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Mankind's Most Useful Invention

by Ernest L. Martin, Ph.D., January 1983
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Read the accompanying Newsletter for February 2015

"Mankind's Most Useful Invention" may seem a strange title concerning a biblical matter, but it has a great deal of bearing on a most important aspect of biblical studies. One discovery must rank as one of the most outstanding accomplishments of mankind, and I will tell you that discovery. First, comments must be made on other important discoveries that caused our modern civilizations to develop. They tell us something about mankind's psychological makeup, and how at one time mankind thought in one way and later psychologically thought differently than before.

This may seem confusing, but let me explain. There are times when people have thought along certain lines at the expense of better ways of thinking. You and I wonder why they thought in the old way. When you study the history of the world and think about the scientific discoveries that have been made, you wonder why they were not discovered years before. Many simple innovations should have been discovered much earlier, discoveries even a grade school child could have made. Yet our ancestors were as smart as you and I.

People living in Moses' time, or even going back to Abraham's time and coming down to the times of David and later Jeremiah, and even 2,000 years ago, there was quite a sophisticated society here on earth. When Christ was introduced to the world, He came when Greek science, Greek philosophy, and a number of other accomplishments had been done, which we admire today. Much of our civilization is based upon things coming from the period of Alexander the Great or later. Yet they thought differently than we do today. They had the same type of minds we have, but their psychological processes were different than ours. They thought about things that we are not much concerned with today.

This is one reason it is difficult for us to appreciate the New Testament or the Old Testament. Those who wrote the books of the Bible viewed things differently than we do today. Things you and I complain about today, being reared in a Western civilization environment, would have no meaning to them. The best way to understand the Bible is to try to see things the way they saw them. There were psychological differences, attitudes, or approaches in the older periods, from what we have today. That is why some inventions you and I are familiar with were not discovered until modern times. Let me give an example from the smartest man who ever lived, according to the Bible. That man was Solomon.

Solomon's Wisdom

No one had more wisdom than Solomon. He was a great scientist in his time. You cannot read the Book of Ecclesiastes without understanding he was the man who wanted to discover what life was all about, what made things tick. He was very curious, and he set out to make all types of inventions. The funny thing about it is this, the inventions Solomon made, and he might have made some that did not come down to us because perhaps there was no need for them back then, but the ones that would have really been useful, it seems even he was not interested in them at all. I mean useful things from our point of view.

I wonder why Solomon did not make some kind of a vehicle by which he could to go down to Jericho from Jerusalem, which is at the top of the Judean hills, about 2,600 feet above sea level. East of Jerusalem is the Dead Sea and the Jordan River, about 18 miles away. Near the Jordan River is the city of Jericho, about 800 feet below sea level. If you and I were back in Solomon's time, knowing what we know today, we could tell him a few things to make things easier for him.

I would tell him, Solomon, since you are king and you have all the riches you need, and people need to work, you have understanding to make a simple gradient down the mountain slope round and round at a particular rate of descent going to Jericho. Furthermore, we have clear evidence they were able to work with iron in those days (not good quality, but they could work with it). All you have to do is to get a small rail system, with wooden ties underneath, connect the rails to them, keep the same distance or gauge between the rails, and make a small cart with four wheels. On the wheels, make small flanges so it will stay on the track. Put the brake with a lever and a shoe on the wheels so you can slow down and stop. With the man-power Solomon had available, construction would not take more than a year for a simple project like that.

Then if he wanted to get to Jericho during the winter when it is cold and even snowy in Jerusalem, and Jericho was sunny and very pleasant, Solomon could get in the little cart, release the brake, and it would begin to roll. He would not need an engine. Within two hours' time on the track, he would be in Jericho. Otherwise, if he would ride a horse, a donkey, or walk, it would take all day, as opposed to two hours.

They did not have an engine to go back up at that time, so a horse would have to bring the thing back to Jerusalem. Even better, ride in the carriage while the horse pulls you, relax, and have a good time on this small railway. To me, that is one of the first things I would suggest to King Solomon. He never thought of anything like that, and neither did anyone else. That has always amazed me. Why did they not think of conveniences you and I think of today? To build a great building like a temple or a large palace with all the beautiful furniture, they were able to do that, but even then, they could have built things better.

Other Inventions — Steam, Oil, Coal, and the Stirrup

Another thing, why did they never think to invent the steam engine? A steam engine is a simple device. We have evidence that steam was used as early as the 2nd century BC to propel toys, small brass globular constructions with small vents and bent tubes around the circumference. Put water in it, heat it and soon it begins to make noise and go round and round. They never thought of using it for motion, for trains, or industrial uses, but they used it for toys. Why did they not use steam power back then? They could have invented such things early on, but they never thought of them. Why did people generations ago not think of such things and put them into effective use?

Take oil and coal as another example. Oil, called naptha, was known in the old days. They knew it could be used for burning in the earliest periods. It was never used, that we know of, on an industrial level. The same thing with coal. There was an abundance of coal in the Middle East and northern Europe, especially in Italy. Coal was hardly used except a little here and there. It was never used for industrial purposes on a major scale. Of course, when the industrial revolution took place about 300 years ago, then coal and finally oil and other energy sources became important to all of us. In the modern world that continues.

What about the invention of the stirrup that attached to a saddle? Saddles are very useful when put on the back of a horse. You sit on the saddle. Have you ever thought of having a saddle without stirrups to put your feet in? They had saddles in the time of Christ, they had them 100, 200 years later, but the stirrup was

not invented until the 8th century AD. That is 700 years after Christ. You can look at the ancient monuments of Assyria, or Egypt, or Greece, or Persia, or Rome, and there are people sitting on horses with their legs dangling down. They had no stirrups.

Stirrups were invented at a crucial time in the history of Western civilization, at the time of Charles Martel, the grandfather of Charlemagne. The Moslems invaded North Africa, came across the Pillars of Hercules at the Straits of Gibraltar, and finally came into Iberia or Spain. They conquered Spain in about three years' time. Here were the Pyrenees Mountains between Spain and Gaul, France today. The Moslems crossed over to conquer France. Charles Martel came up with a very smart idea. He put stirrups on all his cavalry saddles, leather thongs coming down and a place to put feet. Anybody could have thought of that hundreds or thousands of years ago, because it is a very effective way to ride a horse.

When the great battle of Poitiers took place in 732 AD, the Moslems were routed from France and fled south of the Pyrenees Mountains. Historian Edward Gibbon and others said if the Arabs had won that battle at Poitiers, instead of there being a Christian church called St. Paul's Cathedral in London, there would have been a mosque. Stirrups on their saddles won that crucial battle.

It was simple. Charles Martel's cavalry was able to stand in their saddles and brace themselves, and turn supported from side to side with sword and spear. The Moslems on their horses advanced, having far superior numbers. They did not have stirrups to increase the shock of their attack. They were knocked off their horses by Charles Martel's cavalry. It was a disaster as far as the Moslems were concerned. A small invention like the stirrup helped save Western civilization from Moslems.

Lubrication and the Industrial Revolution

I will tell you the number one thing that introduced the industrial revolution or brought it up-to-date. That was the use of lubrication. How to lubricate things was always a difficulty. Remember the steam engine? That was fine for toys because there was no pulling power to it. They put a little goose grease where the bearings were, and that would be sufficient. When they built it a little bigger, it would burn up. They lacked proper lubrication. There needs to be a definitive historical study on the subject. Lubrication was a very important discovery. But this is still not mankind's most useful invention.

Going back to the Bible, the only way they could lubricate chariots and wagons was to use animal fat, principally goose grease. Sometimes, if they were Gentiles, they would use lard. There were vegetable fats they could use, but they were more expensive. They would rarely use olive oil, again because of the expense. They would use that in cooking and lighting, but not for lubrication. They used goose grease. To keep bearings working you had to have them properly lubricated. They did not know how to process naptha (petroleum) at that time. When ancient chariots of Rome are shown on monuments, many times you will see fire coming from the hubs of the chariots. Some thought it showed how fast they were going. It does show that, but they could go just a few miles or they would burn up because of improper lubrication.

From a biblical point of view, at the Exodus when Moses led the children of Israel out of Egypt, they came to the Red Sea, which opened up and the Israelites walked through. If you read Exodus chapter 15 carefully, when Pharaoh, his horsemen and his chariots went into the Red Sea and got into the middle, it says the hubs of their chariots began to be congealed, or burn up. They could not go farther. About 100 miles is about all a chariot could go in ancient times, and they would need to redo the whole housing of the axels because they did not have proper lubrication. The discovery of how to lubricate things was what brought in the industrial revolution with steam engines, leading to jet aircraft and all other machines we have today. Proper lubrication is most important.

I gave this introduction about these inventions to make us wonder why they did not discover them before. It takes some act of genius to come along and see why something is needed. Do you know the most useful invention that has been given to mankind up to today? It was none of the things I have presented so far. They are all important, but the most important invention allowed people to learn lubrication by comparing notes with others. It was also true of the stirrup. The year after the Battle of Poitiers, every Arab cavalry-

man had stirrups on their saddles. The idea caught on quickly and stirrups soon appeared in India. And it took acts of genius for innovators to come up with these ideas.

The Most Important Invention

The one invention most important of all to our modern period, important in the sense of allowing for the accumulation and dissemination of knowledge is the invention of the book. Writing is very important and it had been known for hundreds of generations. People first wrote on clay tablets, clay potshards, and wood. Then writing began to be done on vellum made from an animal skin yielding a surface of 2 feet by 1 foot, which could be rolled in some cases. One skin could be stitched to another, then another, etc. Because of the stitching effect, they could only be about 25 to 35 feet for one scroll.

About the 3rd century BC, it was found that writing could be put on paper made from papyrus plants. They had known about papyrus for a long time in places like Egypt. "Papyrus" is the origin of our word "paper." Far cheaper than skins, it was still expensive to produce. Before the 1st century AD they would use scrolls to write on. (Ezekiel speaks about scrolls written on both sides, Ezekiel 2:9–10.) All the New Testament books were originally written on scrolls. You would have a metal or wooden rod of some kind and take the stitched-together skins, wrap one around one rod, have another rod on the other side, and wrap the other end around the second rod. Then pull and roll one side to the other for reading.

For example, scholars know that the Gospel of Luke is 24 chapters long followed by the Book of Acts with 28 chapters. Both are about the same length. Luke used one scroll for his Gospel and another for Acts. Look at the Book of Revelation. It was written on a scroll front and back (Revelation 1:11, the common Greek term *biblion* means "scroll"). There is no question about that. I ask you, have you ever thought about opening up a scroll to read its writing? A scroll, a big scroll, especially if made of vellum, of skins, would be very, very heavy, several pounds. You would have to carry it under your arms. It is cumbersome, difficult to transport, and very, very expensive. It is almost impossible to mass produce items like that in a way many people could own or possess.

In the 1st century AD a major invention took place. Scholars today found this invention came from a particular source. It can almost be pinpointed where it came from. The first books, that is, the form of books you and I know today, like the Bible in my hands, has two covers to it, one on the front, one on the back. It has a spine as well. Its pages inside are stitched together with printing on both sides. It is very convenient to hold, to transport, and it could be made out of paper. It could be made out of skins if desired. Some early manuscripts of the Bible were skin.

My Bible is paper and I have 1,350 pages which I can hold in my hand. It is very convenient. You can also paginate it, and you can put verses, chapter, and all other types of notation. We can each have one. If I say, "Turn to Ezekiel 2:9-10," you can turn to it instantly. Carrying several scrolls would be difficult due to the bulk and the weight. You can, however, carry the whole Bible easily in a modern book.

The invention of the "book" style of written presentation was an ingenious invention. It has been shown that the people who invented it were none other than the first Christians. It comes from the Christian church, the *ekklesia*. This is called the codex style, in the plural, codices. Large-scale use of the codex style was first invented by the Christian *ekklesia*. The first codices we have available going back to the 1st century are from Egypt. They are from the Gospel of John and fragments of others.[1] I think this is most important for the canonization. We will see something in the Bible that will help show that the codex form of books was discovered at a particular time, just as the stirrup was discovered as a useful thing, and soon most everyone in the world knew about it.

Likewise, something happened in the 1st century, and I cannot pinpoint the person yet, but there is something in the Bible I want to share with you. It might help us see who was the genius that thought of

[1] See the Wikipedia article "Rylands Library Papyrus P52" for basic information on the oldest codex fragment. *DWS*

making the book so that information desperately needed at that time could be disseminated throughout the world. It was the New Testament.

The Apostle Paul in Prison

Go to the last chapter of the epistle of the apostle Paul, Second Timothy. We find something very important that could be the key to show us how the book, the codex, was invented. Paul wrote to Timothy from Rome. He was in prison, sentenced to be killed before winter. He knew he did not have long to live. He appealed to Timothy to come to him.

> **"Do your diligence to come shortly unto me: For Demas has forsaken me, having loved this present world, and is departed unto Thessalonica; Crescens to Galatia, Titus unto Dalmatia. Only Luke is with me."**
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> • ***2 Timothy 4:9–11***

Then Paul says, **"Take Mark, and bring him with you: for he is profitable to me for THE MINISTRY"** (in the King James Version). In the Greek it is, **"for a ministry"** or **"for a service."** Paul says bring John Mark with you, Timothy, because I have a particular service I want him to perform for me. That is a paraphrase, but that is its meaning.[2] John Mark was the secretary of, and the one who wrote for, the apostle Peter, as tradition has it plainly and hardly anyone I know objects to it. When Paul asked Mark to come, it was the same as asking for Peter. We do not know if Peter came, he only asked for Mark, but when you ask for the right hand man of someone, you are asking that man to come. See my point?

> **"And Tychicus have I sent to Ephesus.** [1] **The cloak that I left at Troas with Carpus, when you come, bring with you,** [2] **and the books, but** [3] **especially the parchments."**
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> • ***2 Timothy 4:12–13***

Paul wanted three things to be brought. He wanted the cloak, the books (the scrolls), and he wanted the parchments. He says he left the cloak in Troas. He could have left the books and parchments in Troas, or they could have been in Ephesus with Timothy. He wants these things brought to him for a special reason. He does not have very long to live, and he says in verse 21, **"Do your diligence to come before winter."** Then finally, **"The Lord Jesus Christ be with your spirit. Grace be with you. Amen"** (2 Timothy 4:22).

Because verse 21 says, **"Do your diligence to come before winter,"** some say he referred to verse 13 where he wanted that cloak **"left at Troas"** to keep him warm. That does make sense. But do you think the apostle Paul would have enough clothes at Rome to be warm? Maybe. He wants Timothy to bring Mark with him quickly before winter, and he wants especially that cloak he **"left at Troas with Carpus, when you come, bring with you, and the books, and especially the parchments."** The books mean documents from papyrus, paper like in our Bibles. The parchments were vellum from animal skins. What went on animal skins were very important documents. It cost a lot of money to have such things. Why does Paul want these literary materials before he dies? He insists Timothy bring Mark with him, which is like bringing Peter with him. Paul wants Peter to receive material he will send back with John Mark.

Verse 13 uses the word "cloak." It can mean a garment in which you cover yourself in winter or any time you want to keep warm. The word in Greek usually is associated with a type of a cloak which has no arms or sleeves, or just openings where you can put your arms through. It has an opening for the head and a cord to tie around you to keep the body warm, in other words, a covering. "Cloak" is a perfectly good translation. Why this matter of a cloak? This cloak is associated with books and parchments. John Chrysostom (Archbishop of Constantinople, lived c.349–407 AD) quoted this very verse. He said Paul was not after a cloak to wear, he was after coverings for books or parchments (Homily X. 2 Timothy 4.9–13). Fifty

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[2] The Concordant Literal Version has this translation for 2 Timothy 4:11: **"Luke only is with me. Taking up Mark, lead him back with you, for he is useful to me for service."** *DWS*

years later, Jerome, who lived in Palestine and knew Greek very well, said this Greek word was a technical term which meant, "book wrap." This is in context with what Paul wrote. It is a covering for books, or a kind of book wrap.

Think of things we talk about concerning a "book" today. My Bible has two covers. If I ask someone to bring the covers that I left in Troas, and later I say, it is getting to be wintertime, I might be talking about blankets or ponchos of some kind. I have covers on my bed, but the same word "covers" in English is used differently in two contexts. Covers of a book will not keep you warm in winter, but they keep books protected, secure, and the pages together. This Greek word means the same thing used in two different ways: sometimes used for a cloak or garment, and sometimes used for a cover of a book or a folio. We have all seen books with a wrapper or dust jacket; call it a wrap if you want. Same word, different meaning.

First came the cover, the wrapper, as a garment. When the book was invented, they used the same terms to describe the making of a codex. Several scholars have understood that it may not have been a cloak for warmth. Since it is associated with books and parchments, it could mean a type of a cover for a book. If so, it will not be scrolls, it will be in codex form. Here is what is suggested. Chrysostom and Jerome both say this was the meaning of the word. It could be what Paul left with Carpus at Troas and with Timothy were books and parchments? He also had a case, a folio, inside which he put these books, or leaves of a book. If you have that, all you have to do is take them out and stitch them together. Do so and you created the codex; you created the "book."

You might say, this is not much of an invention. Let me tell you, the creation of the codex form is the most important means of disseminating information, because you can put a lot more information in a codex form than you can with a scroll form. Besides, you can write sequential information on both sides of each sheet or page. You can also paginate the pages. By that I mean you can know where you are at any time, go back and forth, and efficiently go anywhere in that book. There are 1,356 pages in my Bible and I can turn to any one of those pages in 1 to 3 seconds. The creation of the "book" was a marvelous tool to disseminate knowledge around this world. Most all of the first codices or codex book forms we have found are part of the New Testament. It is most important.

The book form we have today went along with the creation of the canon of the New Testament. You would not have the New Testament without the book being invented. The book was invented either by the apostle Paul (and I am getting rather specific), or the apostle Peter, or John Mark, or all of them together, with God Almighty essentially saying, "Now boys, you are going to do it this way." That is the method by which the Bible was canonized.

The apostle Peter in his 2nd epistle, first chapter said, I know I will die soon and I will leave you with documents which will last you until the daystar comes, meaning Jesus Christ. He took the 14 epistles of the apostle Paul that John Mark brought to him in book form, and then Peter took the Gospels he had at the time, put them in book form, and sent them out to the *ekklesia* of Galatia, Pontus, Bithynia, and Asia. It says that in First Peter, and it goes along with Second Peter. He sent those documents written in codex form with two covers, a spine, and the pages stitched together, and the leaves paginated. If someone tries to put something else in there, it will be noticed. This is because the pages will be disturbed or disordered. That is **(1)** a secure way of handing something to a person, **(2)** it is convenient, and **(3)** it will stay intact.

A Brief History of the Old Testament

In the 5th century before Christ when Ezra the priest canonized the Old Testament, he did it in a remarkable way. They had scrolls at that time. There was great controversy in Ezra's time between the Samaritans in central Palestine and the Jews in the southern part over certain documents, whether they were from Moses or not. This information is in the non-biblical historical book called Second Esdras and other works. Ezra decided that he for all time would get rid of the heretical manuscripts the Samaritans were trying to perpetuate. The Samaritan documents were in the old Hebrew script. The letters were made differently than today. Ezra said I know a way to get rid of all heretical manuscripts in vogue at present. Only the documents I

authorize will be accepted as canonical by the priests and go into the Temple in Jerusalem. He took every one of the books, from Moses, from Jeremiah, from Isaiah, and others, and he canonized in this manner: he changed the shape of every letter.

He did not change the letters or the words, he changed the shape of the letters. The square Hebrew script used today came from Babylon. Ezra himself was in Babylon at one time and knew the square script well. The Samaritans said Ezra was polluting the Bible with Babylonian style of writing in Hebrew. They objected to it. By changing every document to the square script, from then on anyone who saw biblical text in the old script knew it was Samaritan. Anyone who saw it in square script would know it came from Ezra, under inspiration of God. Ezra gave the square script manuscripts to the priests at the Temple. In turn they made standard copies for the synagogues outside Jerusalem. Thus, they had a secure and authoritative Old Testament.[3]

The Compilation of the New Testament

The apostle Peter had a problem when he compiled the New Testament. He did not have a Temple in Jerusalem, nor could he leave the New Testament writings with Levitical priests, because most priests objected to Christianity. Besides, the Temple was soon to be destroyed, as Christ said. Peter had to think of a way to ensure that all false gospels stayed outside the canon. In 2 Peter chapter 2 he talked about myths and false gospels going around.

The invention of the codex form could put the 27 books of the New Testament in a proper order, written on both sides of the pages, stitched together, with covers on it (the book wrap Paul wrote about). He was able to put them in covers, then he could send copies to the Christian communities he wrote to in central Asia Minor. It was a cheap way to do it, an authoritative way to do it because there was pagination, and it could be transported easily. We know from history that the *ekklesias*, from the end of the 1st century through the 2nd century, had their *ekklesias* primarily based around the Holy Scriptures that they had in their midst.

It can be proved almost dogmatically that the codex form was inspired by Almighty God for one reason: to make sure that the New Testament will stay intact and proper, coming from the hands of top authority, no less than the apostle Peter himself, the apostle John, along with the apostle Paul. The Bible itself has enough information to show that the "book" was "created" to allow our New Testament to become authoritative, so that extra books would not be added to it. If they did so, they would be easily identified as fraudulent and not be part of the original from Peter. This was also an effective way of getting rid of all false gospels, because they were all in scroll form. It was a genius move.[4]

Jews never went to the codex form in their synagogue services. Even today the Torah is read aloud from a scroll. Jewish books went to codex form about the 7th century AD. They used to say holy works could not be in codex form because that was for Gentiles. It may have been for Gentiles, but that was what Peter used. He knew that the Jews, and the heretics with their false gospels, thought the scroll form was the only proper format that God ever used. It was an ingenious and effective way to get rid of much false teaching.

You and I in the [21st] century do not think twice about it. We know a book has two covers, a spine, and pages stitched or glued together. You can turn to any page. You buy books, not scrolls. The first book ever produced in codex form was no doubt our New Testament. That is important. I go into detail in my book, *The Original Bible Restored*. We cannot have an authorized canon of works unless we have an inspiration, unless we know what those works are. The world needs to know this information. Every book you ever see from now on, no matter its subject, has its design because God wanted the New Testament put into that fashion for its preservation. It has been preserved.

Ernest L. Martin, January 1983
David Sielaff, February 2015

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[3] Josephus says there were scrolls in the Temple at the destruction of Jerusalem. He claimed he received those authoritative Temple scrolls from the Romans (*Life of Flavius Josephus*, 1.418). If true, they were all in the square script. *DWS*

[4] This information is detailed in later chapters of Dr. Martin's book "Restoring the Original Bible." *DWS*