The Farmers' Register

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Richmond, August 1833
No. 3

EDMUND RUFFIN, EDITOR AND PROPRIETOR- T.W. WHITE, PRINTER

ACCOUNT OF THE EMBANKMENT AND CULTIVATION OF THE SHIRLEY SWAMP.

To the editor of the Farmers' Register

SHIRLEY, June 26th 1833.
Agreeable to your request I have examined my Journal, and find the following results from reclaiming eighty-live acres of swamp land at Shirley. The swamp was heavily covered with gum and ash trees, and overflowed twice every day by the tide water at the flood, but left free from water at the ebb tide. - The land was reclaimed in the year 1825, by contract, at the expense of $ 1.25 per running yard, for the dike, in the following manner. In the first place, away about fifty feet wide was cleared on the line or route for the dike and then a ditch -about three feet wide and two feet deep was dug through out the course for the dike to be run upon, to keep it from leaking underneath. The dike was then commenced at low tides, by digging pits in the most convenient places on the outside of the line of the dike, (and only on the outside, and never nearer the dike than twenty feet,) and loading wheelbarrows with the mud from the pits, which were rolled up to the dike on thick planks, and then deposited in a rough shape, until the whole line or course of dike was gone around, so as to give the mud time to settle and dry. The dike being seventeen hundred yards long, sixteen feet at base, four feet at top, and six feet high, it took about five months to go around it the first time, by which time it had settled so much as to require nearly as much mud the second time of going around as the first, to get it to its required size. On going around it the second time, the creeks (three in number,) were stopped out as they came to them, by driving down four rows of large piles, or poles pointed at one end, and placed close together, quite across the creeks, so as to keep the mud from washing away as it was thrown in. The base of the dike at the creeks was fifty feet, and the dike made much higher and wider at the top than the other parts, to allow for the greater settling. After all the creeks were stopped, and the dike completed, a trunk, with a floating valve, (Note A) made of very thick pine plank, was put down at the highest side of each creek, about twenty feet from the creek, with a ditch leading to the creek, to let off the water, at low tide, but exclude it at high tide. The cost of dike, trunks and all, was $2167.50. The winter of 1825-26, I cleared fifty acres of the reclaimed land, by cutting down the trees, and burning them in heaps, hut did not grub up the stumps. (Note B) The spring of 1826, I merely, listed up (very imperfectly) rows six feet apart, with the grubbing hoes, just wide enough to get earth to cover the corn, but did not pretend to grub up the large stumps or roots, even in this list. From the 12th to the

20th May, I planted the fifty acres in corn on the six feet lists, two feet apart as near as we could come at it, considering the rough state of the land : and on thinning out the corn left three stalks in the hill. It produced a very heavy crop of stalks, and a good crop of corn, considering the rough state of the land; the fodder fired before we could gather it all. The crop produced, as by journal, three hundred and eighty barrels of mechantable corn and sixty five of short corn fed to hogs. This crop was sold in the spring of 1827, at $3 per barrel, being $1140, besides the hog corn and some fodder.

The winter of 1826 and ’27 I cleared the balance of reclaimed land, and in the spring of 1827 listed it in the same manner as lest year, and planted the whole 80 acres* in corn, about the same time in May as last year -and had the promise of a very heavy crop of corn, until the storm of August 26th broke the dike in three places, and overflowed the reclaimed land, and apparently destroyed the crop of corn. I was at the mountains and my overseer despairing of saving any part of the crop, did not pretend to repair the damages. But as soon as I heard it, I hastened home ; and when I arrived, the tide had been flowing in end out for ten or fifteen days, and it required twenty days to repair the damages, (which was done with the plantation hands,) so that the corn had been subject to the tides for thirty days at least, and I was afraid was ruined; but fortunately the crop was matured before the storm, and all that stood up was saved- and I made about half a crop.

Crop made this year, as per journal—merchantable corn four hundred and eight barrels, and so much unsound corn that we did net pretend to measure it ; fed some of the best of it to hogs balance made manure of. Crop sold for $2 per barrel - amount $816.

I now found that the dike had settled, or sunk so much that it would not do to risk another crop of corn upon the reclaimed land without raising it; and with my plantation hands, I raised the dike one foot higher during the winter of 1827 and ‘28.

In the spring of 1828, planted in the same way, and about the same time in May as last year, seventy acres of the reclaimed land in corn, and ten acres of the dryest part in cotton. We had a very wet summer throughout, and made a short crop of corn on the reclaimed land, in consequence; and nearly a total failure in cotton. Crop as by journal, made on this land this year, four hundred and fifty four barrels merchantable corn, fifty four good short corn fed to hogs, and a great deal of rotten corn. Cotton made - only six hundred and twenty pounds, picked or nett cotton. This crop of corn sold for $2.40 per barrel, making $1089.60; and cotton was worth, I suppose, ten cents the pound, (though that was used on the plantation) which, added to the corn, amounted to $1151.60. The dike now had so much sunk or settled, that we had to raise it again this winter a foot higher all around. The reclaimed land had also sunk a little, and the stumps were disappearing by rotting.

* Five acres of this area was at all times lost by being covered, or kept too wet, by the small creeks—so as to leave the whole quantity fit for cultivation, eighty acres Only.

In the year 1829, cultivated reclaimed land as usual in corn, except that we only left two stalks in the bill to try to prevent the fodder from firing, which has always taken place before we could gather it all, but still it fires too soon for us. Made a very good crop of corn this year, seven hundred and sixty three barrels merchantable corn; seventy barrels short, but sound, fed to hogs; some twenty or thirty barrels of rotten corn, besides the above - price oft corn this year $1.80 per barrel value of swamp corn $1373.40. As I have neglected to mention the mode of cultivation,-I will now do it. My reclaimed land is too low and wet to plough, except ten acres on the margin of the highland, so that we have to cultivate all of it except the above ten acres, entirely with hoes, which is done in the following ways : The land is laid up every winter in six feet beds, with hoes, and well ditched anti water-furrowed from one end to the other, so as to make it as dry as possible. We plant it as soon as possible in the spring, (which is generally the last of April or first of May,) two feet between every hill on the six feet beds, thinning out to two and three stalks to the hill. We begin to weed the corn broad-cast as soon as any grass or weeds appear. We generally get over it twice before harvest, and then the growth of corn is so rapid that it overshades the land, and keeps the grass and woods under, so that the cultivation of this sort of land is much less laborious than any one would suppose from not being able to use the plough, provided you begin to weed as soon as any “case or weeds appear: but if you let them get the start of you, you may bid adieu to your corn, for all the hoes in Virginia would not save it.

In 1830, began to plant corn on reclaimed land on 20th April, and finished on 30th; cultivated as usual ; we had a wet season, and bad for swamp land. Crop made this year, by journal, five hundred and fifty barrels of merchantable corn ; seventy barrels of short corn fed to hogs, and fifty of rotten corn. I will here remark that this kind of land always has much more short and rotten corn than highland, and never turns out so well as the appearance of the crop, while growing, would induce you to suppose. I have often been told by persons who saw the crop while in the tassel, that it must make eighteen or twenty barrels to the acre, so luxuriant was the growth; but the best crop I ever mode, was ten barrels and a half to the acre, But the beauty of this land is, that it will last for ever without manure, provided you keep the water off; and if ever it sinks to low water mark. which I believe it will, after a long while, why we can but use the pump as the do in Holland. It has now sunk about eighteen inches. Price of corn in 1830, $3.70 per barrel, and value of s swamp corn $2035

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In the year 1831, cultivated reclaimed land as usual, except the we planted the corn earlier in April than before—and just as it was all up, on the 27th .April, We had a violent N. E. storm with high tides, which broke over the dike, and swept every thing; corn all destroyed - dike made a wreck of - and I was very near giving it up in despair, and in fact did give orders to break up some high land instead of it, but after a while thought I would make another trial. Went to work on the dike, and by the 27th May stopped out the water again, and began to plant corn a second time. The corn cane up, and stood very well, and I thought we had as good a prospect for a full crop as before the storm ; for by 30th May, we had completed the repairs to the dike and began to weed the corn, at which time it looked beautiful. The second day after we began to weed, the corn began to disappear, and by the fourth day every plant was gone. The caterpillars, or a worm very like them,

(somewhat smaller,) had eaten up every plant in the eighty acres, except a small corner of the reclaimed land, about two acres, where, on the subsiding of the flood, all the trash - had floated to the thickness of four feet, and we had to burn it off before we could plant that corner. That part escaped the caterpillars entirely, their eggs being burnt, I suppose. I cannot account for the caterpillars, as we never had them before nor since in our corn, though we have had a few once or twice in our wheat, but not to do much injury. As I was pretty well tired of planting for one year, I waited until the glut of worms as I thought was over, and two days before harvest, the 14th and 15th June, l made a great push, working night and day, and planted the reclaimed land the third time. But it would not all do: the glut of caterpillars was not over; they were only concealed in the ground—and as soon as the corn came up, they again swept it off the face of the earth. After harvest, I thought it was too late to make corn in our climate, but determined to make the fourth trial, and began to plant on 30th June. The caterpillars had turned into a kind of fly and disappeared, and we made about half a crop. Crop made this year on reclaimed land, as by journal, of merchantable corn, three hundred and ten barrels; fifty two barrels of short, or hog corn, and thirty barrels of rotten corn, caught by frost. Price of corn this year, $2.25 per barrel; value of swamp corn $697.50.

1832, cultivated reclaimed land as usual in corn, and had no rain from June 3d until 24th September, the most unprecedented drought ever known in this climate. The swamp land corn suffered from the drought, yet we made there two - thirds of a crop: four hundred and sixty four barrels merchantable corn; forty fire barrels of short corn fed to hogs, and some rotten corn as usual. Price of corn year, $3.25 per barrel value of swamp corn, $1508.

Recapitulation of Products and Expense.

Years.	Product.	Sales.	Price per bbl,	When sold.
1826 bls:	380	$1140	$.3 00	1827
1827	408 1/2	816	2 00	1823
1828	454	1151 ine. cotton	2 40	1829
1829	763	1373	1 80	1830
1830	550	2637	3 70	1831
1831	310	700	2 26	1832
1832	464	1508	3 25	1833
		———		
		$8723		

Cost of reclaiming the land,	$2200
Interest for seven years on $2200,	923
	———
	3123
Amount of sales for seven years,	8723
Balance	5600

The corn used for hogs, and the fodder, &c. are not included in this statement of products. The labor of cultivation and repairs, (of which no correct estimate can be made,) should be deducted from the foregoing balance of $5600, to show the clear profit.

I ought hero to remark that I have been obliged to add a foot to the height of the dike every year since it was reclaimed, and the year it was so wrecked, I had to add two feet, and yet the dike is now only one foot higher than it was first made— that is to say seven feet, so great is the settling of the dike. The general surface of the land since reclaimed has sunk about eighteen inches.

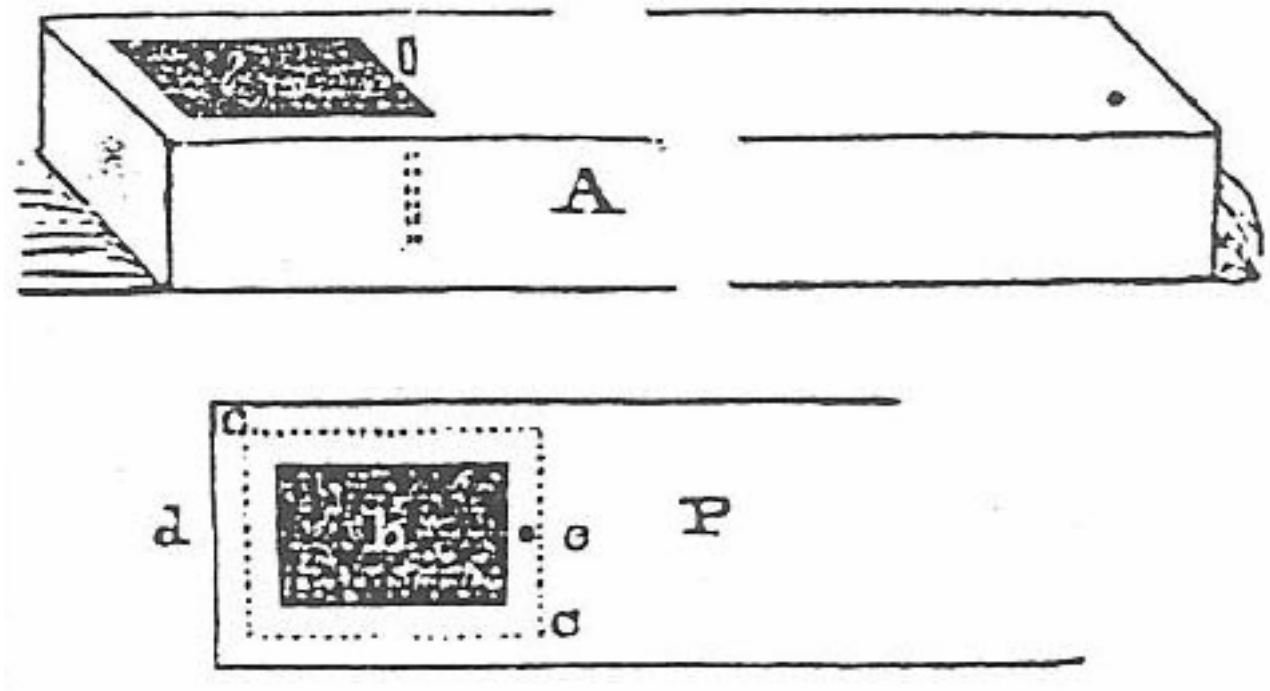
I have not been as much annoyed by muskrats as I expected, from the circumstance, I suppose, of our constant attention to the dike, and the constant working of the hands during summer, in the crop, and winter on the dike, so that the muskrats are scared. A man goes all around the dike every day to see whether there are any muskrat holes, and marks them wherever he finds them; and every now and then we select a low tide, and cut them out, and stop them up carefully, which keeps them sufficiently under for all purposes. I think the swamp mud is better for making a dike that is liable to the waves of the, river or creek, than highland earth, as it is much more tenacious and less apt to be washed by the waves: and when a muskrat cuts through the swamp mud, it never washes larger. I have known a hole which could not be stopped out, for want of time and low tides, remain the same size for months at a time, - so soapy and tenacious is our swamp mud; and but for its settling, it would be the very best material for dikes. When my dike was overflowed, if it had been of highland earth, or sand, it would have been all washed away—but the swamp mud stood it like wax, and only broke in the weaker parts. To future reclaimers of swamp lands I would advise the leaving a very wide margin of land between their dike and the river or creek, to furnish mud to repair and raise these dikes with, as well as to break the waves off; and never to dig a pit or hole, nearer than thirty or forty feet, (the farther the bolter) from the dike, as all pools or holes of water near the dike attract muskrats. Also never allow any earth or mud to be taken from the inside of your dike, as that is ruinous – for if you have any sink on the inside, the water will remain in it frequently, and will attract the muskrats; for wherever there is water, they cut a hole through the dike to communicate with it. The greatest security against them is to have your reclaimed land free from water, on the inside at least—have no ditches near the dike if it can be avoided; but if you are obliged to have ditches, let them run perpendicular to your dike, and not parallel, so as to present the least surface of water, and thus offer as little inducement as possible to the muskrats to cut through the dike. Build the dike of the mud or earth from without and take it as far off from the dike as possible. With good planks and wheelbarrows, it is almost as easy to take the mud from fifty, sixty, or one hundred feet, as nearer, and you will save by it in the end. The further off you go for your mud the better.

HILL CARTER.

- [NOTE A.]

The trunks to let off the rain water, or any water which collects on the reclaimed land, are made in the following manner ; For a dike sixteen feet at the base, take two pine planks, twenty six feet long, fourteen inches wide, and two inches thick at least (three would be better,) for the sides of the trunk: then with plank of the same thickness, sawed into lengths of twenty-two inches, nailed on the bottom and top of the side planks, with close joints, make a trunk, leaving one end open and the other closed. Then about four inches from the closed end of the trunk, on the top, cut a hole eighteen inches long, and twelve inches wide, to let the water through. Place a valve or door on tile underside of the hole of the trunk, four incites wider and four inches longer than the hole, which will float up io the bob anti close it, when water is higher on the outside than the inside ; but when the water is higher on tic inside, it will sink by the pressure of the water, and let it off from the reclaimed land. The valve or door is kept from getting out of the trunk by a perpendicular pin, put through the top and bottom of the trunk, and near enough to the hole to make the valve rise just under it, and close it. The valve or door should be made of two pieces of plank pinned together, one on top of the other, with the grain of the wood of each crossing that of the other to keep the valve from splitting.

The trunk is then placed in a ditch cut through the dike to receive it, about half a foot below low water mark, to keep it always immersed in water, (which keeps it from rotting,) with the valve end on the inside of the dike, and the open end on the outside of the dike.



A. – The trunk
B.—Horizontal plan of the top of the trunk.

b. - Aperture for the descent of water.
cc. - Floating valve, which rises to the aperture b., and excludes the flood tide,
d. - The closed end of the trunk.
e. - Upright pin, to secure the valve in its place.

[NOTE B.]
It is much better, I think, not to grub up and - burn the stumps and roots, on first clearing swamp land, except in the list where you plant the corn, for several reasons. In the first place, it reduces the surface very much, which is very desirable should not be done. In the second, the stumps and roots keep a great deal of the ground from putting up in grass and weeds, and save that much labor in weeding ; and third, the stumps and roots rot much sooner in swamp than in high land, anti you get rid of them soon enough without the endless labor of grubbing them up. They will all disappear in four or five years, where the land is cultivated every year; and the land will not require bedding sooner than that, as it does not sink much until the stumps and roots decay.

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SHIRLEY, June 26th, 1833.

Agreeable to your request I have examined my journal, and find the following results from reclaiming eighty-five acres of swamp land at Shirley. The swamp was heavily covered with gum and ash trees, and overflowed twice every day by the tide water at the flood, but left free from water at the ebb tide. The land was reclaimed in the year 1825, by contract, at the expense of $1.25 per running yard, for the dike, in the following manner. In the first place, a way about fifty feet wide was cleared on the line or route for the dike, and then a ditch about three feet wide and two feet deep, was dug throughout the course, for the dike to be run upon, to keep it from leaking underneath. The dike was then commenced at low tides, by digging pits in the most convenient places on the outside of the line of the dike, (and only on the outside, and never nearer the dike than twenty feet,) and loading wheelbarrows with the mud from the pits, which were rolled up to the dike on thick planks, and then deposited in a rough shape, until the whole line or course of dike was gone around, so as to give the mud time to settle and dry. The dike being seventeen hundred yards long, sixteen feet at base, four feet at top, and six feet high, it took about five months to go around it the first time, by which time it had settled so much as to require nearly as much mud the second time of going around as the first, to get it to its required size. On going around it the second time, the creeks (three in number,) were stopped out as they came to them, by driving down four rows of large piles, or poles pointed at one end, and placed close together, quite across the creeks, so as to keep the mud from washing away as it was thrown in. The base of the dike at the creeks was fifty feet, and the dike made much higher and wider at the top than the other parts, to allow for the greater settling. After all the creeks were stopped, and the dike completed, a trunk, with a floating valve, *(Note A,)* made of very thick pine plank, was put down at the highest side of each creek, about twenty feet from the creek, with a ditch leading to the creek, to let off the water at low tide, but exclude it at high tide. The cost of dike, trunks and all, was $2167.50. The winter of 1825–26, I cleared fifty acres of the reclaimed land, by cutting down the trees, and burning them in heaps, but did not grub up the stumps. *(Note B.)* The spring of 1826, I merely listed up (very imperfectly) rows six feet apart, with the grubbing hoes, just wide enough to get earth to cover the corn, but did not pretend to grub up the large stumps or roots, even in this list. From the 12th to the 20th May, I planted the fifty acres in corn on the six feet lists, two feet apart, as near as we could come at it, considering the rough state of the land: and on thinning out the corn, left three stalks in the hill. It produced a very heavy crop of stalks, and a good crop of corn, considering the rough state of the land; the fodder fired before we could gather it all. The crop produced, as by journal, three hundred and eighty barrels of merchantable corn, and sixty five of short corn fed to hogs. This crop was sold in the spring of 1827, at $3 per barrel, being $1140, besides the hog corn and some fodder.

The winter of 1826 and '27, I cleared the balance of reclaimed land, and in the spring of 1827 listed it in the same manner as last year, and planted the whole 80 acres* in corn, about the same time in May as last year—and had the promise of a very heavy crop of corn, until the storm of August 26th broke the dike in three places, and overflowed the reclaimed land, and apparently destroyed the crop of corn. I was at the mountains, and my overseer despairing of saving any part of the crop, did not pretend to repair the damages. But as soon as I heard it, I hastened home; and when I arrived, the tide had been flowing in and out for ten or fifteen days, and it required twenty days to repair the damages, (which was done with the plantation hands,) so that the corn had been subject to the tides for thirty days at least, and I was afraid was ruined; but fortunately the crop was matured before the storm, and all that stood up was saved—and I made about half a crop.

Crop made this year, as per journal—merchantable corn four hundred and eight barrels, and so much unsound corn that we did not pretend to measure it; fed some of the best of it to hogs; balance made manure of. Crop sold for $2 per barrel—amount $816.

I now found that the dike had settled, or sunk so much that it would not do to risk another crop of corn upon the reclaimed land without raising it; and with my plantation hands, I raised the dike one foot higher during the winter of 1827 and '28.

In the spring of 1828, planted in the same way, and about the same time in May as last year, seventy acres of the reclaimed land in corn, and ten acres of the dryest part in cotton. We had a very wet summer throughout, and made a short crop of corn on the reclaimed land, in consequence; and nearly a total failure in cotton. Crop as by journal, made on this land this year, four hundred and fifty four barrels merchantable corn, fifty four good short corn fed to hogs, and a great deal of rotten corn. Cotton made—only six hundred and twenty pounds, picked or nett cotton. This crop of corn sold for $2.40 per barrel, making $1089.60; and cotton was worth, I suppose, ten cents the pound, (though that was used on the plantation) which, added to the corn, amounted to $1151.60. The dike now had so much sunk or settled, that we had to raise it again this winter a foot higher all around. The reclaimed land had also sunk a little, and the stumps were disappearing by rotting.

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In the year 1829, cultivated reclaimed land as usual in corn, except that we only left two stalks in the hill to try to prevent the fodder from firing, which has always taken place before we could gather it all, but still it fires too soon for us. Made a very good crop of corn this year, seven hundred and sixty three barrels merchantable corn; seventy barrels short, but sound, fed to hogs; some twenty or thirty barrels of rotten corn, besides the above—price of corn this year $1.80 per barrel; value of swamp corn $1373.40. As I have neglected to mention the mode of cultivation, I will now do it. My reclaimed land is too low and wet to plough, except ten acres on the margin of the highland, so that we have to cultivate all of it except the above ten acres, entirely with hoes, which is done in the following way: The land is laid up every winter in six feet beds, with hoes, and well ditched and water-furrowed from one end to the other, so as to make it as dry as possible. We plant it as soon as possible in the spring, (which is generally the last of April or first of May,) two feet between every hill on the six feet beds, thinning out to two and three stalks to the hill. We begin to weed the corn broad-cast as soon as any grass or weeds appear. We generally get over it twice before harvest, and then the growth of corn is so rapid that it overshades the land, and keeps the grass and weeds under, so that the cultivation of this sort of land is much less laborious than any one would suppose from not being able to use the plough, provided you begin to weed as soon as any grass or weeds appear: but if you let them get the start of you, you may bid adieu to your corn, for all the hoes in Virginia would not save it.

In 1830, began to plant corn on reclaimed land on 20th April, and finished on 30th; cultivated as usual; we had a wet season, and bad for swamp land. Crop made this year, by journal, five hundred and fifty barrels of merchantable corn; seventy barrels of short corn fed to hogs, and fifty of rotten corn. I will here remark that this kind of land always has much more short and rotten corn than highland, and never turns out so well as the appearance of the crop, while growing, would induce you to suppose. I have often been told by persons who saw the crop while in the tassel, that it must make eighteen or twenty barrels to the acre, so luxuriant was the growth; but the best crop I ever made, was ten barrels and a half to the acre. But the beauty of this land is, that it will last for ever without manure, provided you keep the water off; and if ever it sinks to low water mark, which I believe it will, after a long while, why we can but use the pump as they do in Holland. It has now sunk about eighteen inches. Price of corn in 1830, $3.70 per barrel, and value of swamp corn $2035.

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rect estimate can be made,) should be deducted from the foregoing balance of $5600, to show the clear profit.

I ought here to remark that I have been obliged to add a foot to the height of the dike every year since it was reclaimed, and the year it was so wrecked, I had to add two feet, and yet the dike is now only one foot higher than it was first made—that is to say seven feet, so great is the settling of the dike. The general surface of the land since reclaimed has sunk about eighteen inches.

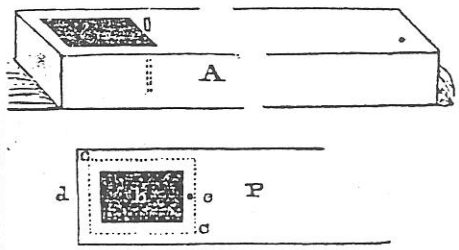
I have not been as much annoyed by muskrats as I expected, from the circumstance, I suppose, of our constant attention to the dike, and the constant working of the hands during summer, in the crop, and winter on the dike, so that the muskrats are scared off. A man goes all around the dike every day to see whether there are any muskrat holes, and marks them wherever he finds them; and every now and then we select a low tide, and cut them out, and stop them up carefully, which keeps them sufficiently under for all purposes. I think the swamp mud is better for making a dike that is liable to the waves of the river or creek, than highland earth, as it is much more tenacious and less apt to be washed by the waves: and when a muskrat cuts through the swamp mud, it never washes larger. I have known a hole which could not be stopped out, for want of time and low tides, remain the same size for months at a time,—so soapy and tenacious is our swamp mud; and but for its settling, it would be the very best material for dikes. When my dike was overflowed, if it had been of highland earth, or sand, it would have been all washed away—but the swamp mud stood it like wax, and only broke in the weaker parts. To future reclaimers of swamp lands I would advise the leaving a very wide margin of land between their dike and the river or creek, to furnish mud to repair and raise these dikes with, as well as to break the waves off; and never to dig a pit or hole, nearer than thirty or forty feet, (the farther the better) from the dike, as all pools or holes of water near the dike attract muskrats. Also never allow any earth or mud to be taken from the inside of your dike, as that is ruinous—for if you have any sink on the inside, the water will remain in it frequently, and will attract the muskrats; for wherever there is water, they cut a hole through the dike to communicate with it. The greatest security against them is to have your reclaimed land free from water, on the inside at least—have no ditches near the dike if it can be avoided; but if you are obliged to have ditches, let them run perpendicular to your dike, and not parallel, so as to present the least surface of water, and thus offer as little inducement as possible to the muskrats to cut through the dike. Build the dike of the mud or earth from without, and take it as far off from the dike as possible. With good planks and wheelbarrows, it is almost as easy to take the mud from fifty, sixty, or one hundred feet, as nearer, and you will save by it in the end. The further off you go for your mud the better.

HILL CARTER.

[NOTE A.]

The trunks to let off the rain water, or any water which collects on the reclaimed land, are made in the following manner: For a dike sixteen feet at the base, take two pine planks, twenty six feet long, fourteen inches wide, and two inches thick at least (three would be better,) for the sides of the trunk: then with plank of the same thickness, sawed into lengths of twenty-two inches, nailed on the bottom and top of the side planks, with close joints, make a trunk, leaving one end open and the other closed. Then about four inches from the closed end of the trunk, on the top, cut a hole eighteen inches long, and twelve inches wide, to let the water through. Place a valve or door on the underside of the hole of the trunk, four inches wider and four inches longer than the hole, which will float up to the hole and close it, when the water is higher on the outside than the inside; but when the water is higher on the inside, it will sink by the pressure of the water, and let it off from the reclaimed land. The valve or door is kept from getting out of the trunk by a perpendicular pin, put through the top and bottom of the trunk, and near enough to the hole to make the valve rise just under it, and close it. The valve or door should be made of two pieces of plank pinned together, one on top of the other, with the grain of the wood of each crossing that of the other, to keep the valve from splitting.

The trunk is then placed in a ditch cut through the dike to receive it, about half a foot below low water mark, to keep it always immersed in water, (which keeps it from rotting,) with the valve end on the inside of the dike, and the open end on the outside of the dike.



A.—The trunk.
P.—Horizontal plan of the top of the trunk.
b.—Aperture for the descent of water.
cc.—Floating valve, which rises to the aperture b, and excludes the flood tide.
d.—The closed end of the trunk.
e.—Upright pin, to secure the valve in its place.

[NOTE B.]

It is much better, I think, not to grub up and burn the stumps and roots, on first clearing swamp land, except in the list where you plant the corn, for several reasons. In the first place, it reduces the surface very much, which is very desirable should not be done. In the second, the stumps and roots keep a great deal of the ground from putting up in grass and weeds, and save that much labor in weeding; and third, the stumps and roots rot much sooner in swamp than in high land, and you get rid of them soon enough without the endless labor of grubbing them up. They will all disappear in four or five years, where the land is cultivated every year; and the land will not require bedding sooner than that, as it does not sink much until the stumps and roots decay.

H. C.