Garden City, N.Y.: Doubleday Anchor Books, 1954), p. 45; and for similar problems in the slave colonies of the West Indies see Lowell Joseph Ragatz, The Fall of the Planter Class in the British Caribbean, 1763-1833 (New York: The Century Co., 1928), pp. 12, 68ff.

aristocratic preference seem to have been far more interested in politics than in agriculture. In 1836 The Southern Agriculturalist estimated that nine-tenths of all Southerners who received a periodical chose a political one, and The Southern Planter made a similar observation twenty years later.[1] De Bow's famous Industrial Resources of the Southern and Western States, which was especially concerned with Southern agricultural and economic problems and was especially oriented toward a Southern audience, sold six times as many copies in the free states as in the slave, and its total circulation in the slave states was described as small.[2] Although Southern political journals did their best to publish information on agricultural affairs, they were no substitute for specialized journals.

The South published only nine of the country's forty-one agricultural periodicals in 1853, and whereas many of those in the free states were weekly or biweekly, all in the slave states were monthly publications.[3] Many Southerners in fact preferred Northern publications. Ruffin partly blamed the demise of The Farmer's Register on Northern competition.[4]

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[1] The Southern Agriculturalist, IX (Aug., 1836), 411; The Southern Planter (Richmond), XV (Jan., 1855), 81. Cf., the speech of Garnett Andrews to the Planters' Club of Hancock, Ga., in The American Agriculturalist, I (March, 1843), 367; and Robert W. Williams, pp. 45ff.

[2] De Bow's Review, XIV (June, 1853), 532.

[3] Journal of the United States Agricultural Society, I (1853), 263.

[4] "Incidents of My Life," II, 47, in his papers.

He noted that Northern publications had a much wider circulation and could be priced well below Southern counterparts. In 1852 the Southern Star expressed outrage because Southerners formed clubs to support Northern periodicals of their preference.[1] Perhaps, however, this preference for Northern periodicals was unavoidable. Southern agricultural journals were largely devoted to problems of plantation management and to crops and matters in which planters were interested. It may well be that Northern journals printed more information and items of interest to Southern farmers.

There were, however, reasons for the weakness of Southern societies deeper than the aristocratic attitudes of the planters and the weakness of the agricultural journals. In 1847 a planter wrote that if the societies were to give plows instead of cups for prizes the results might be better.[2] The planter had sensibly drawn attention to the lack of working funds that plagued the slave South in so many of its undertakings. In 1855 the Massachusetts Agricultural Society offered $1,000 for the best mower and, after making its selection, spent another $50,000 for the production and distribution of suitable implements.[3] The German farmers of Texas had a number of societies, one of

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[1]Quoted in the South-Western Monthly, I (June, 1852), 373f.

[2]The Southern Cultivator, V (Jan., 1847), 77.

[3]D. M. Dunham, The History of Agricultural Implements ("Eighteenth Report to the Maine Board of Agriculture, 1873), pp. 370f.

which spent $12,000 one year to introduce new trees and plants.[1] Where and how could the planters of the Old South have raised such sums? And even if they had, the difficulties in the way of extensive reform would have remained.

The Southern reformers did their best and in some areas produced impressive results. The great agricultural revival in Virginia and Maryland during 1820-1860 has received considerable attention, and its general features are sufficiently well known to require no exposition here.[2] In part the experience of Maryland and Virginia was repeated in other sections of the South, and the 1850's have even been described as the "golden decade" of the State Agricultural Society of Alabama.[3] Yet, by 1858 there were only seven agricultural societies left in Alabama. The Alabama State Agricultural Society, organized in 1855, reported a life membership of 182 but did not give figures on annual memberships. The Lowndes County Agricultural Society, organized in 1858, reported a membership of only fifty; the other five did not respond to Patent Office queries.[4]

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[1]Ella Lonn, Foreigners in the Confederacy (Chapel Hill: University of North Carolina Press, 1940), p. 17.

[2]The most important study is Craven's Soil Exhaustion, but see also Kathleen Bruce, "Virginian Agricultural Decline to 1860: A Fallacy," Agricultural History, VI (Jan., 1932), 3-13; and Charles W. Turner, "Virginia Agricultural Reform, 1815-60," Agricultural History, XXVI (July, 1952), 80-89.

[3]Weymouth T. Jordan, "Agricultural Societies in Ante-Bellum Alabama," Alabama Review, IV (Oct., 1951), 241. Cf., J. S. Whitten of Georgia in the U.S. Commissioner of Patents, Report on Agriculture, 1847, pp. 386ff.

[4]U. S. Commissioner of Patents, Report on Agriculture, 1858, p. 92.

Throughout the South during the Fifties reports of reliance on the one-crop system and of little progress toward diversification continued to overshadow information to the contrary.[1]

The type of diversification that occurred below Virginia aimed at curbing the importation of foodstuffs, rather than at effectively breaking the South's dependence on one or two cash crops. Cornelius O. Cathey's recent study, Agricultural Developments in North Carolina, provides a sober reappraisal of the reform movement. Although he refused to link the state's agricultural backwardness to slavery and although he expresses a pardonable sympathy for the farmers and planters who wrestled with the problems of their day, he concludes that the tempo of development was painfully slow.[2] Similarly, John Hebron Moore reports that high cotton prices in the Fifties weakened the reform movement in Mississippi. Although individual planters continued to do commendable work, the organized impulse toward reform that had appeared in the depressed Forties was largely absent.[3] Those historians who assume that, if the

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[1]Cf., e.g., Thomas Affleck in Affleck's Southern Rural Almanack, 1856, p. 15; South Carolina Mineralogical and Geological Survey, Report of 1857, pp. 113f.

[2]Passim. This awareness of tempo alone belies the opinion of one reviewer, who says that the book contains nothing new in approach or interpretation (Hallie Farmer in The Journal of Southern History, XXIII, May, 1953, p. 236). On the contrary, Cathey's understanding of the pace at which the movement grew indicates an important break from the now traditional, uncritical revisionist approach. For an earlier, still useful appraisal with similar merit see W. H. Yarbrough, Economic Aspects of Slavery in Relation to Southern and Southwestern Migration (Nashville: George Peabody College for Teachers, 1932), pp. 54f.

[3]Moore, p. 91.

war had not intervened the reform movement would have proceeded smoothly in a course of natural evolution, fail to appreciate the immense contradictions involved in such a process.[1] The grave effects of slavery in retarding capital formation, providing inefficient labor, and preventing the rise of a home market made the task of the reformers almost impossible. Unless a conversion to free labor occurred, the success of the reform movement in one area only intensified the difficulties in another.

The success of the reform movement on a significant scale rested on the ability of the planters to fulfill two conditions: they had to accumulate the capital needed to finance reforms and they had to guarantee closer supervision of the labor force than had occurred previously. The principal method of meeting both conditions simultaneously was the sale of surplus slaves. These sales provided large amounts of cash and reduced the work force to that size which was best suited to local soil, crop, and managerial circumstances. Craven dates the agricultural

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[1]See the works previously cited of Craven, Jordan, Charles W. Turner, Bruce, Weaver, and Rosser H. Taylor. See also, Alfred Glaze Smith, "Economic Readjustment of an Old Cotton State: South Carolina, 1820-60," (Unpublished doctoral dissertation, Columbia University, 1954); Blanche Henry Clark, The Tennessee Yeomen, 1840-1860 (Nashville: Vanderbilt University Press, 1942); and two articles by James C. Bonner: "Advancing Trends in Southern Agriculture," Agricultural History, XXII (Oct., 1948), 248-59, and "Profile of a Late Ante-Bellum Community," American Historical Review, XLIX (July, 1944), 663-80. The same idea has appeared less baldly in the works of many others.

revival in Maryland and Virginia from 1820;[1] the date is important, for the demand for slaves to work in the cotton fields of the Lower South got under way about that time. Craven admits that the farmers and planters of Maryland and Virginia "saw the necessity for decreasing the number of slaves employed," and the same idea appeared in those areas of the Lower South where the deterioration of agriculture had reached alarming proportions.[2] Similarly, in the western portion of the Upper South, where the plantation system never took a firm hold and where slaveholdings were small, modest progress in diversification was effected. The Virginia State Agricultural Society awarded prizes for livestock in 1853, as did the Kentucky State Agricultural Society in 1858. By taking ninety-four of the persons who received awards and learning the number of slaves reported for each in the manuscript returns for 1850 and 1860 I found that the median slaveholding was four and that thirty-six farmers owned no slaves at all.[3] Nevertheless,

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[1] Soil Exhaustion, pp. 122f.

[2] Ibid., p. 127; De Bow's Review, VI (Aug., 1848), 127; The Southern Planter (Richmond), XII (June, 1852), 163ff; The American Farmer, XIV (May 18, 1832), 76. The ancient Roman agricultural reformers had much the same solution. Cato urged a small slave force of ten to fifteen laborers and insisted that the estate should always be located near sources of hired laborers who could be called upon as needed. See Frank, Economic Survey, I, 171f.

[3] See the Virginia State Agricultural Society, Journal of Transactions, I (1853), 137f (prizes for draught horses, mules, jacks, oxen, cattle, and swine); Kentucky State Agricultural Society, Report on Awards Issued at the Fair of 1857 (Frankfort: 1857), see the lists for cattle, work animals, and hogs; Kentucky Farmer, II (Sept., 1858), 44 (Clarke County Agricultural Society awards for swine.)

the reforming farmers may have formerly owned more slaves or been newcomers who moved into sections of northern Virginia and elsewhere as their predecessors abandoned exhausted lands. If one can judge by the interest expressed in agricultural societies and journals, the planters and big slaveholders played a greater role in reforming most areas than did the farmers. The Virginia tidewater, for example, was reformed largely through the efforts of big operators who were able to turn surplus slaves into cash. The prerequisite for reform was not a small slaveholding as such but close supervision and capital accumulation. In a planter-dominated economy the large slaveholders were in the best position to make necessary adjustments. The consequent reduction of their slave force need not have dropped them from the planter category.

Although, theoretically, slave sales were not the only way in which to accumulate capital, they provided the one dependable method for raising large sums quickly. Kentucky and Missouri regularly sold surplus Negroes south, and the Carolinas and Georgia began selling surplus Negroes at an earlier date than is generally appreciated.[1] James

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[1]Gray probably errs in assuming that South Carolina did not export slaves until 1850 (History of Agriculture, II, 651). Alfred Glaze Smith, Jr. (p. 34) insists that evidence shows considerable exports as early as 1830. The statistical method devised by Frederick Bancroft for measuring exports and imports supports Smith's contention. See Appendix I of this study. Cf., H. A. Trexler, Slavery in Missouri, 1804-1865 ("Johns Hopkins University Studies in Historical and Political Science," Series 32; Baltimore, 1914), pp. 47f; Ivan E. McDougle, Slavery in Kentucky, 1792-1865 (Lancaster, Pa.: Press of the New Era Printing Co., 1918), pp. 15-19.

C. Bonner, for example, is not altogether correct, when in his excellent study of the reform movement in Hancock County, Georgia, he writes that the number of slaves increased during 1850-1860.[1] Although the slave population rose from 7,306 to 8,137 during the decade, it should have risen, if we consider the normal rate of natural increase, to 9,016; in other words, 879 slaves were sold or taken out of the county, compared with only 182 during 1840-1850. The export of slaves, after dropping from its high of about 3,000 during 1830-1840, again began to gain momentum during the Fifties.[2] These sales provided the income that paid for fertilizer, improved implements, and better breeds of animals.

The Labor Shortage in Virginia

The writings of J. D. B. De Bow illustrate clearly the economic dilemma facing the Old South. For years he warned against the dangers of a surplus Negro population and stressed the need for sending excess slaves into factories. Yet in the 1850's he vigorously championed the reopening of the slave trade as a measure to increase the size of the Southern labor force and to provide the population

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[1] The American Historical Review, XLIX (July, 1944), 666.

[2] For the method used in these computations see Appendix I.

to guarantee political parity with the free states.[1] De Bow's effort to maintain both positions was typical of Southern economists, who were unable to resolve the paradox of a simultaneous labor shortage and labor surplus.

In 1844 Nathaniel A. Ware wrote that one-third of the slaves engaged in food production in the Upper South could be removed from agriculture without diminishing total output.[2] Ware had stumbled on the essence of the problem: the South was gripped by a perpetual and deepening case of disguised unemployment. That is, the entire agricultural slave force of the South produced only so much as might have been produced by far fewer laborers at the same level of technique but with a better system of organization. The South was, on the one hand, overpopulated, for per capita returns were less than they would have been if the agricultural population had been smaller and better organized; on the other hand, it was underpopulated, for its population was not growing fast enough to keep pace with the prerequisites of economic and political power.[3]

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[1] De Bow's shift is traced in Robert F. Durden, "J. D. B. de Bow: Convolutions of a Slavery Expansionist," The Journal of Southern History, XVII (Nov., 1951), 441-61, and Joseph Dorfman, The Economic Mind in American Civilization (London: George G. Harrap & Co., 1947), II, 950. Neither explores the implications of this contradiction. Cf., De Bow, Industrial Resources, II, 314.

[2] Notes on Political Economy as Applicable to the United States by a "Southern Planter" (New York: Leavitt, Trow, and Co., 1844), p. 30.

[3] Optimum population, then, is that which will produce a maximum output with a given level of technique. Cf., Pei-kang Chang, Agriculture and Industrialization ("Harvard Economic Studies," LXXXV; Cambridge, 1949), p. 51. On the drain of Southern population to the North see Yarbrough, pp. 37ff.

Initially, slavery provided the South with an economic advantage, for the importation of cheap black labor compensated for the scarcity of white labor; and under conditions of a plentiful and inexpensive labor supply the most effective method of production was the lavish use of labor. Low marginal productivity and disguised unemployment were inherent in this method, and, although not at first significant, they grew increasingly more serious as labor became dearer. There was some truth in the observation of an unidentified Southerner who wrote in 1852 that the superiority of Northern agriculture was due not to its utilization of free labor as to the prevailing conditions of labor scarcity, which led to the development of labor-saving methods.[1]

An agrarian revolution capable of ending disguised unemployment must precede industrialization or proceed along with it, although agricultural productivity cannot be raised much above its initial gains unless industry grows and helps improve agricultural technique. In general, the essential requirement for an agrarian reform that could have raised a prosperous yeomanry in place of a servile labor force with minimal purchasing power, as well as for significant industrialization, was the elimination of slavery. The United States was fortunate in having a remarkably favorable geographical position and virgin land with which to lure capital and skilled labor. But the South, once slavery was

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[1]U. S. Commissioner of Patents, Report on Agriculture, 1852, p. 379.

implanted, was faced with a powerful competitor within its national boundaries and found its land quickly absorbed by large slave-operated estates. Thenceforth, more than modest and gradual reforms were needed if the South was not to fall further and further behind. The type of reforms recommended by those who wished to retain slavery would not have solved basic problems. Diversification of agriculture, for example, without elimination of slavery probably would have brought about a backward step toward natural economy: the planters would have grown more food for their own use but would not have found markets for a surplus.

In 1856 A. L. Scott of Virginia drew attention to a growing labor shortage in his state and argued that, if the slave trade were not reopened, agrarian reform would grind to a halt.[1] Gray accepts much of this approach and suggests that the high price of slaves made continued agricultural progress difficult. The substitution of free labor for slave labor would have been a long and costly process, and great hardship and stagnation would have accompanied the transition.[2] The latter contention is doubtful, for such a transition was making rapid strides in Maryland, where agriculture advanced more quickly than in Virginia. Wherever the reform movement took hold free labor came into wider use,

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[1] Proceedings of the Southern Convention Held in Savannah, Georgia, December, 1856, Supplement to De Bow's Review (New Orleans, 1857), p. 211.

[2] History of Agriculture, II, 691, 931f.

at least as a supplement to slave labor.[1]

But the concept of a labor shortage needs clarification, for I believe that Gray and those who have followed him have fallen into a serious error. In 1859 Ruffin, who was much concerned with the labor problem in Virginia, pointed out that without continued slave sales to the Lower South the main source of capital accumulation would be shut off and reform would stop. At the same time he feared that continued sales would undermine the slave system in the Upper South.[2] Thus, reform was being impeded by a labor shortage brought about by the depletion of the slave supply, whereas, paradoxically, curtailment of the slave exports would have ended hopes for further progress.

Gray fails to deal with the problem of disguised unemployment in a slave economy, and his view of the labor problem is therefore one-sided. The labor shortage in Virginia was essentially a deficiency of workers with a level of productivity above that of the average slave. Since the economy could maintain only a certain number of small slaveholdings there were limits, easily reached, beyond which the slave force could not be cut. Virginia needed skilled and semiskilled agricultural and industrial workers who could function in a growing and diversified economy. If

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[1]Cf., Bonner, The American Historical Review, XLIX (July, 1944), 667; Craven, Soil Exhaustion, p. 158; C. O. Cathey, "Sidney Weller: Ante-Bellum Promoter of Agricultural Reform," North Carolina Historical Review, XXXI (Jan., 1954).

[2]De Bow's Review, XXVI (June, 1859), 650.

the drain of slaves to the south had stopped, accumulation of capital for further reforms would also have stopped; the paring of the slave force for intensive reforms would have been reversed, and the tendency toward concentration would have reasserted itself. Thus, without increased infusions of free farmers and agricultural laborers the Virginians were damned with or without continued slave exports. The first contradiction of the reform process was manifesting itself: progress based on slavery was narrowly circumscribed; either the economy of Virginia followed that of Maryland into a pronounced conversion to free labor, or the old difficulties and weaknesses of plantation slavery would reassert themselves with greater force than ever.

The second contradiction lay in the process of slave sales, for regardless of whether slave-raising was consciously fostered or was part of the exigencies of the economy, the systematic reduction of the slave force corroded the pride in slaveownership that was so essential to the ideology of the slave system. Farmers would no longer have before them the lure of prestige and power through slaveownership. Money through rational production would threaten to open a new road to status. The intrusion of bourgeois values might be fought off in the tradition-bound Virginia tidewater. But elsewhere?

An Analysis of Some Leading Reform Counties

G. W. Featherstonhaugh wrote in the early 1840's that the annexation of Texas would convert the older slave states into a "disgusting nursery" for the production of slaves for sale.[1] Except for an occasional writer like Frederic Bancroft, historians have not treated this view favorably. Too often the issue has been unnecessarily confused with the separate question of slaveraising as a matter of policy. I do not wish to enter into the debate on whether or not slave raising was deliberate; rather, I propose to demonstrate that the economy of the older slave states rested on it. Possibly not one slaveholder in Virginia or Maryland ever thought of raising slaves for sale; nonetheless, the economy could absorb only part of the natural increase, and more important, the profits that accrued to slaveholders in the reform areas came primarily from the sale of surplus Negroes.[2]

We need to weigh the income from slave sales against that from agricultural production in order to get a clearer idea

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[1] Excursion Through the Slave States (2 Vols.; London: John Murray, 1844), II, 189.

[2] Matthew B. Hammond (p. 634) wrote early in this century that "slaves were seldom kept in Virginia and Maryland for the sake of raising crops, but crops were often cultivated for the sake of raising slaves." His statement has been regarded as an absurd literary exaggeration. His views were largely impressions and need to be qualified, but they were remarkably accurate in their essentials.

Brazilian slaveholders were frank. According to one of their manifestos: "The most productive feature of slave property is the generative belly." See Gilberto Freyre, The Masters and the Slaves, trans. Samuel Putnam (2nd Eng. lang. ed., rev.; New York: Alfred A. Knopf, 1956), p. 324.

of the role of slave sales in the economy. Ideally, a study of this kind should have two sets of data: the net agricultural income from slaveholders in the reform counties and the income from the sale of surplus slaves. The determination of net agricultural income for counties so complex would require years of painstaking research and might not be worthwhile, for a much shorter, rougher method should produce results adequate for most purposes. I have calculated the gross income for twenty-three leading reform counties in Maryland, Virginia, and Georgia.[1] (The gross income was calculated according to the procedure outlined in Appendix V.) The agricultural productions were obtained from the printed census reports for 1850 and 1860 and translated into monetary values.[2] The two years' totals for each county were then averaged, for they are the only ones for which we have reliable data; since 1850 was a good year and 1860 a very good one the average should be a more than generous estimate of annual income. Ten per cent was deducted in order to remove the contribution of the

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[1]In Maryland: Dorchester, Queen Anne, Somerset, Talbot, Worcester, Prince George, Anne Arundel, Calvert, Charles, and St. Mary's. In Virginia: Fairfax, James City, Hanover, Prince George, Charles City, Amelia, Fauquier, and Prince William. In Georgia: Baldwin, Clarke, Hancock, Oglethorpe, Putnam, and Wilkes. These counties are well known as reform counties. See Craven, Soil Exhaustion, pp. 143, 151, and passim; Bancroft, p. 29; Paul Murray, "Agriculture in the Interior of Georgia, 1830-1860," Georgia Historical Quarterly, XIX (Dec., 1935), 295; U. S. Commissioner of Patents, Report on Agriculture, 1851, pp. 274f.

[2]See Appendix III for the determination of prices.

nonslaveholders.[1]

The income from slave sales was calculated for the period 1830-1860, for the reform movement depended upon an initial accumulation of capital, and the period for determining slave sales must be projected further back than that for income.[2] The 1830's were the principal years of slave exporting, and no doubt the capital accumulated during those years found its way into production and helped guarantee the subsequent reforms. Moreover, whereas the 1840's were depressed years and slave sales fell off, the 1850's produced a revival of considerable proportions. An exact determination of slave prices would be difficult. In the 1850's prices at Richmond, Virginia, ranged from $350 for small girls to about $1,300 for the best male field hands; but prices in the earlier decades were lower. Rather than construct an elaborate schedule of prices from scanty evidence, I have decided to follow the simpler and more conservative course of using a low average price for the thirty-year period--$500 per slave. This figure is low enough to account for all necessary deductions, such as the cost of rearing and agents' commissions.

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[1]In Fauquier and Prince William counties, Virginia, which were studied intensively (see Appendices II-V), nonslaveholders were found to have contributed twenty-one per cent of the gross income, whereas in Charles City and Amelia they contributed about ten per cent. I have used the lower figure to provide the most conservative estimate possible.

[2]See Appendix I for the methods used to determine the number of slaves exported and the number of slaves sold.

The average gross income for the twenty-three counties in 1850 and 1860 was $17,752,768; the total income from slave sales for 1830-1860 was $26,123,500 or $870,783 per year. In short, if the productions of agriculture showed no profit at all, the slaveowners would have realized a return from slave sales equivalent to about five per cent of their gross agricultural income. If we then examine the gross agricultural income of the planters (i.e. those with twenty or more slaves) in some of these counties we can get an idea of the importance of the slave sales in the general economy. I have studied four of the most important Virginia counties (Amelia, Fauquier, Charles City, and Prince William) and have found that the planters averaged about $4,000 in gross income in 1860. The revenue from slave sales should have been about $200; i.e. planters must have had to sell a slave about every two and one-half years. Since it would be absurd to think that the planters of these counties were earning a profit at a rate greater than that of the planters of the cotton states it is clear that the revenue from these sales was part of the regular income. Moreover, since these calculations apply to the prosperous Fifties there is every reason to believe that the pressure to sell slaves was greater in the preceding decades. Although the methods employed here are too rough for claims of exactness, the conservatism of the assumptions justifies the conclusion that agriculture was barely paying its way and was possibly running at a loss.

Of the twenty-three counties, five showed a decrease in gross agricultural income from 1850 to 1860, eleven showed only small to moderate increases, and seven showed substantial gains. Possibly, lower costs of production resulted in increased net earnings even when gross income fell. But there is no evidence of substantially lower costs, and the decrease in gross incomes probably reflected a decrease in net incomes as well. Although data are lacking for the median size of slaveholdings before 1860, hints about the size of slaveholdings and its relationship to income may be gleaned from the figures for white and slave populations for 1830-1860. By constructing a schedule of the percentage of slaves to the total population the following pattern was uncovered: in Maryland six of the nine reform counties showed a steady drop in the percentage of slaves from 1830 to 1860, whereas the remaining three (Calvert, Charles, and St. Mary's) did not change much. In Virginia four counties (Fairfax, Hanover, James City, and Prince William) showed a steady decline. Two (Charles City and Fauquier) remained about the same, and two (Amelia and Prince George) showed a reverse tendency. In Georgia only one (Baldwin) showed a decline, whereas the others revealed an increase in the number of slaves relative to the total population. Significantly, of the five counties where gross income declined from 1850 to 1860, three (Clark, Wilks, and Oglethorpe--all in Georgia) were among those in which the percentage of slaves increased, whereas a fourth (Charles, Maryland) was one of those that held steady. From these data I should suggest that the areas in which the reform

movement was oldest and most thorough had become less dependent upon slave selling and more upon crop production. Thus, white emigration slowed down, and increasing numbers of white farmers settled down to a more productive agriculture. In the newer reform areas of Georgia slave raising (in the economic sense in which I have used this term) was still increasing, and white farmers were still being driven from the land by low agricultural revenue.

The great reform movement failed to produce a healthy agricultural economy based on slave labor. Rather, it brought agriculture close enough to marginal operation to allow slaveowners to live moderately well on the income from the sale of expendable Negroes. Only in area that had undergone a transition for thirty or forty years was agricultural production again becoming a profitable enterprise, and these areas showed a marked shift away from slave labor altogether.

Thus, the third and most important contradiction of the reform movement appears: although continued progress rested upon the retention of markets for surplus slaves, the advance of the reform movement destroyed those markets. Once agriculture in the Lower South deteriorated sufficiently to require reformation the progress in the older areas had to stop. So long as there was sufficient fertile land in the Southwest to permit continuation of the wasteful methods of gang-labor exploitation the reform movement of the Upper South had room to expand southward. When the Lower South turned its attention

to reformation of its declining agriculture the markets for slaves would close and the whole reform process would break down. Reform in one area depended upon the maintenance and extension of old, wasteful methods in other areas. Therefore, a general reformation of Southern agriculture was impossible so long as slavery was retained.

CONCLUSION

Despite the valiant efforts of agricultural editors, professional reformers, and diligent planters and farmers, and notwithstanding impressive results in some areas, the Old South's agrarian reform movement failed to fulfill the hopes of its supporters and the claims of its recent historians. It could not have been otherwise, for so long as slavery remained the South could not provide the conditions necessary for a general reformation.

The diversification of agriculture and the improvement of livestock required the development of adequate urban markets. But the prevalence of slavery on the countryside and the political hegemony of the slaveholding class retarded the formation of a rural home market for industry and dried up important sources of capital accumulation. The retardation of industry in turn rendered difficult, if not impossible, the creation of the markets necessary for diversified agriculture. An agrarian reform was needed to begin the process by which industrial and agricultural markets could have emerged and supported each other. But agrarian reform was itself contingent upon the one thing that the South refused to consider--the abolition of slavery. While slavery persisted the initial steps toward the

creation of that rural home market upon which everything else depended was impossible.

In a more direct manner slavery impeded reform by keeping the productivity of labor very low. Possibly, slaves were as efficient or more efficient than free men in the cotton fields. But their efficiency in the cotton fields was due to the organization of unwilling workers in gangs; that is, the conditions necessary for the maintenance of an adequate level of productivity could not be duplicated in the many-sided operations of a diversified economy because the costs of supervision would have been prohibitive and the size of the work force clumsily excessive. Thus, the division of labor was held to a minimum and the level of technology kept very low. Without adequate division of labor and an opportunity to employ good machines and implements there was little hope of effecting genuine reforms on an adequate scale. Slavery set in motion a complex of forces: on the one hand, the direct effects of slave labor curbed the development of labor productivity; on the other hand, the indirect effects reinforced the direct ones and made matters much worse. The ingenious argument that blames the poor quality of labor on the Negro as a Negro will not stand analysis. If the argument means that the Negro is an inferior being, it is contradicted by all available scientific evidence. If it means that the work habits he brought from Africa were inadequate, then it is contradicted by the evidence of economic anthropology.

So long as slavery persisted the wasteful methods of agriculture occasioned by the presence of a moving frontier could not effectively be combated. The intricacies of the credit system forced upon a plantation economy the inability to raise enough capital to fertilize large estates, the inefficiency of labor in manuring, caring for livestock, and rotating crops, the lack of markets for livestock and hay--these and other effects of slavery left the South incapable of restoring the fertility of its worn out lands.

The reform movement itself was a pale reflection of its Northern counterpart. Relatively few agricultural societies had relatively few members, and Southern periodicals could not compare in quantity or frequency of publication with Northern. Undoubtedly, great progress occurred in Maryland, Virginia, and in some counties of the Lower Southeast. But in these areas reformation of agriculture followed a self-contradictory, self-limiting course. To pay for fertilizers and good breeds of animals planters and farmers sold surplus slaves to the Lower South. This measure also restricted the size of the work force, made it easier to supervise, and enhanced its versatility. But the drain of slaves from Maryland was undermining the slave system itself, and Virginia was about at the point where it would have to choose between a pronounced conversion to free labor or a reversal of reform. Then too, farmers and planters in these states had access to Northern urban markets. Furthermore, the persistent drain of slaves

threatened to weaken the pride in slaveownership that was so essential to the political and social domination of the very slaveowners who were being asked to conduct the reforms. Finally, and most important, the whole process turned upon the continued expansion of slavery and gang-labor methods in the Lower South. Without access to new territory the Lower South, when forced by declining agricultural profits to reform itself, would have had to close the markets for surplus slaves. Thus, agrarian reform under slavery could be successful only in certain parts of the South. While Southerners remained attached to the slave system as a way of life and not merely as a revenue-producing institution, they could not hope to make substantial economic progress.

APPENDICES

APPENDIX I

SLAVE IMPORTS AND EXPORTS

Several historians have argued that there is no way to estimate the proportion of plantation-raised slaves to those purchased, and that quite possibly the slave force was self-perpetuating throughout the South. Frederick Bancroft, however, did devise a rough method for calculating slave importing and exporting, and on the basis of his formulas it is possible to judge the proportion of slaves that were purchased.

If we use Mississippi during the period 1850-1860 as a model, Bancroft's formula is as follows:

(1) Multiply the slave population of Mississippi in 1850 by the rate of natural increase for the decade 1850-1860 (24.2 per cent throughout the slave South). The product is the projected slave population for 1860.

(2) Subtract the projected population from the actual population as recorded in the census for 1860. The difference is the unrefined estimate of imports. (If the projected population is larger than the actual, the difference is the unrefined estimate of exports.)

(3) To refine this estimate of imports add an estimated number of slaves exported from Mississippi during the decade, plus their natural increase. Bancroft estimates that Mississippi exported 8,000 during the decade; thus, 8,000 x 1.117 = 8,936. These figures are guesses, but they are not large enough to cause much difficulty.

(4) Divide the result by 1.117 to remove the natural increase of those imported.

(5) Bancroft estimates that seventy per cent of the total imported will yield the number of purchases among those imported during 1850-1860 and that fifty per cent will yield the number for the two decades previous.

This method has serious weaknesses. Firstly, the natural increase is assumed to have been the same for slaves in all states, although we may be sure that this assumption is not valid.[1] This objection need not trouble us since the rate of natural increase was probably lower, not higher, in the Lower South, and the resultant estimates would tend to be on the conservative side. Secondly, the estimated number of exports and the estimated number of slaves purchased rather than brought with migrating masters are complete conjecture. These guesses have, however, the weight of a careful scholar behind them, and both seem thoroughly reasonable from what we know of the period. Sydnor, to mention one leading student of the Old South, accepts Bancroft's estimates as plausible hypotheses for Mississippi.[2]

Moreover, since Bancroft's approach does not account for intrastate trading the calculations are weighted against any tendency to exaggerate the number of slaves purchased. In addition the method may err by underestimating the effects of the illicit African slave trade. Whereas Bancroft assumes that only

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[1]The rate of natural increase for the slave population during 1830-40 was 24.2 per cent; during 1840-50 it was 26.6 per cent.

[2]Slavery in Mississippi, p. 147.

about 5,000 slaves were brought into the United States during 1850-1860, Winifield H. Collins places the figure at about 70,000.[1] Neither proves his case, although Bancroft's arguments are the more convincing. While Bancroft is probably much closer to the truth, it is quite possible that he seriously underestimates the imports. If so, his formulas would tend to underestimate the number of slaves actually purchased by states like Mississippi. I have followed Bancroft in order to take the more conservative course and to offset any error that might be hidden in his estimates.

Bancroft's formulas can be used to judge the slave imports and exports of any state or county. For a more detailed treatment see Slave-Trading in the Old South.[2]

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[1]The Domestic Slave Trade of the Southern States (New York: Broadway Publishing Co., 1904), p. 67; cf., Du Bois, Suppression, pp. 178-83.

[2]Chapter XVIII.

APPENDIX II

THE DETERMINATION OF SAMPLE COUNTIES

The selection of sample counties poses a great many problems of soil science, topography, and statistics of production and population. Under the circumstances it seems safest and best to yield to the authority of the outstanding student of antebellum Southern agriculture, Lewis C. Gray, who worked on the relevant problems for more than twenty years.[1] Although Gray is not precise in the reasons for his selections and although he does not provide detailed discussions of all aspects of problems involved, a review of the economic and natural conditions of the South reveals nothing to cause me to question the wisdom of his delections.

For Mississippi Gray selects five counties as typical of the Cotton Belt: Holmes, Carroll, Yalabusha, De Soto, and Marshall. Since I have been able to work with but two, my choices are based on the only variable on which there was clear evidence--the size of slaveholdings. For the group as a whole 40.0 per cent of the total number of slaves were owned in groups of one to five. Marshall and De Soto came closest to this mode, and they have therefore been selected. The western part of De Soto is alluvial, but the rest of De Soto and Marshall belongs to miocene formations. Parts of Marshall were of "exceeding fertility and belong/ed_/ to the first class of lands in Mississippi."[2]

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[1]Gray, History of Agriculture, I, 534f; II, 918-21.

[2]Mississippi Geological Survey, Report, 1857 (Harper), cf., Report, 1860 (Hilgard), pp. 288ff.

The two counties contained land not quite up to the superb standards of the best alluvial counties but close to them. De Soto and Marshall thus represented the Cotton Belt more accurately than the best river counties might have done, while at the same time their soil was superior to that of most nonalluvial counties.

Gray uses the following counties for the Georgia Cotton Belt: Burke, Washington, Houston, Sumter, Dougherty, Stewart, Clay, and Thomas. Dougherty and Thomas have been selected according to the same procedure as above.

Gray works with four counties in the northern wheat-growing area of Virginia: Culpeper, Fauquier, Loudoun, and Prince William. An analysis of these counties shows that two had populations that were between twenty and thirty per cent slave, and that two had populations that were between forty and fifty per cent slave. Further study reveals that these two patterns of population were roughly typical of the whole area. Therefore, it was thought best to select one county in each of the two sub-groups. By the same procedure explained previously, Fauquier and Price William have been selected.

A similar approach leads to the selection of Charles City and Gloucester counties to represent the Virginia tidewater, and Amelia and Buckingham the Virginia tobacco area. Walker and Gordon counties were chosen to represent diversified areas of the Lower South. Strictly speaking, I should have chosen

Cobb County, Ga., rather than Walker, for its mode of slave-holding was one-tenth of one per cent closer to that of the whole cluster of counties used by Gray. But the difference is statistically insignificant, and since Walker was much smaller, I have chosen it for convenience.

APPENDIX III

THE PRICES OF VARIOUS COMMODITIES IN SEVERAL STATES

Reliable price data for Mississippi is not available, and prices readily obtainable for New Orleans, Mobile, Cincinnati, and elsewhere undoubtedly differed from those prevailing in Mississippi. Cotton prices--at least average prices and prices at New Orleans--may be found in several sources; for convenience the schedule in Sydnor's Slavery in Mississippi may be consulted.[1] For other commodities the first problem is to arrive at a schedule of weights and measures in order to account for differences from one state to another and to translate prices given in one weight (say, bushels) into a more convenient form (say, barrels). The report of the National Bureau of Standards[2] is helpful, but important additional information is in Berry's Western Prices and Anne Bezanson's study of the Philadelphia market.[2]

Prices for Mississippi have been determined, whenever possible, by applying the price schedules from The New Orleans Price-Current. New Orleans prices doubtless did not reflect accurately the Mississippi markets, but they are the best data available. Often, The New Orleans Price-Current did not have prices for certain commodities and had to be supplemented. Sometimes there

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[1]Sydnor, Slavery in Mississippi, pp. 183f.

[2]U. S. Department of Commerce, National Bureau of Standard, Circular C425, Legal Weights per Bushel for Various Commodities (Washington, 1940); Berry, Chapter VII; Anne Bezanson, Robert D. Gray, and Miriam Hussey, Wholesale Prices in Philadelphia, 1784-1861 (2 Vols.; Philadelphia: The University of Pennsylvania Press, 1937), II, xxi f.

is reason to believe that prices from other sources are more reliable.[1]

For Virginia the major source is A. G. Reterson's Historical Study of Prices Received by Producers of Farm Products in Virginia, 1801-1927.[2] Other sources must be consulted for commodities not covered by Peterson.[3] Georgia is more troublesome, for reliable data are scarce, and a price schedule must be constructed more or less impressionistically from sources for Mississippi and Virginia. In addition to those works cited previously, George Rogers Taylor's study of prices at Charleston,

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[1]Boyd, pp. 29-31; Berry, Table 56, pp. 595f; James L. Watkins, Production and Price of Cotton for One Hundred Years ("U. S. Department of Agriculture, Division of Statistics, Miscellaneous Series Bulletin," #9; Washington,1895), p. 13; Helper, p. 39; U. S. Bureau of the Census, "Report on the Average Retail Prices Of Necessaries of Life in the United States," Prepared by Joseph D. Weeks for the Tenth Census (1880), XX; U. S. Congress, Senate, 52nd Congress, 2nd Session, Report 1394, Wholesale Prices, Wages, and Transportation (Report by Mr. Aldrich from the Committee on Finance, 1893), II; Bezanson, II, passim; Arthur H. Cole, Wholesale Commodity Prices in the United States, 1700-1861(2 Vols.; Cambridge: Harvard University Press, 1938), Statistical Supplement (Vol. II); Roger F. Hale, Prices Paid for Maryland Farm Products, 1851-1927 ("University of Maryland Agricultural Experiment Station Bulletin," no. 321 of Vol. XLIV; College Park, Prince George County, Md., 1930-31), pp. 171ff; G. F. Warren and F. A. Pearson, "Wholesale Prices in the United States for 135 Years, 1797-1932," in Wholesale Prices for 213 Years, 1720 to 1932 ("Cornell University Agricultural Experiment Station Memoir," no. 142; Ithica: Cornell University Press, Nov., 1932); Henry Ellis White, "An Economic Study of Wholesale Prices at Cincinnati, 1844-1914," unpublished doctoral dissertation at Cornell University, 1935, copy in the Columbia University Business Library.

[2](Richmond, Va.; Virginia Agricultural Experiment Station and the Bureau of Agricultural Economics of the U. S. Department of Agriculture--Cooperating,1929), pp. 175ff, esp. Table 85a.

[3]See the references in footnote 1 to the studies by Hale, Weeks, Bezanson, Helper, and to the Aldrich Report.

South Carolina is useful since it provides some idea of the price differentials between a neighboring cotton state and the national averages.[1*]

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[1]"Wholesale Commodity Prices at Charleston, South Carolina, 1796-1861," Journal of Economic and Business History, IV (Aug., 1932) Supplement, pp. 848-68.

*The prices used in this study are as follows:

Commodity	Maryland	Virginia	Georgia	Mississippi
Cotton (lb.)			$44.90	$44.90
Tobacco (lb.)	$0.06	$0.071	.075	.075
Sugar (hhd)		65.00	67.00	60.00
Wheat (bu.)	1.22	1.34	1.113	1.13
Hemp (lb.)	.07	.06	.06	.06
Peas, beans (bu.)	1.54	1.35	1.35	1.35
Butter	.17	.17	.25	.20
Beeswax (lb.)	.30	.30	.30	.30
Honey (gal.)	.69	.685	.685	.685
Corn (bu.)	.74	.81	.90	.75
Cheese (lb.)	.10	.11	.10	.10
Seeds (bu.)	2.30	3.75	3.75	3.75
Hay (ton)	14.55	14.55	14.55	14.55
Molasses (gal.)	.50	.41	.41	.26
Oats (bu.)	.38	.41	.41	.50
Irish Pot.(Bu.)	.73	.73	.73	1.33
Sweet Pot. (bu.)	.73	.40	.40	.40
Whiskey (gal.)	.25	.25	.25	.25
Wine	2.00	2.00	2.00	2.00
Rye (bu.)	.71	.67	.83	.83
Barley (bu.)	.66	.66	.66	.66
Buckwheat (bu.)	.40	.40	.40	.40
Wool (lb.)	.24	.24	.24	.24
Rice (lb.)	.05	.05	.04	.0425
Flax (lb.)	.08	.08	.08	.08
Hops (lb.)	.14	.14	.14	.14

APPENDIX IV

THE MATERIAL FROM THE MANUSCRIPT CENSUS RETURNS

Schedule IV ("Agricultural Productions") of the manuscript census for 1860 has been distributed among several places. The schedule for Mississippi was consulted in the state archives at Jackson and the one for Virginia in the state archives at Richmond. The returns for Georgia are at Duke University Library in Durham, N.C.

The first ten names were copied from each page of the returns; each page contained about forty names. The final sizes of the samples are as follows: Marshall County, Miss., treated as a unit with De Soto County, 584 persons; Dougherty and Thomas Counties, Ga., 143; Gordon and Walker Counties, Ga., 452; Amelia and Buckingham Counties, Va., 258; Charles City and Gloucester Counties, Va., 147; and Fauquier and Prince William Counties, Va., 385. The total sample is 1,969 persons. Since the names appear on the schedule in no particular order, the random nature of the sample is assured.

To obtain the number of slaves held by each person, Schedule II ("Slave Populations") was consulted in the National Archives, Washington, D. C. Unfortunately, the names are not entered in the same order as in Schedule IV. This difficulty not only causes researchers discomfit; it presents serious technical problems as well. Sometimes a person could not be found on the slave list although evidence indicated that he was in fact a slaveowner. Errors were committed by census takers

with distressing frequency. For example, an estate might appear on one schedule under the name of the owner and on the other schedule under the name of the overseer. There were instances when the size of the estate indicated that the owner had to be a slaveowner although his name did not appear on the slave list. Yet he had to be considered a nonslaveholder to avoid prejudicing the results in favor of the hypotheses. At the same time the inclusion of these questionable cases means that the procedure is probably too conservative. In a few cases evidence (biographical sketch, personal papers, and so forth) shows that a person was a slaveowner although his name was not found on the slave list; he was then dropped from consideration.

The relationships established between size of slaveholding and specific items, such as the number of mules, have been obtained by the machine-processing facilities of the Bureau of Applied Social Research of Columbia University. Machine-processing does not insure against errors, but it should provide better protection than could be obtained otherwise.

For the more important items such as income, acreage, and cotton production I constructed medians, rather than rely on the less accurate means.

APPENDIX V

THE DETERMINATION OF GROSS INCOME

The gross agricultural income for the farmers and planters in the selected counties of Mississippi, Georgia, and Virginia has been determined as follows:

(1) Schedule IV ("Agricultural Productions") was consulted for the names of a large sample of landowners.[1] This schedule yields the agricultural production but not the number of slaves on the estate. The latter was obtained from Schedule II ("Slave Populations").

(2) A few items on the production schedule were expressed in dollars: animals slaughtered, orchard products, market gardens; more than twenty-five other items were expressed by volume of output. The next step was to determine a price for each commodity not expressed in dollars.[2]

(3) Each farmer or planter (there were almost 2,000) therefore had many products that had to be converted into dollars. Once the multiplications for each item and for each planter were done, the results were tabulated according to slaveholding groups of nonslaveholders, those with two slaves (one to four), seven slaves (five to nine), fifteen slaves (ten to twenty), twenty-five slaves (twenty-one to thirty), forty-five slaves (thirty-one to sixty), and eighty slaves (sixty-one or more).

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[1] See General Appendix IV.

[2] See General Appendix III.

The gross agricultural income for whole counties in Maryland, Georgia, and Virginia has been obtained according to the same procedure, except that the printed census reports were used to determine the volume of production.

APPENDIX VI

NECESSARY EXPENDITURES FOR GENERAL SUPPLIES IN THE COTTON BELT

As a rough index to the purchasing power of the farms and plantations of the Cotton Belt I have calculated the necessary expenditures for general supplies. These figures, together with those for the food purchases discussed in the Special Appendix following Chapter V ought to provide a rough indication of the weakness of the rural home market. The following data are for Marshall and De Soto counties, Mississippi; at the end of this Appendix is a table providing comparable data for two sample counties in Georgia.

The cost of preparing a bale of cotton for market was not less than one dollar and fifty cents, which may be translated to the nearest dollar as follows: plantations with eighty slaves, $323; forty-five slaves, $152; twenty-five slaves, $89; fifteen slaves, $61; seven slaves, $29; two slaves, $17; and no slaves, $9.[1]

According to De Bow's Review, fifteen dollars per year was needed to clothe a Negro on the plantations of Mississippi in 1850, and the slaves in the Virginia gold mines received

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[1] De Bow, Industrial Resources, I, 150. The median production of cotton, on which the above figures are based, were obtained from the manuscript census returns in the manner previously described.

similar clothing allowances in the 1840's.[1] Since the general price level rose by about ten per cent between 1849 and 1859,[2] we may safely assume that fifteen dollars per slave is adequate to account for those children who were clothed for less.

As a rule blankets were issued to slaves every other year and cost from on to three dollars each. The cheaper blankets tended to fall apart within a year, so two dollars was probably the general expense.[3] I have therefore assumed a cost of one dollar per slave per year. Since there is no way of calculating the yearly costs of farm equipment and machinery I have assumed that two dollars per slave would be sufficient. One dollar per slave may be added to cover miscellaneous supplies. Speculations on the depreciation of work animals ranged from ten to fifty per cent. I have assumed that one-half the horses and oxen were raised. Mules cost about $125 and other work animals probably averaged $100.[4]

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[1]Fletcher M. Green, "Gold Mining in Ante-Bellum Virginia," Virginia Magazine of History and Biography, XLV (Oct., 1937), 362; De Bow's Review, VIII (Jan., 1850), 18.

[2]Historical Statistics of the United States, p. 232. The shift in prices was reflected in the movement of prices paid by planters for slaves' shoes; see: Phillips, Plantation and Frontier, I, 135; Carolina Planter (1844-45), 111f; notes in the Journal of Powhattan Plantation, Tayloe MSS in the New York Public Library; The Plantation (March, 1860), 44f; E. G. Baker MSS, II, 50.

[3]Smedes, p. 73; The Southern Agriculturalist, VIII (April 1835), 99f; Boyd, p. 41; Rufus Reid Papers, I, 106, 113, 168, 191.

[4]For prices see Barbee, p. 83; Gray, History of Agriculture, I, 544; De Bow, Industrial Resources, I, 150; The Farmer and Planter, VI (March, 1855), 58; Leak MSS, VI, 491f; Southern Agriculturalist, II (May, 1829), 213.

Data obtained from plantation manuscripts and other primary sources roughly confirm the estimated total expenditures for supplies. According to the model presented in Table 9, Mississippi plantations ought to have spent about thirty dollars per slave. The figures presented below should be expected to be lower; planters rarely recorded their total expenditures, and certain items like that for work animals were never mentioned at all. The figures in parentheses are the amounts spent per slave; the years covered are 1850-1860 unless otherwise specified:

Mississippi: a plantation with forty-five slaves ($18); 100 ($21); 130 ($26).[1]

Louisiana: a plantation with 100 slaves in 1844 ($30); sixty ($12); twenty-five ($20); fifty ($23).[2]

Alabama: a plantation with 120 slaves ($10); 150 ($18); seventy-five ($15).[3]

Other: a plantation with twenty-five slaves ($21); 184 ($25); 200($19).[4]

In addition, The Farmer and Planter placed the cost of supplies for a fair sized plantation at more than twenty-five dollars per year.[5]

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[1]Leak MSS, V, 491f; James Sheppard Letters and Papers, passim; Haller Nutt Papers, passim.

[2]Liddell Papers; De Grummond, quoting The Planters' Banner, Sept. 25, 1852; E. G. Baker Papers, II, 50.

[3]De Bow's Review, VII (Nov., 1849), 436; Weymouth T. Jordan, Agricultural History, XIX (July, 1945), 152-62; Watson Account Book, 1849-61.

[4]Minis Account Book, IV, 98, 104ff in the University of North Carolina; Bruce Accounts; Vigilance Accounts, 1829-30.

[5]The Farmer and Planter, VI (March, 1855), 58.

TABLE 9

THE COST OF GENERAL PLANTATION SUPPLIES IN MISSISSIPPI 1860[a]

Number of Slaves[b]	Cotton Bales[c]	Clothing[d]	Blankets[d]	Implements[d]	Work Animals[d]	Misc.[d]	Total
0	$9	0	0	$2	$46	0	$57
2	17	$30	$2	4	67	$2	122
7	29	105	7	14	97	7	259
15	61	225	15	30	146	15	492
25	89	345	25	50	204	25	738
45	152	675	45	90	321	45	1328
80	323	1200	80	160	607	80	2450

[a]See Table 3, n.a.

[b]See Table 3, n.b.

[c]See p. 206, n. 1.

[d]See pp. 206-208.

TABLE 10

THE COST OF GENERAL PLANTATION SUPPLIES IN GEORGIA, 1860[a]

No. of Slaves	Cotton Bales	Clothing	Blankets	Implements	Work Anim.	Misc.	Total
0	3	0	0	2	38	0	43
2	5	30	2	4	46	2	91
7	15	105	7	14	46	7	194
15	23	225	15	30	129	15	437
25	57	375	25	50	167	25	699
45	146	675	45	90	300	45	1301
80	282	1200	80	160	446	80	2248

[a]See Tables 3 and 9 for notes.

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