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TOBACCO CULTIVATION IN SEVENTEENTH CENTURY

JAMESTOWN AND VIRGINIA (with particular
reference to the years before 1650). 333/130572

By: Frank Barnes, Historian, Region One.

February 1955

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TOBACCO CULTIVATION IN
SEVENTEENTH CENTURY JAMESTOWN AND VIRGINIA

(with particular reference to the years before 1650)

The earliest full account of tobacco cultivation in Virginia is contained in Thomas Glover, An Account of Virginia, Its Scituation, Temperature, Productions, Inhabitants, and Their Manner of Planting Tobacco, Etc.,¹ written in 1671. A Maryland account of 1666 (from which it might be hoped valuable parallels could be drawn)² adds very little more than picturesque language. According to Glover:

"... In the twelve-daies /Twelfth Night, January/ they begin to sow their Seed in Beds of fine Mould, and when the Plants be grown to the Breadth of a Shilling, they are fit to replant into the Hills; for in their Plantations they make small Hills about 4 Foot distant from each other, somewhat after the Manner of our Hon-yards. These Hills being prepared against the Plants be grown to the forementioned Bigness (which is about the Beginning of May) they then in moist Weather draw the Plants out of their Beds, and replant them in the Hills, which afterward they keep with diligent Weedings. When the Plant hath put out so many Leaves as the Ground

¹ Reprint, Oxford, 1904 (from Philosophical Transactions of the Royal Society, June 20, 1676), pp. 28-30; see L. C. Gray, History of Agriculture in the Southern United States to 1860 (2 vols., Washington D. C., 1933), I, 215.

² In George Alsop, A Character of the Province of Maryland, reproduced in C. C. Hall, ed., Narratives of Early Maryland, 1633-1684 (New York, 1910), p. 363. For abstract, see appendix B.

will nourish to a Substance and Largeness that will render them Merchantable, then they take off the Top of the Plant: If the Ground be very rich they let a Plant put out 12 or 16 Leaves before they top it; if mean, then not above 9 or 10, and so according to the Strength of their Soil. The Top being Taken off, the Plant grows no higher, but afterwards it will put out Suckers between their Leaves, which they pluck away once a Week, till the Plant comes to Perfection, which it doth in August. Then in dry Weather, when there is a little Breeze of Wind, they cut down what is ripe, letting it lie about 4 Hours on the Ground, till such time as the Leaves, that stood strutting out, fall down to the Stalk: Then they carry it on their Shoulders into their Tobacco Houses, where other Servants taking of it drive into the Stalk of each Plant a Peg, and as fast as they are pegg'd, they hang them up by the Pegs on Tobacco-Sticks, so nigh each other, that they just touch, much after the Manner they hang Herrings in Yarmouth: Thus they let them hang 5 or 6 Weeks, till such time as the Stem in the Middle of the Leaf will snap in the Bending of it: Then when the Air hath so moistened the Leaf, as that it may be handled without breaking, they strike it down, strip it off the Stalk, bind it up in Bundles, and pack it into Hogsheads for Use.

Sometimes they are forced to plant their hills twice or thrice over, by reason of an Earth-worm which eats the root, and when the plant is well grown they suffer damage by a Worm that devours the leaf, called a Horn-worm (an Aruca or Caterpillar) which is bred upon the leaf; if these worms be not carefully taken off they will spoil the whole Crop.

On the basis of inferential evidence, there is good reason for believing that, from the very earliest years in Virginia, the tobacco cultivation process was very much the same as the above; and, the techniques differed only in part.³ Modified according to interpretive feasibility,

³ At the same time, the remarks of John Clayton (in "A Letter...to the Royal Society, May 12, 1688," in Peter Force, collector, Tracts and Other Papers Relating...The Colonies in North America... 4 vols., Washington, D. C., 1836-46, III) should be kept in mind and be applied to all phases of the tobacco cultivation process: "The Planters

the Glover account might well be the basis for any "typical" 17th century tobacco development on Jamestown Island today.

Sowing and Growing

Discounting the five or six earliest years of experimentation with Nicotiana tabacum⁴ --when Argall's testimony as to tobacco growing in "the market place, and streets, and all other spare places" at Jamestown⁵ seems an indication of rather haphazard cultivation techniques --there is evidence that a settled pattern of first, sowing the tiny tobacco seeds broadcast in seed-beds and then, transplanting the young plants into rows of prepared hillocks, had very

differ about the time of planting, or pitching their Crops: Some are for pitching their crops very early, others late, without any Distinction of the nature of the Soils; and 'tis from the different Effects that they find, in that, sometimes early, sometimes the late planting succeeds...." Subject to the availability of records, the general practice of the average good (and law-abiding) planter is all that, by and large, can be described in the limits of any such report as this. Then as now, there was bound to be individual variation in technique -- variation not necessarily recorded for posterity.

- ⁴ Following John Rolfe's importation of this superior variety, probably in 1611, from Trinidad (Jerome E. Brooks, ed., Tobacco, Its History Illustrated by the Books, Manuscripts, and Engravings in the Library of George Arents, Jr., 75 vols., New York, 1937-52/, I, 525-6. Hereafter cited as Arents, Tobacco).
- ⁵ May 1617, as cited in Edward Arber, ed., Travels and Works of Captain John Smith (2 vols., Edinburgh, 1910), II, 535. Hereafter cited as Works.

early developed.⁶ The native Indian methods (which apparently involved no transplanting)⁷ were quite soon found as "wanting" as the native Nicotiana rustica which Strachey described⁸ in 1612 as "poore and weake, and of a byting taste" In a letter to Sir Edwin Sandys of January 16, 1619/20,⁹ John Pory distinguished between sowing and planting as stages in the tobacco cultivation process. A Virginia colony law prescribing distance between tobacco plants (a law most easily observed by transplanting operations) came in 1628.¹⁰

⁶ Rather than representing the continuation of agricultural methods used in England for vegetables (P. A. Bruce, Economic History of Virginia in the Seventeenth Century [2 vols., New York, 1907], I, 163), the transplanting system may actually have been based on knowledge of tobacco cultivation methods already in use in Europe (perhaps even in England) and in the West Indies, modified according to Virginia conditions. Since 1567, the detailed cultivation information in Jean Liebault, L'Agriculture et Maison Rustique — which embraced such a technique — had been available in Europe (an English translation was available in 1600). Liebault had secured much of his information from Nicot, the French Ambassador to Portugal, who had introduced tobacco from there into France. Much tobacco had probably been grown in Europe prior to 1600 (see Sarah A. Dickson, Panacea, or Precious Bane [New York, 1954], Chapter IV). I am indebted to Miss Sarah A. Dickson, Curator, Ardens Collection, New York Public Library, for this hypothesis. Because of the cultivation parallels to early colonial practice, a translation of part of Liebault's account is reproduced as Appendix A to this report.

⁷ But rather merely the inserting of seed in the pulverized soil of garden plots at more or less regular intervals (Bruce, I, 162, and Plate XX in Thomas Harriot, Narrative of the First English Plantation of Virginia [Frankfort, 1590; reprint, London, 1893]. The latter shows the Indian town of Secota, with plot of tobacco.

⁸ R. H. Major, ed., The Historie of Travaile into Virginia Britannia by William Strachey (London, 1849), p. 121.

⁹ Susan M. Kingsbury, ed., The Records of the Virginia Company of London (4 vols., Washington, D. C., 1906-35), III, 257. Hereafter cited as Va. Co. Recs.

¹⁰ This law prescribed that plants were to be set 4½ feet apart (W. W. Menning, The Statutes at Large: Being a Collection of All the Laws of Virginia [13 vols., Richmond, 1809-23], I, 130.

Seed beds probably varied in size according to the final yield desired (or allowed by law).¹¹ John Josselyn observed beds in New England in the latter part of the century that were "about three yards long, or more according to the ground they intend to plant, and a yard and a half over."¹² Similarly, no doubt in Virginia. The beds were probably kept "active" till the desired number of transplantings was assured (or, later, till the date set by law prohibiting further planting).¹³ No doubt the observation made in 1732 that tobacco "sown in beds . . . [and] carefully scattered needs no raking but will do

¹¹ In 1621, the number of plants harvestable was limited to 1000 per head of a family or per laborer; in October 1629, production was limited to 3000 plants per tithable; the following March, the limit was raised to 2000 plants per capita — and so forth (for convenient summary, see Gray, I, 261). The intent, first, was to secure a food supply and a varied colonial economy; very soon, to uphold the sales price of tobacco.

¹² John Josselyn, An Account of Two Voyages to New England [London, 1673], p. 75.

¹³ In the March 1657/58 session of the House of Burgesses, it was ordered that no tobacco was to be planted after July 10, under penalty of a fine of 10,000 pounds of tobacco (H. R. McIlwaine, ed., Journals of the House of Burgess of Virginia, 1619-1658/9 [Richmond, 1905], p. 107). In a petition to Lt. Gov. Nicholson, in 1691, one Daniel Wade asked "to be relieved from the fine imposed for infraction of the tobacco law relative to numbers of tobacco plants set" and pointed out, as evidence of his law-abidingness that on the last day of June he had cut all tobacco plants he then had growing in (seed) beds. Temptation would be removed! In addition to this inferential highlight on seed beds, Wade is also responsible for the observation (based on 35 years experience) that it was "constant practise of all planters while tobacco was small, in weeding, where a plant was wanting, to supply the place by taking one out of a hill that had two . . . (Virginia Magazine of History and Biography, VI, 397 — hereafter cited as VMHB).

even till April"¹⁴ is applicable to an earlier period. Josselyn's observation that the "rich mould sifted" (of the seed beds) was trodden down hard, then, after sowing seeds thereon "as thick as may be," and covering with fine earth,^{14a} trodden "down again as hard as possible they can . . .", is not necessarily applicable, however, to Virginia soil conditions. The earliest growers probably did not "try the goodness of their seed" beforehand by "casting a little thereof" into the fire ("if it be good it will sparkle after the manner of gunpowder"), as John Clayton observed to be the practice in 1688; nor, probably, did they mix the seed with ashes (to assure a more even distribution). It seems quite likely, however, that it had early been found worthwhile to cover the seed beds for protection from the frosts of January and February, though the use of "a few oak leaves, or the like" (instead of straw, which apparently was soon found to harbor a destructive small fly)¹⁵ may not have been settled upon for some time. Probably in many cases the seed beds were located so as to be sheltered from the wind by stands of trees¹⁶ (in place of the walls mentioned in the early

¹⁴ By Scotsman William Hugh Grove, travelling in Virginia (Manuscript "Diary," p. 63, Alderman Library).

^{14a} Compare the observation of the English pamphleteer, C. T., ". . . when sowne, it must be covered but thinly with earth . . ." in An Advice How to Plant Tobacco in England (London, 1615).

¹⁵ Clayton, op. cit., n. 18

¹⁶ Bruce (I, 396) cites this as customary with "much" corn and tobacco--though seed beds are not specifically singled out. See also Smith, Works, II, 953 ("Betwixt those trees they plant their corne, whose great bodies doe much defend it from extreme gusts, and heat of the Sunne . . .").

West Indian and European accounts). Perhaps (as in the Indies)^{16a} a southern exposure was chosen.

Under typical conditions (not necessarily on Jamestown Island), cultivation methods were primitive. Though the early conviction that manuring made for tobacco rank in flavor¹⁷ was no incentive to intensive cultivation of the soil, the plentifulness of virgin land (particularly, the much-desired "black mould" which came from cleared pine woods land)¹⁸ and the soil-exhaustive propensities of the tobacco plant (coupled with legislative enactments limiting the number of plants to be tended, and leaves gathered) made extensive cultivation almost inevitable from the start. At the same time, the practice of "cow-penning" for enriching the soil -- especially with reference to "hired" land -- had developed by 1688; and marsh soil had been tried as a fertilizer -- though with indifferent results.^{18a} If tobacco in any quantity was growing on Jamestown Island at this date (and one suspects

^{16a} See the Liebault account, *e. g.*, Appendix A

¹⁷ Bruce, I, 322

¹⁸ See Beauchamp Plantagenet, "A description of the Province of New Albion" in Force, *Tracts*, II, and *American Husbandry* (2 vols., London, 1775), I, 222 ff. Virginians, by the end of the century already noted for their "sweet-scented" tobacco (Maryland, by contrast, was noted for its strong and heavy "Oronoko"), cultivated the cleared bottom timber land that was relatively high and dry. Drainage of the lowest (or marsh and swamp) land for tobacco growing was strongly opposed in the belief that such land produced "non-burning" tobacco (Cp. Clayton, *op. cit.*, particularly with reference to the possibilities of draining the Sherwood swamp on Jamestown Island).

^{18a} Clayton, *op. cit.*; Gray, I, 217

the opposite to be true), some such intensive cultivation no doubt was the rule. Such cultivation was certainly not typical of Virginia as a whole, however.

With the use of new lands a constant practice in the colony, the hoe became the standard tobacco tool of the seventeenth century. New land, even as late as 1696,¹⁹ was not cleared of logs and stumps (left standing two or three feet from the ground). The plough,^{19a} as a result, was virtually useless. With the hoe, inevitably, the land between the logs and stumps was made ready and kept clear. Of this tool, there were apparently two principal (tobacco) varieties at this time: the narrow (or, hilling) hoe, and the broad (or, weeding) hoe.²⁰ With

¹⁹ W. Noel Sainsbury, ed., Calendar of State Papers, Colonial Series, American and West Indies, 1696-97 (London, 1904), p. 643; Avery Craven, Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860 (Urbana, 1925), p. 34.

^{19a} There was at least one plough in Virginia as early as 1618. John Smith reported "some thirtie or fortie acres wee had sowne with one Plough" (Works, II, 538). The use of the plough under more intensive (but untypical) tobacco cultivation conditions (probably quite early on Jamestown Island--which was apparently "cleared" by the late 'thirties) is not to be ruled out. And, it was certainly used in other agricultural operations. One hundred and fifty ploughs were reported at work in the colony in 1649 (Bruce I, 461).

²⁰ "Broad" and "narrow" hoes are the types most frequently encountered in the 17th-century records. Both are clearly associated by Tatham (William Tatham, An Historical and Practical Essay on the Culture and Commerce of Tobacco /London, 1800/ pp. 12-13, with tobacco cultivation; by Tatham's time, however, a "sprouting" hoe (defined as a smaller species of mattock) is in use -- in initial clearing operations. No such hoe was cited in any of the 17th-century records surveyed, nor is there mention of such in Bruce, who speaks earliest (I, 201) of only the "broad" hoe. Bruce does, however, cite (I, 463) a "grubbing" hoe in an end-of-century reference; his citation is confirmed, additionally, by a 1625 inventory in the General Court records (H. R. McIlwaine, ed., Minutes of the Council and General Court of Colonial Virginia, 1622-1632, 1670-1676 /Richmond, 1924/, p. 198 -- hereafter cited as McIlwaine, Mins. Gen. Court), and a 1667 reference in the William and

the first, the laborer probably soon learned to stand (as described in 1800) with foot advanced and throw dirt from all sides around his leg to form the hillock, then to withdraw his foot and flatten the top. Tatham cites dimensions for the hilling hoe of six to eight inches width, and ten or twelve inches long in the blade; for the weeding hoe, a blade 10 to 12 inches wide, but "of thinner substance than the hilling hoe, [and] not near so deep in the blade." By means of a wedge, the latter might be set at any angle to the handle.²¹ Several 17th century examples of the first type of hoe (with comparable dimensions) are to be found in the Jamestown archeological collection; only one example of

Mary Quarterly (1st Ser., IX, 237-8). None of the citations, of course, indicate a connection with tobacco. As a result, the "grubbing hoe" may be the same as the "sprouting hoe" (which Gray seems to think — see Gray, I, 217), or it may be something entirely different. See below.

- ²¹ Tatham, pp. 13-14. Though the hilling operation described may be applicable to an earlier day, the "planting" operation described by Tatham (p. 16) seems a little too sophisticated (and demanding of manpower) to be typical of the seventeenth century. In this method, one person "bears, suspended on one arm, a large basket full of the plants just drawn" from the seed-beds. He "proceeds thus by rows from hill to hill; and upon each hill he takes care to drop one of his plants. Those who follow make a hole in the centre of each hill with their fingers, and having adjusted the tobacco plant in its natural position, they knead the earth around the roots with their hands, until it is of a sufficient consistency to sustain the plant against wind and weather."

21a
the second type, however.

It was probably not long (because of roaming farm animals) before tobacco patches were enclosed "with a slight fence of cleft Rails," as Hugh Jones observed to be the practice in 1724. Though one might expect this only under more settled conditions (certainly at Jamestown), the Jones reference is to "unstumped" land, cultivated (even then) in the customary manner. Bruce finds references to "rails" in the county records as early as 1621. He further points out that the worm fence, in the construction of which rails were used, was the invention of the settlers of a new country where wood was extremely abundant, and sawmills few in number. For this type fence, no posts were to be fashioned, no holes to be dug, no nails to be driven in. A general law regarding fencing ("Every man shall enclose his ground with sufficient fences . . . upon theire own peril") was passed as early as 1631; in 1646 a legal fence was four and a half feet

21a The latter (Museum Catalog No. J-530), in a rather battered state, has projected dimensions of 10 inches (length, including handle holder) and 7½ inches (breadth). Relative narrowness of blade may have meant less durability for the "narrow hoe"; this may account for the dearth of examples in the Jamestown collection. Fragments of hoes that may have been "narrow hoes" exist, but to "project" the full dimensions thereof seems impossible. In examining all such "artifacts" allowance has to be made for the "wear and tear" factor, as well as the ravages of time. Also, individual variance according to blacksmith. There are other 17th-century hoes in the Jamestown collections which are smaller than the tobacco hoes cited — thus Museum No. J-81, which is only three inches wide, and four inches long. These may be examples of the small "garden hoe," to which Bruce found early reference (I, 463). These were probably not used in tobacco cultivation.

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in height and closed to the bottom.

Once transplanted, the tobacco plant — as Glover suggests — required sustained care. John Smith's contemptuous reference to "our men rooting in the ground about Tobacco like swine" implies this, perhaps, as much as it does a hoeing operation.²³ William Bullock noted in 1649 that ". . . Tobacco, being once in the ground, is never out of hand till in the Hogshead; and which is the misery of it, the Moneths of June, July, and August being the very height of their summer, the poor servant goes daily through the rows of Tobacco, stooping to worne it, and being overheated he is struck with a Calenture or Feaver, and so perisheth."²⁴ Perhaps the pruning cited by Glover was not as thoroughly done in the earliest years. The suppositions that the English pamphleteer "C. T." directed against "Bermudas" tobacco in 1615²⁵ could doubtless have very well been applied to Virginia tobacco.

²² Bruce, I, 313-316; Hening, I, 176, 332; Hugh Jones, The Present State of Virginia (London, 1724), pp. 39-40.

²³ Works, II, 563

²⁴ William Bullock, Virginia Impartially Examined . . . (London, 1649), p. 11.

²⁵ "The tobacco which comes from the Bermudas is cast away either by neglecting to prune it, or else because they nourish over many leaves on one stalke, which they do either out of ignorance, or for that they coul't to have the greater quantity, or otherwise (C. T., An Advice How to Plant Tobacco in England /London, 1615/, p. 6)." Ralph Hamor wrote early of Virginia and its tobacco, however: "No country under the Sunne, may, or doth afford more pleasant, sweet, and strong Tobacco, than I have tasted there . . . which, howsoever being then the first year of our trial thereof, we had not the knowledge to cure and make up (A True Discourse of the Present Estate of Virginia . . . /London, 1615/, p. 34).

But no doubt the methods²⁶ that had become standard by 1671 had not been very long in coming. Competition with "Varinas" (Spanish West Indian) tobacco was strong, and the production of "merchantable" tobacco²⁷ early became an economic necessity to the hard-pressed Virginians.

Harvesting and Curing

Exactly how the tobacco was harvested in the earliest years has not been ascertained. The "small scyth" or sickle -- of which several seventeenth-century examples exist in the Jamestown archeological collection -- is a possibility, though the blade seems too narrow, too fragile, for the tough, fibrous tobacco stalk. In the

²⁶ With regard to the "topping" operation, one fact of interest is worth reporting. Performed by pressing the bud between thumb and forefinger, thumbnail serving as cutting instrument, it is said that in the 17th century planters could be detected by means of the abnormal thickness and discoloration of their thumbnails (A. P. Middleton, Tobacco Coast /Newport News, 1953/, p. 99.

²⁷ Into the "ins and outs" of the various inspection systems that were attempted as early as 1619 (when "tobacco tasters" were appointed), in an effort to secure a quality product (as well as to enforce, for other reasons, the laws cited elsewhere), and to avoid the marketing of stalks, "succourings," and other "deceitful tobacco," this cultivation study does not attempt to go in any detail. Under "quality" legislation, in addition to the laws cited, also come laws regulating the time of striking down the tobacco in the barns, and the bringing it to market. A really effective system (coupled with enforced central government warehouses) was not set up till the early part of the 18th century (see Gray, I, 224-7). And shipments, in the main, continued to be from the individual planter's wharf.

course of time, a special "tobacco knife" seems to have been developed.²⁸ If this resembled the implement shown in Fig. 2, Appendix (compare, also, Fig. 3), it was a "long scyth"-like affair^{28a} — with a relatively short, thick blade. The "brush hook" on exhibit in the Jamestown museum is perhaps a likely tool. This is a sturdy hooked blade about eleven inches long, once attached apparently to a straight handle of unknown length.

Probably (as now) the tobacco plants were cut about one foot from the ground.²⁹ It seems likely that the practice described by Glover of carrying the tobacco plants into the barn on the shoulders (or some such "free" equivalent) was observed from the start; the use of a portable field rack or stand did not come till much later.

²⁸ Bruce introduces the "tobacco knife" into his chapter on "Agricultural Development, 1685-1700," claiming (I, 440, n.) numerous county court references thereto (though failing to cite one specifically). The only references found in this survey were in estate inventories of 1679 and 1688 (Henrico County, Deeds and Wills, 1677-92, p. 106 and same, Deeds, Wills, Etc., 1688-97, p. 116). Of course, several other types of knives are come upon in the records. Tatham (p. 24) speaks of a "strong sharp knife" used in harvesting tobacco — in 1800.

^{28a} Compare Plate 25b in Dorothy Hartley and Margaret Elliot, Life and Work of the People of England (6 vols., London, 1926-31), V. The "long scythe" shown seems to have a thinner, less sturdy blade than that of the knife shown in Fig. 2, Appendix; the handle-length seems about the same, however.

²⁹ William Hugh Grove, op. cit., reported (in 1732) the plants "cut about a foot from the ground in August"; in the West Indies around mid-century, according to Charles de Rochefort (Histoire Naturelle et Morale des Iles Antilles de L'Amerique / Rotterdam, 1658/, abstract translated in Arents, Tobacco, II, 331), the plants were "cut about an inch above ground."

In at least one contemporaneous foreign account,³⁰ the use of a basket for gathering purposes is noted; such a possibility (at least as an individual variant) should not be ruled out with respect to seventeenth century Virginia.

The number of leaves "gatherable" from an individual plant at any given time varied according to law and to practice. Both the law and the planter (in most cases) were interested in quality; the law also sought (on occasion) a more varied colonial economy and the maintenance of price levels; the planter (on occasion), the circumvention of the law -- out of economic necessity. By the time Thomas Glover wrote, a freely allowed "rule of reason" apparently prevailed: the number of leaves tended and gathered varied according to soil conditions. In 1621, it was ordered that from each of the 1,000 tobacco plants allowed each person, only nine leaves were to be harvested; seven years later, the law allowed twelve leaves per plant. Meanwhile, the first law had obviously been evaded, for the twelve leaves were now allowed "instead of 25 or 30 as heretofore." In 1632, the allowable number of leaves was again nine, but writes Jerome Brooks "like many of the similar laws of the period, this law was largely

³⁰ C. T., op. cit., p. 8. See also, Prints 6 and 7, Appendix. In a German print of 1702 (see Print 2), the use of a bag for tobacco gathering is depicted. Tatham (1800) speaks of gathering by "turns" (signifying such a quantity "as each person respectively can carry upon his shoulder or his arm"), prior to depositing the plants on field racks (p. 25).

ignored or circumvented."³¹ The tending and harvesting of "second growth" tobacco was forbidden in 1631; the harvesting of "ground leaves" (leaves growing next the ground), long before frowned upon, in 1657.³²

The Curing of tobacco was exclusively an "airing" process in the seventeenth century. Though Philip Bruce finds one dubious late-century reference³³ to the use of fire, such a curing technique was, typically, an eighteenth century development. For the proper "airing" of the harvested tobacco plants, there may have been separate "houses" as early as 1617. Certainly, among the buildings burnt down by the Indians in the massacre of 1622 was a house of this kind at Mr. Harrison's.³⁴ At the same time, the lofts of many private houses (particularly in the more isolated sections) may have served for airing well into the century. Thus, among several examples that might be

³¹ Arents, Tobacco, I, 97. For convenient summary, see N. F. Cabell, Early History of Agriculture in Virginia (Washington, D. C., 1915), pp. 18-19.

³² Henning, I, 164, 487

³³ Bruce, I, 441, n. The native Indians had used fire in the curing process (see below).

³⁴ Though the latter reference is clear-cut (Smith, Works, p. 576), the language used in a memorandum by Governor Argall in 1617/18 seems very suggestive. With reference to "ye most convenient times and Seasons of ye year for ye Magazine Ship to Set forth . . . towards Virginia," Argall noted "To come out in June & be here in Sept a temperate time then is ye harvest of Corn and Tobacco and one man may tend and keep as much as two can house (*italics ours*) and Cure. . . ." (Va. Co. Rcds., III, 78).

cited, there is a reference in the Northampton County (Eastern Shore) records in 1641 to one "John Browne being upon the top of the Gise [joists] of the [deponent's] house hanging up tobacco. . . ."35

As to the exact appearance of an early tobacco house, one can advance only reasonable conjecture. Certainly, it would not seem to be the log structure so adequately depicted in Tatham's work of 1800 (Figure 12), though Tatham's description of the interior arrangement ("they are so contrived as to admit poles in the nature of a scaffold through every part of them")36 may well be applicable. Certainly, it would seem (typically) to have been a clapboarded structure, in some (early) cases with a thatched roof. Robert Beverley, writing in 1705, described Virginia tobacco houses as "all built of wood, as open and airy as is consistent with keeping out the Rain. . .": further, that ". . . they [the Virginians] cover their Tobacco-houses with thin Clapboard."37 In dimensions, tobacco houses varied from 30 by 16, or 30 by 20 feet, in length and breadth respectively, to 40, 50, even 60 feet in length, with corresponding breadth. Bruce declares the barns of this time to have been better built than those of his day (1900), being both cased (framed), and weatherboarded (clapboarded), the boards

35 Deposition, Henry Peddenden, Sept. 13, 1641, in Northampton County Orders, Deeds, Wills, etc., No. 2, 1640-45, p. 99.

36 Tatham, p. 33

37 Louis B. Wright, ed., The History and Present State of Virginia (Chapel Hill, 1947), p. 290. For a later West Indies equivalent (perhaps suggestive), see Print 5, Appendix. English barns of this period "almost invariably had timber frames and clapboarding" (A. N. B. Garvan, Architecture and Town Planning in Colonial Connecticut [New Haven, 1951], pp. 111-12.

put on in a series of equal lengths -- in general, six in number.³⁸

One court reference to a post (possibly free-standing inside) has been found; one to a barn "thatched upon wall plates" -- the latter seemingly indicating a frame structure to which clapboards might be affixed; there are several references to doors, and boards.³⁹ A tantalizing General Court reference of 1627 indicates, perhaps, that the door of at least one early tobacco house might have been on the long side.

Deductions from the same reference⁴⁰ as to whether the outside "boards" mentioned ran longitudinally or vertically can only be deductions, with limited knowledge of early colonial housing pointing, perhaps, to a longitudinal arrangement. At the same time, the fact that three boards had to be removed to gain entrance seems to indicate the use of boards

³⁸ Bruce, I, 440-41; Northampton records, op. cit.

³⁹ Charles City County records, 1655-66, cited in WMB, XLIII, 146; Northampton records, op. cit., 13, 373.

⁴⁰ The references have to do with one William Mills stealing some tobacco from Edward Grindon's tobacco house. ". . . about St. Johns [Dec. 27] or St. Stephens day [Dec. 26]. . . a little before Sun rising he this examine pulled downe three boards being on the side of one of ye Tobacco houses and nailed at one end . . . (McIlwaine, Min. Gen. Court, p. 159); ". . . in the night on the 14th of January . . . this examine . . . saw one William Mills comeing out at an hole in the wall of ye store some boards being down at one end . . . (ibid., p. 162). If the boards pulled down on or about December 26 were the same pulled down on January 14 (as seems likely), then entry was made on an end of the building. If not, the first reference might perhaps have reference to vertical boards nailed at their upper ends only, so as to permit lifting to allow the circulation of air (in the manner practiced in some localities today). There is no mention of a door in the "end" of January 14; "hole in the wall" (in that wall of narrowest dimension) would, then, seem to indicate a wall unbroken by a door-opening. The door would, then, have been on one of the long sides (or on the other end!). The door (or, opening) shown in the typical later tobacco house of Figure 12, Appendix, is on the long side. Cp. Garvan, op. cit., p. 112, 93-94 (long-side door, horizontal boards, English barns).

perhaps eight to ten inches wide, placed close together (if not overlapped). If the boards were much wider, or were somewhat separated, it seemingly would not have been necessary to remove as many as three.

The practice of pegging tobacco plants (4 to 5 inches apart, points down)⁴¹ on thin sticks arranged in tiers (see Fig.12) in the tobacco houses may have become general quite early in the century.

While the Northampton court record cited above does not indicate the precise manner in which John Browne was hanging tobacco, another deposition filed in the same court just two years later (1643) speaks of one Grace Vaughn going "upp into her loft to strick [sic] two or three sticks of tobacco"⁴² In 1663, in Isle of Wight County, Daniel Miles, employed to build a church, was requested "to fetch some Slabbs and Tobacco Sticks" in connection with the operation.⁴³

An earlier practice of hanging tobacco leaves or whole plants

⁴¹ Only later did the practice evolve of resting the plant on the stick by the stem of the lowest leaf, or by a split made in the stalk (Gray, I, 217). No exact reference to size of pegs has been found; as to their manufacture, Bruce speculates that this was done at odd times and cites one Henrico County record of 1638, in which reference is made to a worker being occupied in their making till midnight one night in October, as provision against the cutting of the tobacco (Bruce, I, 440). Tatham (p. 26), writing in 1800, gives dimensions for tobacco sticks of four feet length, 1½ inches in diameter.

⁴² Northampton records, op. cit., p. 273.

⁴³ Cited in George C. Mason, "The Colonial Churches of Isle of Wight and Southampton Counties. Va.," in William and Mary Quarterly, 2nd XIII, 51.

on stout lines^{43a} -- perhaps, at the very beginning, in the open air⁴⁴
-- may have continued for some time after its introduction in 1617-18.
Prior to this time, tobacco had been sweated in heaps, covered with
hay -- a method soon found to be quite unsatisfactory (the cattle went
hungry too!).⁴⁵ In the spring of 1621, George Thorpe wrote with great
urgency to John Ferrar, one of the Company in London, regarding "the
want of lynes to sweat our tobacco on . . . because the Croke of this
year will as it were utterly perish without that supply."⁴⁶ The last

^{43a} According to Johan Neander, Tabacologia (Leyden, 1622), p. 29
(translation by Gilles D'Everard, Vanacea: or The Universal
Medicine . . . [London, 1659], p. 23), "packthread" was used
(at least in the West Indies). A quantity of packthread was
among the items purchased in London in July 1619 for shipment
to Virginia aboard the "Margaret" (Va. Co. Recs., III, 183, 186.)

⁴⁴ There are no references to barns or other cover in the early
citations with respect to "lynnes"; however, this is not neces-
sarily conclusive -- especially since line-curing references are
found after tobacco houses are known to be in existence. William
E. Dodd, in an inadequately-documented reference in The Old South
(New York, 1937), pp. 47-8, says the strings were stretched under
wide sheds -- but no confirmation for this has been found. If
the Virginia colonists first employed open-air curing (perhaps
from observation of native Indian practice -- cp. William Strachey,
The Historie of Travaile into Virginia Britannia [reprint, London,
1849], p. 122 -- which, however, also involved fire), either ex-
perience or information as to the more sophisticated West Indian
or European methods soon converted them to the use of some sort
of cover.

⁴⁵ Va. Co. Recs., III, 92, 93. A Mr. Lambert was responsible for the
introduction of the line-curing method into the Virginia colony.

⁴⁶ ibid., 448

positive reference to the use of lines comes in 1624⁴⁷ (when barns were well in existence); the practice may well have continued longer — it continued elsewhere as late as 1675.⁴⁸ As to exactly how the tobacco was hung on the lines, there is no direct Virginia evidence. Conceivably, the line could have been passed (with a needle) "through the greater nerve of the individual leaves, that is, on the back-side," in the (West Indian) manner described in Johan Neander's Tabacologia (1622).⁴⁹ Conceivably, too, the stalk of the whole plant could have been bent over the line, somewhat according to the manner depicted in the print (Figure 4) reproduced from the Neander work. If

⁴⁷ This reference ("did hange the Tobacco so thicke upon the lynes yt the lynes brake and The Tobacco fell to the ground . . ."), in minutes of the November 1624 session of the General Court (McIlwaine, Mins. Gen. Court, p. 27), furnishes either an indication that the flooring of the earliest tobacco houses was earthen (which seems rather likely) or — that line-curing was done outdoors!

⁴⁸ Thus, the authoritative 17th-century English agricultural reference work by J. Worlidge, Systema Agriculturae, published in London in 1675, speaks (p. 15) of hanging up tobacco leaves, once gathered, threads run through them. Hans Sloane (A Voyage to the Islands Madeira, Barbadoes, Nevis, St. Christophers and Jamaica, with the Natural History /2 vols., London, 1707/, I, 148) cites Du Tertre, who observed West Indian methods first hand around mid-century: "When the leaf, by doubling breaks, they cut it and string it, so as not to touch one another."

⁴⁹ Neander, op. cit. (direct quote from D'Everard translation thereof, op. cit.). Neander, a physician primarily interested in the medicinal properties of tobacco, relied on such early authorities as Liebault, Monardes, and Gohory, for his detail on West Indian tobacco cultivation.

these were methods in use in the Indies, it seems quite logical that the Virginia colonists would have borrowed methods therefrom as readily as they borrowed seeds.

In the Glover account quoted, there is no step⁵⁰ indicated between the "striking" of the tobacco after barn curing and the readying of it for market. There is some ground for believing, however, that there was a brief period following the "striking" when the tobacco was heaped on the floor of the tobacco house for further "sweating," prior to "stripping" and packing. Thus, Oldmixon, writing only some thirty years after Glover, and Hugh Jones, writing in 1724, confirm this practice.⁵¹ More important, perhaps, is circumstantial evidence dating from January 1627, when "James Citty" court records⁵² confirm the stealing from "piles of tobacco" in Edward Grindon's tobacco house at "divers times before Christmas." Judged by the term of reference, the time of the robbery would seem, logically, to fall in December rather than in September, and hence, from piles formed after the tobacco had been aired -- on lines, or on sticks.

⁵⁰ Nor is there a step indicated between the brief process of field wilting and the hanging to dry. Probably only in the 18th century, then, was the practice general (as described in F. W. Fairholt, Tobacco: Its History and Associations [London, 1859] p. 300), prior to hanging, of laying the leaves on the barn floor, turning them every 24 hours, allowing them partially to ferment. John Oldmixon (cited in Gray, I, 216) described a custom followed about 1704 of heaping up the plants in the field (after the half-day wilting) to "let 'em lye and sweat a night" prior to carrying them into the tobacco house next day.

⁵¹ John Oldmixon, The British Empire in America (2 vols., London, 1708), I, 309, cited in Gray, I, 216; Hugh Jones, op. cit., p. 40. Arthur Pierce Middleton (in Tobacco Coast, op. cit., p. 100), says that after a rainy day the stalks were taken down, bulked in piles, covered, and left to sweat a week or two -- a process which humidified the leaf and made it /

⁵² See footnote 40

pliable.

Preparation for Market

Though hogsheads had become universally used well before Thomas Glover's day, for some time tobacco had been marketed (or shipped) in containers of irregular size and appellation (pipes, butts, etc.), or in loose bundles.⁵³ Weighing as much as one hundred pounds on occasion, the latter were probably just leaves piled upon leaves bound about with cord; perhaps, however, leaves wrapped around with canvas or larger "wrapper" leaves⁵⁴ and shaped something like the rough bundle or roll illustrated in Figure 6, Appendix. If as early as 1615 the expression "roule" is encountered in the records,⁵⁵ it seems fairly probable that this does not mean (in the sense of general use) the sophisticated rope-like roll "soun" even then in the West Indies and Europe (see Figures 7, 9, and 10).⁵⁶ Indeed, at the

⁵³ Bruce, I, 295; McIlwaine, Mins. Gen. Court, pp. 51, 61

⁵⁴ Bruce (I, 295) says "wrapper" was a recognized term as early as 1625, "tobacco of the finest quality bearing this name being doubtless used for the outer covering of the roll." In the General Court minutes, there is a suggestive reference to a sheet, or canvas cover, in a pilfering case (McIlwaine, Mins. Gen. Court, p. 110).

⁵⁵ In 1615, the Flying Horse reached England from Virginia with one roll (probably among others) weighing 105 pounds (Alexander Brown, The Genesis of the United States [2 vols., Boston, 1891], II, 272). This weight is unusually heavy compared with the weight of the typical roll cited below.

⁵⁶ This is the feeling, too, of Miss Sarah Dickson, Curator of the Arents Collection, New York Public Library. Citing Fairholt, p. 124: "Roll tobacco was formed in a continuous thin rope of leaf, by aid of a wheel, as twine is made; and was formed by adding the leaves to each other, and tightly compressing them as the wheel revolved . . ." Rolls varied in weight from one to thirty pounds; the rope-like twist was folded or wound into long cylindrical affairs, wrapped in canvas and bound (Raymond Jahn, Tobacco Dictionary [New York, 1954], p. 139). Print 8 (Appendix) depicts the method of shipping rolls in the hogshead.

height of the controversy over royal tobacco contracts (seeking monopolistic control of the tobacco trade) in the late 1620's, much of the Virginians' opposition arose over the initial requirement that tobacco be prepared in this form. In addition to psychologically well-timed arguments regarding the "cozenage and deceit" possible in making up the roll, the "unaccustomed trouble" of making up tobacco in this form was (revealingly) stressed.⁵⁷ Tobacco spinning machines must have been comparatively rare in Virginia in the seventeenth century. Though a 1640 county court reference to a "tobacco wheele" exists,^{57a} it is the only such reference come upon in the course of a (limited) survey; the machine is not mentioned at all in Bruce's exhaustive Economic History. Meanwhile, both Glover and Alsop -- writing some twenty-five years later -- speak (as of a common practice)⁵⁸ of binding up the tobacco in bundles and packing it into hogsheads.

Hogsheads did not become standard in size for some time. No

⁵⁷ See Gov. Yeardley to Lords of Privy Council, April 8, 1627, in Sainsbury Abstracts (Va. St. Library), XII, 155-6. "Cozenage and deceit" is a reference to the practice of introducing stalks, and other objectionable material in the roll, to add weight -- at the expense of good tobacco (see Bruce, I, 295, and MacInnes, The Early English Tobacco Trade [London, 1926], pp. 72-3).

^{57a} Estate inventory, Daniell Beddle, filed in Accomac court, 11 January 1640 (Northampton records, op. cit., p. 50). The earliest known print showing "tobacco wheel" in use in the Americas relates to the West Indies scene, mid-century; it is reproduced in AFRHS, Tobacco, II, 332, from Jean Baptiste Dutertre, Histoire Generale des Antilles.

⁵⁸ As long as frontier conditions existed (that is, certainly throughout the seventeenth century) some tobacco always was shipped in loose forms, for frontier farmers lacked facilities for "prizing" or pressing the tobacco into hogsheads. Indeed, according to V. J. Wyckoff, Tobacco Regulation in Colonial Maryland (Baltimore, 1936), p. 12, shipments "in

legislation is noted until 1657/8, when hogsheads were required to be 43 inches in length, with a head 26 inches in width, "bulge proportionable."⁵⁹ About mid-century the gross weight of a full cask of tobacco was commonly 475 pounds, but as the century wore on the weight increased to as much as 1,000 pounds -- the object being (at least in part) to lessen the burden of the tax of two shillings that came to be imposed on every hogshead sent out. In a further effort to get around this tax (first imposed in 1658),⁶⁰ the "stemming" of tobacco was resorted to, prior to shipment. This simply meant the stripping out of the central stem or "nerve" of each leaf; stems being without value, a maximum value-for-weight package resulted.⁶¹ In tobacco

bulk" actually increased in the latter half of the century. And despite great agitation, no law prohibiting such shipments seems to have been passed before 1700. The hogshead tax conceivably was an inducement, in some cases, to shipping tobacco in bulk. An inducement to smuggling operations, too (see Bruce, I, 452-6).

⁵⁹Hening, I, 456

⁶⁰Bruce, I, 353

⁶¹In 1736, an English merchant, Edward Athawes, wrote the Carter brothers in Virginia that "Buyers . . . chose the Stemm'd tobacco that is laid straight in the hogshead without being tyed in bundles. . . ." (Cited in VHB, XXIII, 165; Print 11, Appendix, illustrates the idea -- though unstemmed leaves seen to be shown). Though "stemming" seems, generally, to be an end-of-century development (Gray, I, 225; see also, by the same author, "The Market Surplus Problems of Colonial Tobacco," in William and Mary College Historical Quarterly, 2nd Ser., VII-VIII), there was apparently an early attempt to require the preparation of tobacco in this form. A proclamation by the Governor of Virginia in June 1641 in this regard (not in Hening, Statutes, but in Northampton County Orders, Deeds, Wills, Etc., No. 2, 1640-45 [Va. St. Lib.], p. 85 -- see also, Proclamation of February 1640 on page 84) which makes apparent reference to Act I of the Assembly of January 1639 (Hening, Statutes, I, 225: ". . . and in the next two years 170 lb tobacco per poll stript and smoothed was to be made . . .") requires "all the stalks out excepting two or three inches to keep

parlance, a distinction came to be made between "stemmed" and "leaf" tobacco -- the latter a reference to tobacco as stripped from the stalk of the plant. According to one early authority, the planters "seldom or never" stemmed Oronoke "as they do the sweet-scented."⁶²

Perhaps as another device for evading the hogshead tax, the method of shipping in "hands" developed.⁶³ In this process, an individual large leaf was rolled around its butt, or thick end, and a smaller leaf wrapped around this as a binder. These "hands" were then laid in the hogshead in layers, points alternately reversed for tighter fitting (and the interstices filled with smaller leaves) -- the whole compressed into the cask, layer by layer, by a more or less elaborate "prizing" arrangement. At its simplest, this last involved a wooden lever some thirty or forty feet long, inserted in a mortise made in a large tree for a fulcrum, against which the hogshead was placed.⁶⁴ (See Fig. 12.)

the leaf together. . . ." Though "Stripping" is spoken of (and the terms were apparently loosely used), "stemming" certainly seems implied. Law enforcement being what it was, this law conceivably was evaded as much as the other tobacco laws. "Stemming" became the practice when it became profitable.

⁶² See footnote 13. Hair's Bookkeeping (Edinburgh, 1765), as cited in R. A. Brock, "A Succinct Account of Tobacco in Virginia" in U. S. Census Office, Report on the Productions of Agriculture as Returned at the Tenth Census (Washington, 1883).

⁶³ Gray says "certain" planters "very soon" began to pack tobacco in "hands" (I, 219). The description cited is from Tatham, p. 38.

⁶⁴ Cp. Tatham, pp. 44-5, for perhaps more advanced techniques. Putting a hogshead "into presse" is spoken of in a York court deposition of 1691 (York County Deeds, Orders, Wills 9, 1691-94, p. 121).

In addition to dimensions, the law came to specify quite carefully other details with regard to hogsheads. Thus, every stave was to be one-third of an inch in thickness, and the oak timber from which it was fashioned was to be dry and seasoned -- a state in which it was not judged to be unless it had been kept for a period of three months after it had been hewed. When packed, the hogshead came to be marked 1, 2, 3, or 4, and so on, according to the number of hogsheads which the planter was shipping at that time, and inscribed (on one end) with the initials (in large letters) of the planter, and -- probably in most cases -- his mark.⁶⁵

All these precautions were necessary because of the primitive methods used to get the cask down to the river landing. In most cases, the cask was actually rolled to market (first, perhaps, entirely by hand) "on its own periphery" through dust, mire, and stream. Hugh Jones speaks in 1724 (as of an old custom) of sailors drawing individual hogsheads "for some miles, as Gardeners draw a Roller."⁶⁶ Probably the

⁶⁵ Bruce, I, 442-3: Susie M. Ames, ed., The County Court Records of Accomack - Northampton, Va., 1632-49 (Washington, D. C., 1954), p. 122; York County Records, No. 2, Wills & Deeds, 1645-49 (Va. St. Library), pp. 100, 182, 238; WHE, III, 343. The King's mark was "the broad Arrow" (see Order of Governor's Council, January 1691, in Wm. P. Palmer, ed., Calendar of Virginia State Papers & Other Manuscripts, 1652-1781 [Richmond 1875], p. 27. A Stafford County record of 1690 speaks of the "lining" of a hogshead (WHE, XLV, 177); in the Charles City County records of 1655, "8 tunne" of cask are ordered delivered "ready malled, barked, and rived" (Beverley Fleet, comp., Virginia Colonial Abstracts, (34 typescript vols., Richmond 1937-49), X, 10.)

⁶⁶ Jones, op. cit., p. 55. Deposition of John Sherman, June 1, 1692, in Henrico County Deeds, Wills, Etc., 1688-97, p. 317 ("... being in Company with some other Seamen Rolling tobacco about 18 days ago. . .").

physical arrangement was somewhat similar to the horse-drawn procedure described by Tatham in 1800. In the latter case, a horse was placed between split sapling shafts attached to wooden spikes (each two feet long) driven as anetrees into each "head" of the cask. In front of the hog's head, and behind the horse, a few slabs were nailed as a platform on which were stowed provisions for driver and horse, cooking utensils, an axe and a blanket (see Fig. 13). And so to market -- the picturesque "roller" sleeping by his horse and hog'shead at night! If the more sophisticated system using "fellies" had not yet been worked out by 1700, the simpler horse-drawn "rolling" system may have been, for Tatham claims "a very handsome credit" due "the early population" for devising it. ⁶⁷

See also similar reference, but for 1685, in Henrico County, Deeds & Wills, 1677-92, p. 355.

- ⁶⁷ Tatham, pp. 58-61; Samuel Mordecai, "Tobacco" in Journal of the Transactions of the Virginia State Agricultural Society, 1853, pp. 53-59. Fellies were "pieces of wood formed into segments of a circle in the manner of cart wheels"; these ". . . are fixed around the circumference of the tobacco hog'shead by means of auger holes and wooden pins driven into the bulk of the tobacco, through the bellies and staves of the hog'shead." Rolled on these, as supplementary "hoops," the hog'shead and contents were lifted out of the dust and mud, and saved from the stones. Of the "tobacco roller," Tatham writes "The mode of sleeping in the woods . . . the red clay lands through which most . . . pass; the continual and unavoidable exposure to dews, muddy roads, or dusty ones; and the distances which they travel, contribute to add to their long beards a very savage appearance They have hence become an object of apprehension to strangers."

Bibliographical Note

Primary Sources:

The basic "primary" source on any phase of tobacco history and cultivation is, of course, Jerome E. Brooks, ed., Tobacco, Its History Illustrated by the Books, Manuscripts, and Engravings in the Library of George Arents, Jr. 5 vols., New York, 1937-52/. A visit to the Arents Collection itself -- in the New York Public Library -- resulted in helpful, clarifying discussion with the curator, Miss Sarah A. Dickson, and a detailed look at valuable items otherwise available only in abstract form in the Brooks compilation; additionally, a look (however unfruitful) at acquisitions since the latter's publication, and at the tobacco label collection (examples reproduced in Fortune, IX, 22 [April, 1934/7]). The writer was also introduced to the unique and valuable "extra illustrated" Fairholt, a special expanded edition of the Fairholt tobacco study listed among the secondary sources, and to Miss Dickson's newly-published work, Panacea, or Precious Bane: Tobacco in Sixteenth Century Literature (New York, 1954) -- whose previous availability in serial form in the Bulletin of the New York Public Library, 1953 and 1954, had escaped attention. This work, especially for its translations of foreign materials, is almost as "primary" as the sixteenth-century sources upon which it is based.

The Arents Collection, however, is limited by the nature of its holdings -- books and pamphlets in the main. For the revealing incidental and local information on which direct knowledge of Virginian tobacco cultivation must (save for chance narrative accounts) finally be based, one must turn to public and private record material (printed or manuscript).

Chief among the materials of this nature consulted for this study were Susan M. Kingsbury, ed., The Records of the Virginia Company of London (4 vols., Washington, D. C., 1906-35); W. Noel Sainsbury, ed., Calendar of State Papers, Colonial Series, America and West Indies (34 vols., London, 1860-1939) -- of which the volumes covering the period 1574-1699 were checked; W. P. Palmer, ed., Calendar of Virginia State Papers and Other Manuscripts (11 vols., Richmond, 1875-1893, Volume I; Grant, W.L., and Munro, James, ed., Acts of Privy Council of England, Colonial Series (5 vols., London, 1908), Volumes I-III; L. F. Stock, Proceedings and Debates of the British Parliaments respecting North America (5 vols., Washington, D. C., 1924-41), Volume I; H. R. McIlwaine, ed., Minutes of the Council and General Court of Colonial Virginia, 1622-1632, 1670-1676

(Richmond, 1924); same, Journals of the House of Burgesses of Virginia, (13 vols., Richmond, 1905-15), Volumes I-II; same, Executive Journals of the Council of Colonial Virginia (5 vols., Richmond, 1925-45), Volume I; same, Legislative Journals of the Council of Colonial Virginia (3 vols., Richmond, 1928), Volume I; W. W. Hening, The Statutes at Large: Being a Collection of all the Laws of Virginia . . . (13 vols., Richmond, 1809-23), Volume I.

In addition, the abstracts and whole copies of British records available at the Virginia State Library in the numerous manuscript volumes of the Sainsbury, McDonald, Winder, and DeJarnette Papers -- which, however, were carefully checked only when gaps were apparent in the printed versions thereof that appear in the early volumes of the Virginia Magazine of History and Biography. No attempt was made to track down additional copies of British manuscripts available in the Library of Congress. Judged within the limits of this study, this seemed to entail too formidable a task of collation between Grace Gardner Griffin, A Guide to Manuscripts Relating to American History in British Depositories Reproduced for the Division of Manuscripts of the Library of Congress (Washington, D. C., 1946) and C. M. Andrews and F. G. Davenport, Guide to the Manuscript Materials of the United States to 1783, in the British Museum . . . (Washington, D. C., 1908).

Most valuable among the governmental records are the Virginia county records (of which only a sampling, in effect, could be made), consulted either in photostat or handwritten-copy bound volume form at the Virginia State Library, or in fairly-complete abstract form in Beverley Fleet, Virginia Colonial Abstracts (34 typescript vols., Richmond, 1937-49). County records consulted, included: York, 1633-57, 1691-94; Northampton, 1640-45; Henrico, 1677-97; Norfolk, 1646-51; Surry, 1645-72; Charles City (Fleet), 1655-65; York (Fleet), 1633-48; Lancaster (Fleet), 1652-55. The American Historical Association publication, Susie M. Ames, ed., The County Court Records of Accomack-Northampton, Va., 1632-40 (Washington, D. C., 1954) was a wonderful "find" in this record field (a field made difficult by the 17th-century calligraphy), and a model for that of which it is wished there were more. In addition to the volumes of records cited, additional abstracts and copies of such records were, of course, come upon in the Virginia Magazine of History and Biography, and like publications. Certain printed church vestry records (as edited by Churchill Chamberlayne) were hopefully

looked through -- with discouraging result; namely, Vestry Book of Christ Church Parish, Middlesex County, 1663-1767 (Richmond, 1927); Vestry Book and Register of St. Peters Parish, New Kent and James City Counties, 1684-1786 (Richmond, 1951); Vestry Book of Petsworth Parish, Gloucester County, Va., 1677-1793 (Richmond, 1933).

"Primary", certainly, in addition to the governmental records cited, are the family manuscript materials published throughout the many volumes of the Virginia Magazine of History and Biography (Richmond, 1893 to date), the William and Mary College Quarterly Historical Magazine (Williamsburg, 1892 to date) Tyler's Quarterly Historical and Genealogical Magazine (Richmond, 1919-1929). Such materials as the Robinson Manuscripts, the Ludwell Manuscripts, the Fitzhugh Papers, for example, are contained herein. Rather than working back and forth with E. G. Swem, Virginia Historical Index (2 vols., Roanoke, 1934-36), the guide to significant entries in these volumes (and others), the investigator went through these publications volume by volume. In an attempt to track down additional pertinent family material, unpublished, conferences were held with Dr. W. J. Van Schriiven, the Virginia State Archivist, and John Jennings, Librarian, Virginia Historical Society. In New York City, a valiant effort was made to read the very early Smith of Nibley Manuscripts -- with discouraging result (because of the difficult calligraphy); some of this collection has been printed in the Virginia Company Records cited and elsewhere; meanwhile, judging from the "calendar" printed in the Bulletin of the New York Public Library Volume I (1897), nothing very pertinent to this report was missed. At the Alderman Library, University of Virginia, Francis Berkley had some very illuminating remarks to make on the entire manuscript situation (particularly with reference to Virginiana still in England, untapped) and introduced the writer to the mildly-pertinent William Hugh Grove Diary, the Robert Anderson Tobacco Book, 1698-1717, and (in photostat and transcript form) Documents Relating to Voyages to Virginia by George Pattison and Abel Grant, 1675-76 -- neither of which items were significant for this study.

At the New York Public Library, in the Map Division, E. D. Fite and Archibald Freeman, ed., Book of Old Maps (Cambridge, 1926) was examined, in addition to other early maps in the Division's collections -- hoping for helpful vignettes. Other than the Albert and Lotter map of 1764 with the tobacco-wharf scene, reproduced, among other places, in F. B. Simkins, A History of the Old South [rev. ed., New York, 1953] and the even better known Joshua Fry and Peter Jefferson map of 1751 (again with wharf scene), only one vignette, (reproduced in enlarged form with this report) -- that (probably) showing a tobacco knife in action, was turned up. The latter was taken from Herman Moll, Map of North America (c. 1720).

Williamsburg materials, mostly 18th century in character, were consulted only through the Restoration's printed manuscript guide and by conversation with Dr. Edward M. Riley, Chief, Research Division. From the guide, a 1750 tobacco-curing reference was turned up -- from the diary of Rev. Robert Rose -- and copy secured (for the files).

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APPENDIX A

Abstract, Jean Liebault, L'Agriculture et maison rustique (Paris, 1567), as translated by Sarah A. Dickson in Panacea or Precious Bane (New York, 1954), Chapter IV. The first account in print of tobacco cultivation techniques.

It needs sun and a south exposure and a wall at the back to protect it from the north wind and to reflect on it the heat of the sun; it needs protection from the blowing of the wind because of its weakness and height. It grows better if well-watered, and recovers with water in time of drought. It hates cold; that is the reason why, in order to keep it from dying in winter, it must be put in caves made on purpose in the gardens, or else be covered with a double mat or be protected by a penthouse made on the wall behind with a good covering of reed, and, when the southern sun shines, the opening of the tent on the south side of the plant should be opened.

To sow tobacco, make a hole with the finger in the earth as deep as the finger is long, then throw into the earth forty or fifty seeds together, and fill up the hole; for the seed is so small, that if only three or four seeds are put in, the earth will choke them. If the weather is dry, water the place lightly for fifteen days thereafter. It can also be sowed like lettuce and other such plants.

And when the plant sprouts enough so that every seed has sent forth a shoot and the little threads of the roots are mingled together,

a large opening should be made with a big knife around the place and the earth and everything dug out and thrown in a pail of water so that the earth is separated and the little sprouts are on the top of the water. Take them out one by one without breaking them, put the same earth back on them and transplant them near the same wall, three feet away, and four feet apart; if the earth near the wall is not as rich as it should be, prepare some which is better, and revive the shoots by frequent watering. The time for sowing is mid-April, or better still, at the beginning. . . .

If the leaf of the plant is dried in the shade, hung up to the ceiling of the room, neither in the sun nor in the wind nor near a fire, and is placed on a chafing dish to be burned, and if the smoke from this is taken into the mouth through a pipe, while keeping the head well-covered, such a large quantity of slimy and watery mucous comes from the mouth that the body is much reduced from it as from a long fast; for this reason some believe that incipient dropsy, not yet established, will be cured from this perfume.

APPENDIX B

Extract from George Alsop, "A Character of the Province of Maryland," (1666), as taken from Clayton Coleman Hall, ed., Narratives of Early Maryland, 1633-1684 (New York, 1910), p. 363

Tobacco is the only solid Staple Commodity of this Province: The use of it was first found out by the Indians many Ages agoe, and transferr'd into Christendom by that great Discoverer of America Columbus. It's generally made by all the Inhabitants of this Province, and between the months of March and April they sow the seed (which is much smaller than Mustard-seed) in small beds and patches digg'd up and made so by art, and about May the Plants commonly appear green in those beds: In June they are transplanted from their beds, and set in little hillocks in distant rows, dug up for the same purpose; some twice or thrice they are weeded, and succoured from their illegitimate Leaves that would be peeping out from the body of the Stalk. They top the several Plants as they find occasion in their predominating rankness: About the middle of September they cut the Tobacco down, and carry it into houses, (made for that purpose) to bring it to its purity: And after it has attained, by a convenient attendance upon time, to its perfection, it is then tyed up in bundles, and packt into Hogs-heads, and then laid by for the Trade.

APPENDIX C
(Illustrations)

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1. Eighteenth-century tobacco label (Arents Collection).
West Indies cultivation scene.



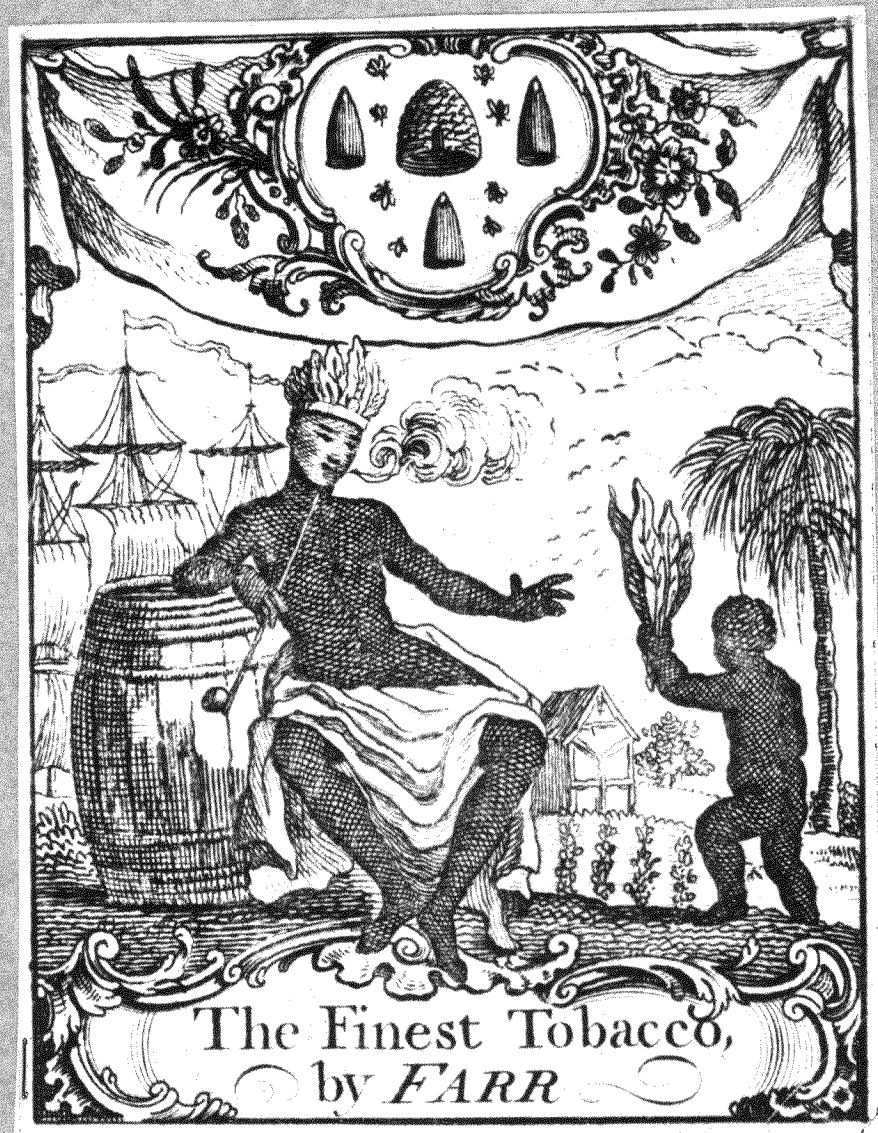
2. German cultivation scene of 1700 (taken from Franz Philipp Florin, et al., Oeconomus Prudens et Legalis [Leipzig, 1702], p. 605 (Arents Collection). Note "tobacco knife." Also, rows of tobacco in background.



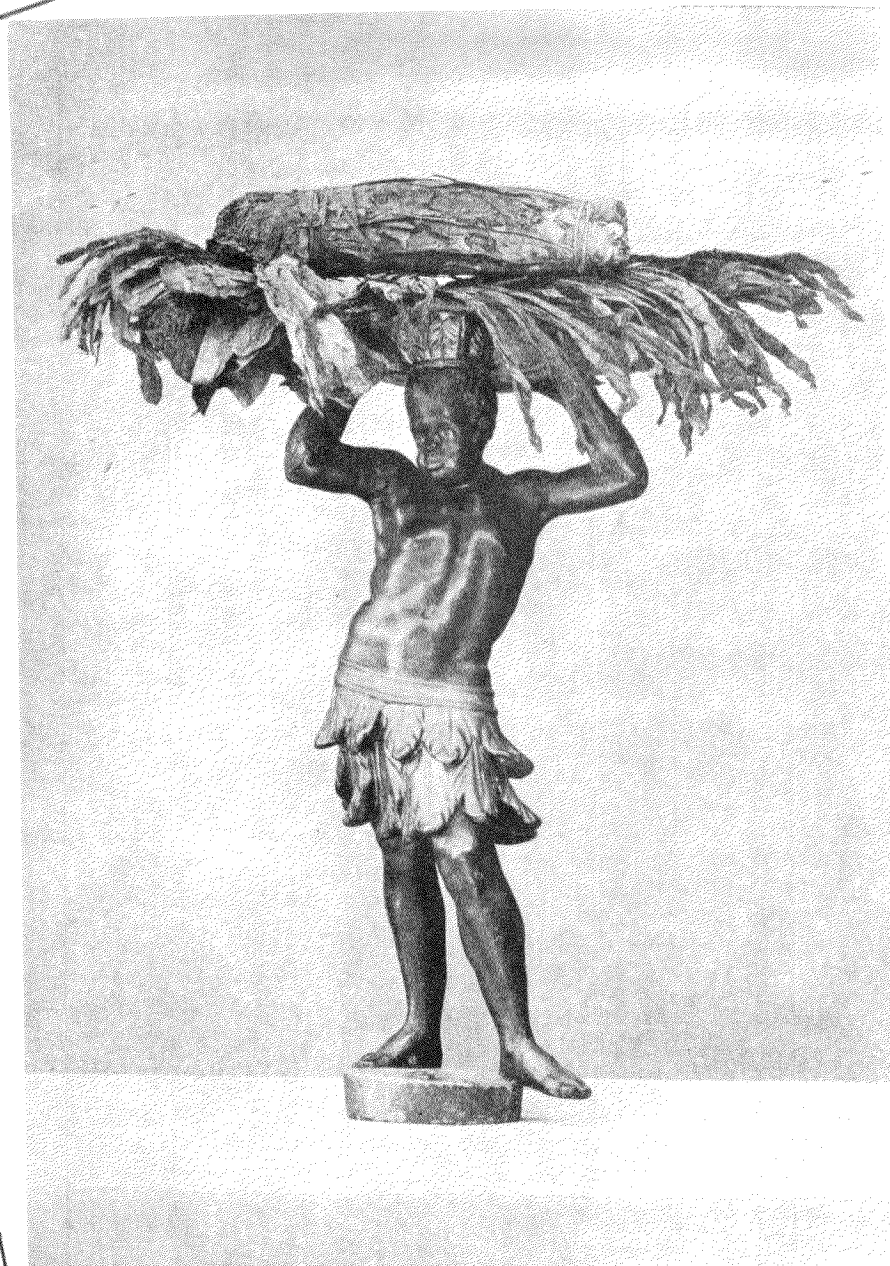
3. Cultivation scene, probably West Indies, c. 1700.
From Herman Moll, Map of North America (New York Public
Library), no date. Tobacco knife?



4. West Indies tobacco curing, showing use of "lines."
 From Johan Neander, *Tobacologia* (Leyden, 1622), print
 opposite p. 31. (Arents Collection).



5. Early Eighteenth-century tobacco label (Arents Collection). Probably West Indies cultivation scene. Note tobacco barn.



6. Eighteenth-century tobacconist trademark or symbol (from G. E. Luthgen, et al., Der Tabac in Kunst und Kultur [Cologne, 1911], (Arents Collection). Suggests (perhaps) form of early rough "roll" of tobacco.



7. Seventeenth-century German scene showing preparation of roll tobacco on "tobacco wheel." Taken from Wolfgang Hohberg, Georgica Curiosa Aucta (Nuremberg, 1687).



8. Eighteenth-century tobacco label (Arents Collection) showing tobacco rolls and manner of placing them in hogshead.



Bubb,
**TOBACCONIST,
& SNUFF MAKER,**
Near Cecil Street,
N^o 82.

Strand,
LONDON.

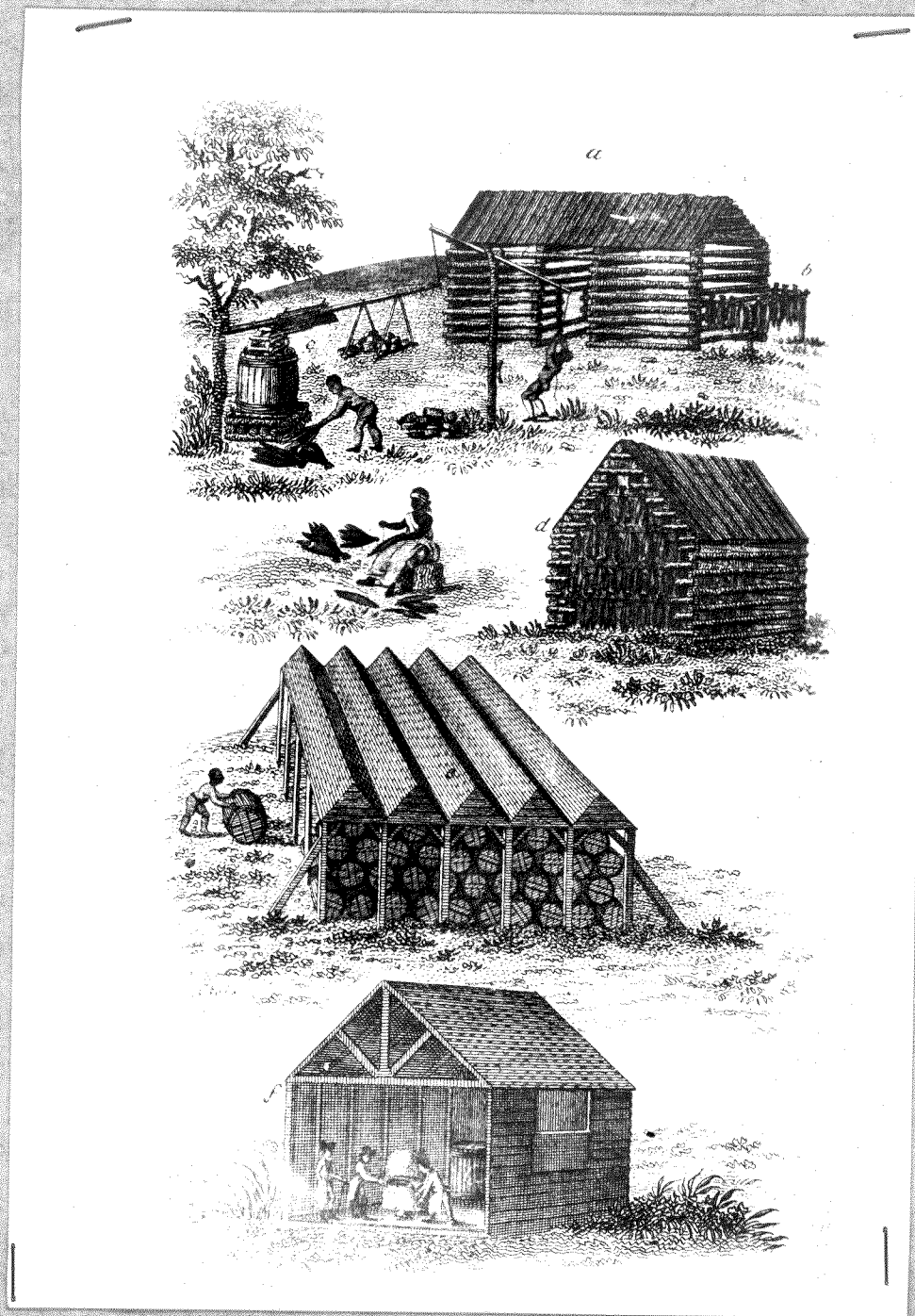


9 (above) and
10 (below).

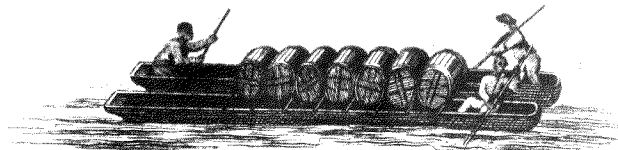
Eighteenth-century tobacco
labels (Arents Collection)
showing form of later
tobacco rolls, and leaf-
arrangement (above, left)
for start of roll.



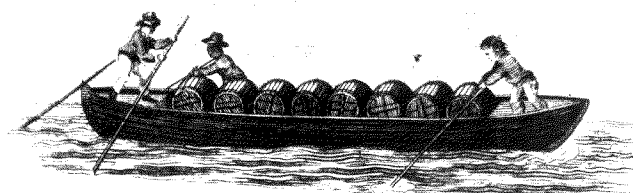
11. Eighteenth-century snuff label, showing tobacco leaves ("unstemmed"), as packed flat in hogshead.



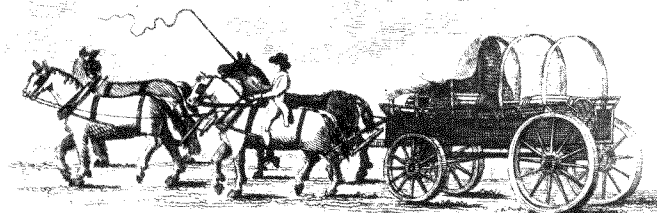
12. Eighteenth-century tobacco barns, and (top left) "prizing." Tatham (1800).



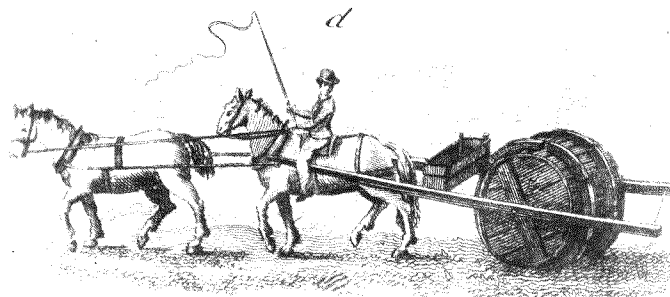
b



c



d



13. Getting the hogshead to market. Eighteenth-century (Tatham, 1800). Lowest picture represents horse-drawn method, with "fellies."