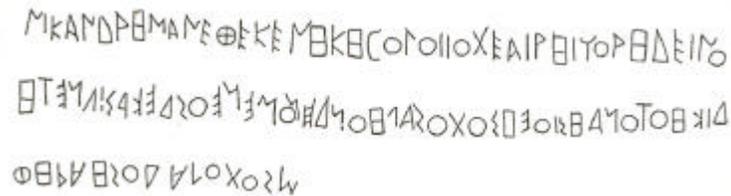


WHY BOUSTROPHEDONIC?

The Marshall Amendment
Sec. 2, Act of May 18, 1796

The Ancient Greeks (3000 B.C.-500 B.C.) developed their writing in various methods. One system, called Boustrophedon, arranged the letters to read from right to left, then left to right and back right to left, etc. Often the words read left to right then right to left, etc. Boustrophedon is a Greek word, translated as, "like an oxen plowing a field." An example of boustrophedon, inscribed on a statue on the island of Delos, in the Cyclades, reads from left to right, then right to left, thus:



That inscription has been interpreted to read in about the following manner:

NIKANDRA DAUGHTER OF DEINODIKES THE NAXIN A MAID BEYOND COMPARE
EHT EM OT DETACIDED SOXARHP FO EFIW WON SENEMONIED FO RETSIS
FARDARTING GODDESS WHO DELIGHTS IN ARROWS

I have no difficulty in believing that, had I been taught, beginning in the first grade to read in that manner it would not be strange at all. But, with the further development of alphabets the system became obsolete, and only a few languages still retain some similarities to the Greek boustrophedon style.

THE LAND BILL

The Congress of the Confederation enacted an Ordinance on May 20, 1785, which provided for the survey and sale of the lands north of the Ohio River and west of Pennsylvania, and instituted the Rectangular Survey System of townships six miles square, divided into 36 "LOTS" of one square mile. The LOTS were numbered according to the following diagram:

The lands in the "Seven Ranges" and Ohio Company Purchase were surveyed into Townships and Lots in compliance with the Land Ordinance. However, the land sales in the Seven Ranges languished due to lack of dividing lines within the townships and the fear of Indian attacks. The federal government was weak and could not provide protection from the Indians. The Indians were defeated by an army led by General "Mad" Anthony Wayne, in a decisive battle at Fallen Timbers, (near Toledo, Ohio) in August 1794. By the Greenville Treaty of August 3, 1795, the United States acquired undisputed title to about three quarters of Ohio. When the Constitution was ratified, a strong federal government was formed in 1789. The Land Ordinance was obsolete. A new land Law was needed to correct the deficiencies of the Land Ordinance and provide for

LAND ORDINANCE - 1785

36	30	24	18	12	6
35	29	23	17	11	5
34	28	22	16	10	4
33	27	21	15	9	3
32	26	20	14	8	2
31	25	19	13	7	1

the survey and sale of the lands acquired by the treaty.

On December 17, 1795, the matter of a land law to dispose of the U.S. lands in the territories was brought up in the House of Representatives and a committee was appointed to draft a bill for consideration. The committee members were: William Smith, South Carolina; John Nicholas, Virginia; Thomas Hartley, Pennsylvania; Aaron Kitchell, New Jersey; and Henry Glen, New York. Mr. Smith was chairman.

Who actually drafted the first proposal is not revealed in the records available. The draft bill was read the first and second times in the House on January 26, 1796, and taken up for debate by the House as a whole on February 15, 1796.

The debates were centered around using a township system (ala Seven Ranges) or indiscriminate location, i.e., let a purchaser select the "best" land, have it surveyed and a patent issued after the survey was approved. That was the system used by all of the states then in the Union. It was prone to gaps, gores and overlaps, thus a fruitful source of income for lawyers in land disputes. The intention was to sell to the highest bidder, with a minimum price fixed by law. The House was about equally divided in the various arguments. Many members wanted it sold in small tracts so that the "small guy" could buy. Others wanted to sell large tracts and let the buyer (speculator) divide it up into individual holdings. All agreed that the land had to be surveyed before patent would issue, but the cost of surveying into small tracts (lots) was a major issue.

Since the discussion here is about the 2nd section of the final act; the following is the original section that was submitted by the committee:

Sec. 2. And be it further enacted, that the part of the said land which has not already been disposed of and which has not already been divided, in pursuance of an ordinance of Congress passed the twentieth day of May, in the year one thousand seven hundred and eighty five, shall be divided by parallel lines, running at right angles to each other, so as to form townships of six miles square, where the nature of the country will admit of such division; and all fractional parts of townships occasioned by the irregularity of the exterior lines, or by water courses, shall be annexed to and fold with the entire townships or tracts of sections to which they may be contiguous, and the corners of the said townships shall be marked with progressive numbers from the beginning; and each distance of a mile between the said corners, shall also be distinctly marked; and that one half of the said townships, taking them alternately, shall be subdivided into tracts, containing as nearly as may be, six hundred and forty acres each: and that one half of the said six hundred and forty acre tracts, taking them alternately, shall be subdivided into tracts of one hundred and sixty acres each, by marking lines on each side of the lots, at every half mile distance, and drawing lines through those points, on the maps of the land: that all lines shall be measured by chains, containing two poles or perches of sixteen and a half feet each, subdivided into twenty-five equal links; and the chains shall be adjusted to a standard to be kept for that purpose: that four fair plats shall be made of the townships and parts of townships contained in the said lands, describing the subdivisions thereof, and the marks of the several corners; and the lines of the said plats shall be reported, according to the true and not the magnetic courses; and two of the said plats shall be sent to the Secretary of the Treasury.

After debating the bill and making a great many amendments, the full house passed their version and sent it to the Senate on April 6, 1796. Section 2, as sent to the Senate, read as follows:

5.2 Be it further enacted, That the part of the said lands which has not been already conveyed by letters Patent, or divided in pursuance of an Ordinance of Congress passed on May 20th of May 1785, or which has not been heretofore, and during the present session of Congress may not be appropriated for satisfying military land bounties, shall be divided by North & South lines run according to the true meridian, and by others crossing them

at right angles so as to form townships of six miles square, unless where the line of the late Indian purchase, or the course of Navigable rivers may render it impracticable & then this rule shall be departed from no farther than such particular circumstances may require. The corners of the Townships shall be marked with progressive numbers from the beginning; each distance of a mile between the said corners shall be also distinctly marked with marks different from those of the corners. One Half of the said Townships, taking them alternately shall be subdivided into Sections, containing as nearly as may be six hundred and forty acres each by delineating throughout the same, upon the plat herein after directed to be made, parallel lines at the end of each mile. The fractional parts of townships shall be divided into Sections in manner aforesaid, and the fractions of Sections shall be annexed to and sold with the adjacent entire Sections. All lines shall be plainly marked by blazes upon trees, & measured with chains containing two perches of sixteen feet & one half each subdivided into twenty five equal links & the chains shall be adjusted to a standard to be kept for that purpose. Every surveyor shall note in a field book the true situations of all mines, salt licks, salt springs, & millseats which shall come to his knowledge, all watercourses over which the line he runs shall pass, & also the quality of the lands. These field books shall be returned to the Surveyor General who shall therefrom cause a description of the Whole lands Surveyed to be made out and transmitted to the officers who may superintend the sales. He shall also cause a fair plat to be made of the Townships and fractional parts of the townships contained in the said lands, describing the subdivisions thereof & the marks of the corners. This plat shall be recorded in books to be kept for that purpose, a copy thereof shall be kept open at the Surveyor General's office for public information, and other copies be sent to the places of sale and to the Secretary of the Treasury.

It will be noted that the term "lots" or "tracts" has been changed to "SECTIONS". The available record does not indicate why or by whom that change in terminology was made. The section calls for alternate townships to be fully subdivided into thirty six "sections", instead of 160 acre "tracts", thus bowing to the economists in the House

The House Clerk hand carried the House bill to the Senate on April 6th and it was read for the first time in that body. The bill was read in the Senate the second time on April 7th. On April 8th the Senate referred the bill to a Committee, composed of James Ross of Pennsylvania; Rufus King of New York; John Brown and Humphrey Marshall of Kentucky, and Caleb Strong from Massachusetts. Ross was Chairman of the Committee.

On April 27, 1796, Ross reported back with amendments, which were read, and were ordered printed for Senate use. The Senate resumed discussion on the bill on May 4, 5 and 6th. A vote was taken on the 6th of May and resulted in a tie vote, 11 yea and 11 nay. John Adams (President of the Senate) voted for the amended bill and it passed. The amended bill was sent back to the House. The House subsequently concurred and the "Land Bill" became law on May 18, 1796. Section 2 of the bill, as enacted, reads as follows, with the Senate amendment(s) highlighted in dark type:

Sec. 2. *Be it further enacted*, That the part of the said lands, which has not been already conveyed by letters patent, or divided, in pursuance of an ordinance in Congress, passed on the twentieth of May, one thousand seven hundred and eighty-five, or which has not been heretofore, and during the present session of Congress may not be appropriated for satisfying military land bounties, **and for other purposes**, shall be divided by north and south lines run according to the true meridian, and by others crossing them at right angles, so as to form townships of six miles square, unless where the line of the late Indian purchase, **or of tracts of land heretofore surveyed or patented**, or the course of navigable rivers may render it impracticable; and then this rule shall be departed from no further than such particular circumstances may require. The corners of the townships shall be marked with progressive numbers from the beginning; each distance of a mile between the said corners shall be also distinctly marked with marks different from those of the corners. One half of the said townships, taking them alternately, shall be subdivided into sections, containing, as nearly as may be, six hundred and forty acres each, by **running through the same, each way, parallel lines, at the end of every two miles; and by marking a corner, on each of the said lines, at the end of every mile; the sections shall be numbered respectively, beginning with the number one, in the northeast section, and proceeding west and east**

alternately, through the township with progressive numbers, till the thirty-sixth be completed. And it shall be the duty of the deputy surveyors, respectively, to cause to be marked, on a tree near each corner made, as aforesaid, and within the section, the number of such section, and over it, the number of the township, within which such section may be; and the said deputies shall carefully note, in their respective field-books, the names of the corner trees marked, and the numbers so made: The fractional parts of townships shall be divided into sections, in manner aforesaid, and the fractions of sections shall be annexed to, and sold with, the adjacent entire sections. All lines shall be plainly marked upon trees, and measured with chains, containing two perches of sixteen feet and one half each, subdivided into twenty-five equal links, and the chain shall be adjusted to a standard to be kept for that purpose. Every surveyor shall note in **his** field-book the true situations of all mines, salt licks, salt springs and mill seats, which shall come to his knowledge; all water courses, over which the line he runs shall pass; and also the quality of the lands. These field-books shall be returned to the Surveyor General, who shall therefrom cause a description of the whole lands surveyed, to be made out and transmitted to the officers who may superintend the sales: He shall also cause a fair plat to be made of the townships, and fractional parts of townships, contained in the said lands, describing the subdivisions thereof, and the marks of the corners. This plat shall be recorded in books to be kept for that purpose; a copy thereof shall be kept open at the Surveyor General's office, for public information; and other copies sent to the places of the sale, and to the Secretary of the Treasury.

TOWNSHIP DIAGRAM
Act of May 18, 1796

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

The highlighted portion of the section is attributed to Humphrey Marshall, hence the "Marshall Amendment", which changed the numbering of the sections in a township to a BOUSTROPHEDONIC system, still in use today. WHY??

The Marshalls

Thomas Marshall had an estate in Westmoreland County, Virginia, which was left (upon his death) to his eldest son William. His second son, John, married Elizabeth Markham and they had four sons: Thomas, John, William and Markham.

Thomas married and became the father of John Marshall; (who became Chief Justice of the U.S. Supreme Court) Louis; Alexander, Mary and Nancy.

John married Mary Quisenberry and became the father of Humphrey Marshall, and many more children.

Thomas and John moved to Fauquier County, Virginia, where their children were born. Humphrey Marshall was born in 1760 and raised with all of his siblings and cousins as a "Marshall Clan" (my term). There were no "public schools", (as we know them today) so all of the Marshall children were "home schooled", though they may have had an occasional tutor. Therefore I seriously doubt that Humphrey Marshall was exposed to any ancient Greek writing practices.



Humphrey Marshall served in the Virginia Regiment of Artillery during the Revolutionary War, attaining the rank of Captain. For his three years of service he was given a military land warrant for 4,000 acres.

In 1779 John Marshall (Humphrey's father) had moved to Bourbon County, Kentucky. Thomas

Marshall (Humphrey's uncle) had served as a Colonel of Artillery in the Virginia Regiment, which dissolved in February 1781. Col. Thomas Marshall was appointed to be Surveyor for Fayette County, Kentucky. Thomas Marshall made Humphrey Deputy Surveyor of Fayette County, to where they moved in 1782. Humphrey used his 4,000 acre land warrant to locate lands in Kentucky and with his connections as Deputy Surveyor soon became a wealthy man.

In 1784 he returned to Virginia and married his cousin Mary, daughter of Thomas Marshall. Thus his uncle Tom became his father-in-law and his cousin John (who later became Chief Justice Marshall) became his brother-in-law.

While he was Deputy Surveyor he studied law and began to practice as a lawyer in about 1785. In 1790 he became Surveyor of Woodford County. When Kentucky became a state in 1792 Humphrey Marshall was elected Senator to represent Kentucky.

From the end of the war until it became a state, a great many Kentuckians advocated for political alignment with Spain instead of the U.S. Humphrey Marshall supported statehood with the U.S. which made him very unpopular. John Brown, his fellow Senator, supported alignment with Spain. In 1794 Chief Justice, John Jay, negotiated a treaty with Great Britain, known as the "Jay Treaty". Brown opposed that Jay Treaty and Humphrey Marshall supported it, and voted for ratification in the Senate. The treaty was ratified but it angered Brown to the point of hating Humphrey Marshall with a passion.

JOHN BROWN was born in Virginia in 1857. He was studying at Princeton until interrupted by the Revolution. He served under George Washington during the war and continued at William and Mary after military service. He moved to Kentucky in 1782. He became a Senator in 1792. His biography does not reveal that he had ever studied about ancient Greece.

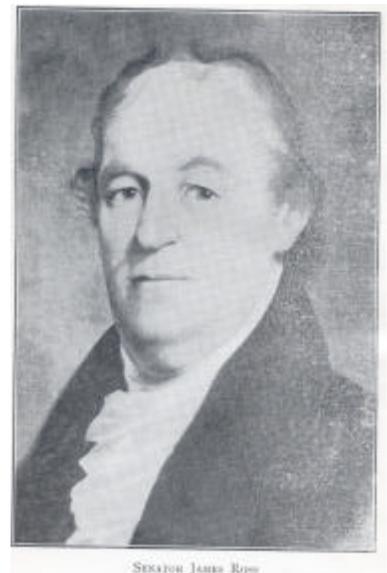
RUFUS KING was born in Scarborough, Maine, in 1755. He graduated from Harvard in 1777. His military service was very brief. He was admitted to the bar in 1780. He helped frame the U.S. Constitution as a delegate from Massachusetts and helped frame the 1787 Northwest Ordinance. He married and moved to New York and was chosen by the New York Legislature to be a Senator from that state, in July 1789. King's forte was in finance and he supported the policies of Alexander Hamilton, the Secretary of the Treasury. King became a director of the Bank of the United States in 1791. He was appointed Minister to Great Britain by Washington about the time the Land Bill was enacted. While King probably had input about the land sales, etc., I doubt he had anything to do with the "Marshall Amendment".

CALEB STRONG was born in Northhampton, Massachusetts, in 1745. He graduated from Harvard in 1764 and was admitted to the bar in 1772. He became County Attorney for Hampshire County in 1776. Strong was a vocal supporter of the Constitution and was appointed Senator in 1789. He became governor of Massachusetts in 1800. Nothing in Strong's biography indicates that he knew anything about Land Surveying or ancient Greece.

That leaves the Chairman of the Senate Committee.

JAMES ROSS

James Ross was born July 12, 1762, near Delta, York County, Pennsylvania, the son of Joseph and Jane (Graham) Ross. As a boy he studied the classics at Slate Ridge Presbyterian Church School at Pequea,



Pennsylvania, about 25 miles north of his birth place. He intended to enter the ministry, and because the Bible was originally written in Greek and Latin he studied those languages. In 1780 he was persuaded by Reverend John McMillan, a close friend of the Ross family, to go to McMillan's Academy, near Canonsburg, to teach Greek and Latin. That school is now Washington and Jefferson College, Washington, Pennsylvania.

While at McMillan's Academy he was persuaded by Hugh H. Brackenridge, a Pittsburg lawyer, to take up the study of law. (Certainly an education in Greek and Latin would help in that field.) In 1782 he began studies at the College of New Jersey, now Princeton. He returned to Washington County, Pennsylvania in 1784 and was admitted to the bar in that County that year.

Ross specialized in land cases. The metes-and-bounds system and relatively poor land surveys and descriptions were fraught with disputes and Ross soon acquired a large practice. He moved to Pittsburg in 1795. He was attorney for George Washington's estates in western Pennsylvania. In 1789-90 he was a member of the committee to frame a Pennsylvania Constitution. In 1794 Washington appointed him a member of the federal commission to settle the Whiskey Rebellion. Also in 1794 the Pennsylvania Legislature elected him to replace Albert Gallatin as Senator in the U.S. Congress. Gallatin was disqualified on the grounds that he had not been a U.S. citizen for the required nine years. He was elected to the House of Representatives by popular vote in 1794 and vigorously debate the Land Bill in that body. Gallatin later became Secretary of the Treasury after Aaron Burr shot Alexander Hamilton, in July 1804.

With his expertise in real estate law and proven ability to negotiate disputes, it is not surprising that the Senate made Ross Chairman of the Senate Committee for the Land Bill.

So Why Boustrophedonic?

Now I am definitely monolingual and not a thaumaturge. I often draw conclusions based on my own experiences.

I was educated in a one room country schoolhouse in northern Minnesota. The room was about 30 feet square, contained eight grades of students, the teacher and her desk, the heating stove and "library", which had very few books. In about the 4th grade the subject of ancient history was introduced. We studied about the Seven Wonders, the Greeks, Romans, Attila the Hun, China, the Egyptians, etc., etc. The whole subject fascinated me and I became engrossed in the pictures of ancient ruins, including the Parthenon, Roman ruins, and in particular the ruins at Palmyra, in Syria. My life's goal, at the age of nine, was to become an archaeologist, go see and dig up those old ruins. My dad noticed this unusual activity of mine and asked me about it one day. I told him of my "ambition" and he pointed out to me that archaeology was a very narrow field, not many such jobs were available and it didn't pay very well either!! My fascination soon waned and I decided to become a trapper in the Yukon instead. Well, as you know, I became a Land Surveyor, which may be part archaeologist, digging up and/or searching for old survey corners instead of Greek ruins.

My theory is that James Ross had an ambition to become a Christian Minister. The earliest parts of the Old Testament were written in Aramaic or Hebrew. Those parts were translated into the Greek language. The New Testament was originally written in Greek. St. Paul wrote all of his letters (Epistles) to the Ephesians, Galatians, Corinthians, etc., in Greek. Although Paul was a Jew, he was also a citizen of Rome, so had to know Latin. But Greek was the "common language" of the time. If one wanted to study the early Bible, it would be imperative to be able to read Greek and Latin. Ross probably became fascinated with or became engrossed in the study of those languages. He was therefore capable of teaching them to students at McMillan's Academy. But Brackenridge pointed out that his childhood ambition didn't pay very well, and suggested the study of law instead. Certainly (as we all know now) a good knowledge of Greek

and Latin are strong points of lawyers.

I believe that James Ross as Chairman of the Committee and his knowledge of land law was a leader in proposing amendments to the Land Bill. We also know that lawyers (as well as doctors) have notoriously illegible handwriting. Marshall was a former Land Surveyor, who had to write at least well enough for people to read his work. The "Marshall Amendment" is legible which proves that contention. I think Ross dictated the amendment and included a twist from his knowledge of Greek, numbering the sections boustrophedonically. Certainly the numbering system of 1785 made more sense because when we subdivide a township we first run north between sections 35 and 36, whereas the original numbering had the first line along the west boundary of section one, a logical sequence.

So it is my conclusion that James Ross was responsible for the numbering system of the sections in a township, based on a preponderance of the evidence. It is not beyond a reasonable doubt.

C. Albert White

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