Sanitation
IN COMMUNION

THIRD EDITION

BY JAMES D. ORTEN
&
ALTON B. BAILEY

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Preface

The first edition of *Sanitation in Communion* was published by brother Alton Bailey exactly ten years ago. In that booklet, he pulled together articles and reports on the topic from an impressive variety of sources. Those included statements by pioneer preachers, medical doctors, scientists, and others knowledgeable on the subject. Five thousand copies of the booklet were struck in the original printing, and a second issue of equal number was soon required. This number gave it a wide distribution for a publication that is of interest mainly to members of the church of Christ. That little volume, out of print for some time, did a great deal of good.

In the Fall of 1992, brother Bailey approached me to see if I would help him do a second edition of *Sanitation in Communion*. We agree that the topic is still of great relevance, perhaps more than ever because of publicity around the recent AIDS epidemic. In times of high emotion, Christians, as is true of everyone else, need solid information.

We agreed also that a thorough study of the medical/scientific aspects of the topic is needed, one that pulls no punches, allows readers to know in depth what human evidence has to contribute on the issue, and gives guidance in evaluating the quality of that information. It was human evidence that ticked off the germ scare that brought about a change in the communion service about a century ago. As it turns out, that evidence was faulty. But as is usually true in hysterical reactions, the original scare

got much more publicity than the gradual and sober turn around that followed. Although I am convinced that any scholar could have done such an inquiry, it was believed that my training in the scientific method and access to an excellent research library would be a help. I considered it an honor to be asked.

Brother Bailey and I agreed on still another matter: i.e. that the best evidence for Christians is always in the Bible. The track record of humanity's search for truth is weak by the most optimistic estimates. The absolute truth of God's Word should never be sacrificed in favor of human evidence. Our agreement on these convictions guided, to some extent dictated, the organization of the booklet.

Part I of this volume discusses Biblical evidence that God and Jesus, when He was on earth, knew about the causes of diseases and the ways they are transmitted. It also discusses the depth of God's love for mankind. These truths give Christians the best possible assurance that they will not be hurt in observing the Lord's Supper as Jesus instituted it.

Part II describes how Jesus set up the Lord's Supper. For spiritual and physical welfare, we must make sure that we know exactly what the Lord did when He instituted this part of the public worship.

Part III begins with a discussion of the limits of science in discovering truth. It continues by describing good studies and poor ones and noting common methodological weaknesses, such as drawing conclusions that are not supported by data. Then, all the studies of communion, revealed by a computer search of the

literature, are analyzed in depth. We conclude this section by looking at the studies completed in the early days of the communion cup controversy. Most readers will be surprised at what modern scholars have to say about the quality of the evidence that caused such a controversy in the religious world and created a division in the Lord's church.

Many persons gave support and encouragement to the project. We thank them all. Preachers of the gospel, physicians, pharmacists, and other professionals reviewed the manuscript and gave valuable suggestions. Their names are listed in the back of the booklet. We are indebted to Joe Norton, Ph.D of Arlington, Texas, who did the final edit of the manuscript. Susan Ayers, of the Oakwood church in Edmond, Oklahoma, has our special thanks for the tasteful design of the front cover.

We send the booklet forth with goodwill toward all, malice toward none, and a prayer that the Lord's cause will be served through it.

James D. Orten
Knoxville, Tennessee
November 1, 1993

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Part I— Controversy Over a Symbol of Unity

Great Bible scholars have described the observance of the Lord's Supper as man's highest act of worship, the place where, "The deepest draughts of spiritual life," are drawn?[1] That description is appropriate. It honors the world's greatest sacrifice, the death of the Son of God on the cross of Calvary. The lofty purpose of that sacrifice was reconciliation and unification—reconciliation of God and man from the alienation caused by human sins and unification of men with each other through the love of God and Christ. The meaning of the word communion signifies this sublime purpose. Synonyms are fellowship, association, joint participation, and intimacy.[2]

The context in which the Lord's Supper was established was noble and solemn. It was during the Last Passover that Jesus ate on earth, one He said He had looked forward to with great desire (Luke 22:15). As they ate, the Lord explained how the Son of Man would be crucified as it was prophesied of Him. He described how He would be betrayed by one of His own disciples. In this rare atmosphere, Jesus symbolized the end of the Old Testament order and the beginning of the New Testament age by establishing His memorial at the end of that Passover celebration. Even the disciples' description of the scene is simple and elegant.

> 26 And as they were eating, Jesus took bread, blessed and broke it, and gave it to the disciples and said, "Take, eat; this is My body." 27 Then He took the cup, and gave thanks, and gave it to them, saying, "Drink from it, all of you. 28 For this is My blood of the new covenant, which is shed for many for the remission of sins," (Matthew 26:26-28).

How sad that this sacred symbol of love and unity should have become a source of contention and division among members of the body of Christ. Although there are differences over more than one aspect of the Lord's Supper, the widest division and the most acrimonious debate has been over how many cups should be used in distributing the fruit of the vine. Until early in the Twentieth Century, no church of Christ used individual communion cups. All churches practiced some form of sharing of the communion cup, and many were committed to the use of one. This practice fits the example of Jesus as, "He took a cup and when he had given thanks, He gave it to them saying, 'Drink of it, all of you,'" (Matthew 26:27-28, RSV).

Members of the body of Christ, for good reasons, are usually adamant against making changes in patterns the Lord has given. Why the change of attitude on this integral part of the worship? To answer that question, one must understand the times in the latter part of the Nineteenth and early Twentieth Centuries. Medical science was just beginning to discover the role of microorganisms in human health and illness. The state of their knowledge did

not allow them to know that many bacteria are beneficial and some essential to human life. They had only sketchy knowledge about how microorganisms are transmitted and how the body handles them.

A real germ hysteria developed. Many people became frightened of drinking after each other in using a single cup for the congregation. In some denominations, extreme measures were taken. Dr. J. G. Thomas, a physician and Presbyterian minister, is reported to have had members of his church bring their own cups to worship, spraying them with carbolic acid and examining them under a microscope to make sure all organisms were killed.[3] Such measures sound foolish and they were, but they show the state of fear at the time. There were, to be sure, wise heads who spoke out to calm the fear and oppose the changes being proposed because of it. These men, such as G. A. Trott, a pioneer preacher and medical doctor, pointed out that no one had ever been known to be hurt by participating in the Lord's Supper.[4] That statement is still true. Out of their faith, they argued that God would not inaugurate a practice that endangered His followers. Nevertheless, for many persons, fear carried the day and in 1915 the first congregation of the church of Christ broke ranks with her sister churches around the world and followed the denominations by installing the newly-invented individual communion set

One would think that a controversy that began when medical science was young and crude could be settled by

the space-age technology now available. It has been, as far as the general medical community is concerned, as we shall see later. But oddly, some Christians are still frightened. And, in the debate that flares occasionally, some of the most derogatory terms are used toward those who hold to the original pattern. For example, the practice is called filthy, and their intelligence is even questioned.

Since the controversy was unsettled during years when diseases were not headline matters, we think it is likely to get worse with the advent of illnesses, such as AIDS, and the alarmist publicity that has attended them. It is vitally important that Christians examine the evidence and decide once and for all whether their health is at risk in following the Lord's directions in communion and other matters.

What Does It Say About Christ?

Christians may not realize the statements they are making about Christ when they argue that their health is endangered by observing the communion as Jesus instituted it. If one risks a disease by following the Master's example, then:

a) Jesus did not know about diseases, or
b) He did not care about His disciples.

Neither of these conclusions are worthy of Christians. Let us examine each assumption more closely.

Is there Biblical evidence that Jesus knew, at the time He lived on earth, about the causes of diseases and the ways they are transmitted? The evidence is sufficient to convince the most demanding inquirer if it is received and evaluated objectively. For example, Paul said of Jesus, "For by Him were all things created, that are in heaven and that are on earth, visible and invisible..." (Colossians 1:16). Visible things on earth would include elephants, and invisible things would include viruses and bacteria. Is it reasonable to think the Lord had knowledge and power to create these organisms but lacked understanding of how they work?

Not only did Christ know how diseases develop, He had power to cure them. "Then Jesus went about all the cities and villages, teaching in their synagogues, preaching the gospel of the kingdom, and healing every sickness and every disease among the people," (Matthew 9:35). Notice that the Master did not heal just some mild illnesses, but every type of disease.

Leprosy baffled medical scientists for centuries, but Jesus healed it with a word. "And behold, a leper came and worshiped Him, saying, 'Lord, if You are willing, You can make me clean.' Then Jesus put out His hand and touched him, saying, 'I am willing; be cleansed.' Immediately his leprosy was cleansed," (Matthew 8:2-3). In describing the same case, Luke (5:12) indicates the man's disease was in an advanced stage. Terminal cases of deadly diseases were no more difficult for the Lord than early forms of easily curable diseases.

Jesus gave His disciples power over diseases and evil spirits (Matthew 10:1) and they amazed both the people and themselves (Luke 10:17). The power over diseases that Jesus demonstrated so convincingly should not surprise us, for the Lord had power over everything. “All authority has been given to Me in heaven and on earth,” (Matthew 28:18). Is it a great thing that the one who could stop storms, raise the dead, and open blind eyes also had power over diseases?

Centuries before Jesus cured lepers in Palestine, His Father demonstrated the same type of power with the Egyptians. With God’s power, Moses brought diseases upon the Egyptians and their cattle while the Israelites and their animals were spared (Exodus 9:1-11). Later God reminded the Jews that He had this power and promised to use it for their benefit. “If you diligently heed the voice of the Lord your God... and keep all His statutes, I will put none of the diseases on you which I have brought on the Egyptians. For I am the Lord who heals you,” (Exodus 15:26; see also Deuteronomy 7:15).

The promise of God to protect the Hebrews in their obedience was repeated by Solomon. “Do not be wise in your own eyes; fear the Lord and depart from evil. It will be health to your flesh, and strength to your bones,” (Proverbs 3:7-8). The navel and bone marrow were considered centers of sustenance and health as, indeed, they are. The navel is the site of nourishment for the

unborn, and bone marrow makes a strong contribution to health throughout life.

Although there have been special and miraculous cases, the protection God promises comes primarily through the general laws that govern the universe and the moral and religious laws given to His followers. The book of Leviticus, often called the Public Health Manual of the Bible, contains wonderful illustrations of religious laws that serve physical and spiritual purposes. Such requirements as isolating the sick, washing in running water, and cleansing houses after sicknesses and death have clear health benefits. These practices also indicate God's knowledge of how diseases are transmitted.

The Israelites may not have known why they were not allowed to eat animals that were killed by wild beasts or that died of themselves, but we know that several diseases can be transmitted from animals to humans. Even the eighth day for circumcising male children was not a random choice. We cannot read what was in God's mind when he made the choice. But we do know that vitamin K, which facilitates blood clotting, is produced by bacteria in human intestines, and this process is not fully developed until a few days after birth. Can there be any doubt that God, who made the human body, knows what is beneficial for its health?

If we accept that Jesus knows what is good for human health, does He also love enough to cause Him to use that infinite knowledge on our behalf? The question itself may sound blasphemous to the truly devout. John said, "For God so loved the world that He gave His only begotten Son, that whoever believes in Him should not perish but have everlasting life," (John 3:16). It does seem strange, does it not, that humans would question God's good will when He has already made the supreme sacrifice on our behalf by giving His son for our sin.

One facet of the meaning of the word "loved" in John 3:16 is to be full of goodwill and to exhibit it with actions. That definition is profoundly fitting in view of what God did for mankind. The complex little word "so" that precedes love, is used as an adverb of degree. It suggests that without some action to illustrate it, humans would not be able to understand the depth of God's love. Having loved in this way, would He then allow practices to be set in motion that put His children at risk?

God, who created man in His own image, respects the human body more than most humans do. Paul said, "Or do you not know that your body is the temple of the Holy Spirit who is in you, whom you have from God, and you are not your own? For you were bought at a price; therefore glorify God in your body and in your spirit, which are God's," (I Corinthians 6:19-20). These statements were

made in the context of teaching Christians to stay away from sexual sins. Paul said that the person who commits fornication, "Sins against his own body." Dr. MacKnight interprets this phrase to mean pollution of the body with diseases.[6] The world became worried about sexually transmitted diseases several decades ago, and worry has become open fear in the last few years. But God was concerned about these diseases for man when the Sacred Word was given. Is it logical that He would give such instructions and then organize His worship in a way that would put us in danger of catching those diseases?

Paul laid down a principle that Christians should observe with utmost care, i.e. that God's people are never hurt and always helped, in this life and the next, by obedience to Him. "Godliness is profitable for all things, having promise of the life that now is and of that which is to come," (1 Timothy 4:8). The word godliness here means reverence toward God; it includes the attitudes one holds and the acts one performs in obedience to God.

Paul is not promising that God will suspend the natural operation of the universe where Christians are concerned. Instead, it is assurance that the order was made with them in mind. It is not a commitment that disciples will never catch a cold or have an accident. We are aware that Job, Paul, and others were allowed, for distinct purposes, to suffer for their faith. These special circumstances do not suggest that God would jeopardize all Christendom by injecting danger into the worship itself. The promise that

obedience to God benefits us here and hereafter is unequivocal.

The preceding facts should convince honest hearts that God has dealt with humans from a position of absolute knowledge and from an infinite concern for our physical and spiritual welfare. This being a fact, our only real concern should be to discover how the Lord ordained His Supper. On that issue, we are fortunate because the record is exceptionally clear, as we shall see in the next section.

"Behold, I am the Lord, the God of all flesh:
is there anything too hard for me?"
(Jeremiah 32:27)

Part II— How Did Jesus Set Up His Supper?

If we believe that one is always blessed by obedience to the Lord, our first order of business should be to find out exactly how Jesus instituted His Supper. On that score, we are fortunate, for there are several descriptions of that sacred event, and they are remarkably clear.

Matthew 26:26 says, "And as they were eating, Jesus took bread, blessed and broke it, and gave it to the disciples and said, 'Take, eat; this is My body.'" The word bread here means a loaf, as many translations of the New Testament render it. Thayer describes how the loaf was made, i.e. flour mixed with water and baked into a thin flat cake.[7] He adds that these loaves were broken for eating, not cut. The phrase "as they were eating" referred to the fact that the institution took place while they were eating the Jewish Passover Supper. Ellicott comments on this verse.

> Again we must represent to ourselves an interval of silence, broken by the act or words that followed. The usual "grace" or blessing had been spoken at the beginning of the feast. Now, taking one of the cakes of unleavened bread, He again utters a solemn formula of blessing, and gives it to them with the words, "Take, eat, this is my body."[8]

The account is simple and straightforward. Jesus took a loaf of bread, He gave thanks for it, He broke of it Himself,

and He passed it to His disciples with instructions for them to break and eat. He explained, in the symbolic language to which the disciples had become accustomed, "This is my body."

After the bread had been passed around, "He took the cup, and gave thanks, and gave it to them, saying, 'Drink from it, all of you.'" Thayer and every Greek dictionary we have seen, says the word cup means simply a cup or drinking vessel.[9] Although the word can be used symbolically, Thayer rightly indicates that its use here is in the ordinary sense. Paul said, "In the same manner He also took the cup..." (I Corinthians 11:25), explaining that as the bread was passed among the disciples for their eating, the cup was now passed for their drinking. The phrase, "Drink from it, all of you," demands this view. It is a command that means, "All of you drink from it." Since the "it" is the drinking vessel Jesus had given them, it means all of them were to drink of the cup.

Ellicott states that by choosing a cup, solemnly consecrating it through prayer, and passing it around to the disciples, Jesus made it into a, "Symbol of divine truth than had yet been revealed to the listening and wondering disciples."[10]

The Supper, as Jesus instituted it, is a simple and elegant ceremony. It consists of a loaf of unleavened bread that is consecrated through prayer to represent the Lord's body. The loaf is passed among the disciples for each to break and

eat a piece of it in memory of His death. Then a cup of the fruit of the vine is blessed and, in the same manner, is passed around to the disciples; and each partakes in memory of the Lord's blood that was (to be) shed for them. There is little room for doubt about what took place on that fateful night so long ago.

Little Disagreement on the Facts

Actually though, we sometimes lose sight of the fact, the church has never been divided over how many loaves and cups the Lord used in His Supper. There is rather virtually complete agreement among Bible scholars that He used one loaf and one cup. The division is over whether we are required to follow the Lord's example. Notice, for instance, some statements from the *Gospel Advocate Commentaries*, the first complete set of New Testament reference books written by scholars of the church of Christ. In the book on Mark, the writer explains Chapter 14, Verses 22 and 23 this way:

> He took bread — or a loaf. One of the thin flat loaves of the country, made without leaven of any kind. A loaf does not mean two or more loaves, but one. The loaf, which was one, points to the body of Christ. Jesus had one body which he offered for the sins of the world and the loaf represents that one body. Two loaves on the Lord's table are out of place and have no divine sanction. One loaf is safe, two are

> doubtful, to say the least. It is always safe to be on the safe side.[11]

Then in the same commentary we read regarding Mark 14:23, "A cup is one, not two nor a dozen." Brother C. E. Dorris, who wrote those words, worshipped at a church that used individual communion loaves and cups. But when it came to explaining what the Lord did, he was faithful to his scholarship of the sacred text, describing it exactly as it was.

Alexander Campbell preached three quarters of a century before the germ scare brought about a change in the Lord's Supper. Notice what he said in the *Millennial Harbinger* of December 1830:

> "On the Lord's table there is of necessity but one loaf. The necessity is not that of a positive law enjoining one loaf and only one, as a ritual of Moses enjoined 12 loaves. But it is a necessity arising from the meaning of the Institution as explained by the Apostles. As there is but one literal body and but one mystical or figurative body having many members; so there must be but one loaf. The Apostle insists upon this (1 Cor. 10:17). "Because there is but one loaf, we, the many, are one body; for we are all partakers of the one loaf."[12]

Religious literature that was written soon after the death of the inspired apostles shows that the church of that day

used one loaf and one cup in observing the Lord's Supper. Justin Martyr (A.D. 100-165) stated, in *The First Apology*, that a loaf of bread and a cup of wine were used in communion by the disciples to remember their crucified Lord.[13]

Must We Follow the Lord's Example?

Although the facts concerning the institution of the Lord's Supper are clear, some people argue that we are not required to follow the Master's example. We are told that Christians must commune but that the details of how it is done are unimportant and, therefore, are left up to us. The condition of Christians' hearts as they commune is what is important, the argument goes, not how many cups are used. Is this argument strong enough to risk our eternal salvation upon?

The answer to the preceding question is found in Romans 10:1-3 where Paul condemned that type of thinking. "Brethren, my heart's desire and prayer to God for Israel is that they may be saved." This is a matter of being saved or lost. "For I bear them witness that they have a zeal for God, but not according to knowledge." The word knowledge here means, "precise and correct knowledge... of God, especially of His holy will."[14] This type of knowledge implies an objective standard to which one holds and by which his behavior is measured. In this case, the standard is God's revealed Word. "For they being ignorant of God's righteousness, and seeking to establish their own

righteousness, have not submitted to the righteousness of God." "Righteousness" means the condition of being acceptable to God and the doctrine that tells man how that state may be obtained.[15]
A conservative paraphrase of these passages is that the way to please God and be saved is not in establishing our ways which we think will please Him but rather in becoming knowledgeable about His will and precisely submitting to its dictates.

Most great divisions in the religious world have resulted from arguments, like the foregoing one, that "details" have been left up to man. For example, those who sprinkle for baptism justify the practice on the same grounds. "It is what is in one's heart that counts," we are told, "and not in the way the ordinance is carried out." Any departure from God's Word that one wishes to make can be justified by this argument.

The ordinances of God were not given to man for his consideration and possible adoption, but for his obedience and safe keeping. Paul said, "Now I praise you, brethren, that you remember me in all things and keep the traditions just as I delivered them to you," (I Corinthians 11:2). The word "as" means "just as."[16] Paul is praising the Corinthians because, in general, they had kept his instructions about public worship. But it was clear from verse 17 that they had not kept the Lord's Supper "as delivered."[17] He said, "In this...I praise you not..." By praising Christians when they kept the ordinances and

condemning them when they did not, Paul takes the strongest possible stand that the Lord's Supper must be kept, "Just as I delivered." He further declared that he delivered it just as Jesus did it on the night He was betrayed (1 Corinthians 11:23).

Guidelines and Blueprints

Some Christians confuse the way God directs the organization and public worship of the church with the means by which He guides our private lives. The former is by blueprint; the latter is by guidelines. Guidelines provide a general outline, and details appropriately are left to individuals. On the other hand, a pattern or blueprint requires strict compliance. Guidelines are often written in negative form, telling one what he cannot do. A blueprint is positive; it names what must be done, and everything that is not named is not allowed.

When God gave Noah the pattern for building the Ark (Genesis 6:14), He told him to make it of gopher wood. He did not name all the types of wood that were not acceptable. By putting the type He wanted in the pattern, He excluded all other types. God instructed Moses (Hebrews 8:5) in the building of the tabernacle to see, "That you make all things according to the pattern." The ark and the tabernacle were Old Testament types of the church. The message is clear that "all things" in the church must be done according to the blueprint. And the pattern

regarding the Lord's Supper is also clear. The Bible teaches in four, and only four, ways:

1) statements of facts,
2) commands to be obeyed,
3) examples to follow, and
4) necessary inferences.

If a practice is not taught by at least one of these ways, it is not authorized at all; and one is going beyond God's Word to use it in the public worship. "Whoever transgresses and does not abide in the doctrine of Christ does not have God. He who abides in the doctrine of Christ has both the Father and the Son," (II John 9). The use of a common communion vessel is taught by all of the above methods.

By command: "Then He took the cup, and gave thanks, and gave it to them, saying, 'Drink from it, all of you.'" (Matthew 26:27). That "you all" is like a southerner's "you all;" it means "all of you." Wilson's translation gives it, "Drink all of you out of it."

By example: "Then He took the cup, and when He had given thanks He gave it to them, and they all drank from it," (Mark 14:23). Again, Wilson's translation says, "They all drank out of it." Weymouth's translation says, "They all drank from it."
By statement: "The cup of blessing which we bless, is it not the communion of the blood of Christ? The bread which we break, is it not the communion of the body of Christ?"

(I Corinthians 10:16). This is a statement of fact about what the church at Corinth did. As brother Dorris said, the cup always means one, not two or a dozen.

By necessary inference: "But let a man examine himself, and so let him eat of the bread and drink of the cup," (I Corinthians 11:28). The direct teaching of this verse is about the state of mind in which communion should be done.

As a summary of the discussion regarding whether we must follow the Lord's example in communion, let us notice some highlights of Scriptures and definitions of words:

1. Paul said keep the ordinances, "Just as," I have delivered them to you (I Corinthians 11:2).

2. Jesus took a cup, "a drinking vessel," (I Corinthians 11:25).

3. Jesus gave the cup to His disciples and told them to drink of it (Matthew 26:27).

4. The disciples took the cup and drank of it (Mark 14:23).

5. Jesus said, "This do," (I Corinthians 11:25). Note that 1 Corinthians was written to all Christians everywhere (1 Corinthians 1:2).

We solemnly ask, where is the statement saying the early Christians used individual communion cups? Where is the biblical command for their use or an example of it? Where does biblical language even imply they were used?

The Inventor of Individual Communion Cups

Christians are interested in who originates changes in the Lord's church. And we agree with brother David Lipscomb that the motives that prompt a change are important.[18] If we find we have drifted away from what the Lord commanded, we should be quick to make changes to get back to the original pattern. King Josiah faced this situation in his people's observance of the Passover—a type of the Lord's Supper (I Corinthians 5:7-8). Josiah followed in office evil kings who allowed the nation to dabble in many sinful practices. In reading the book of the law, he found their Passover had not been conducted properly. The king inquired of the Lord and, "Commanded all the people, saying, 'Keep the Passover unto the Lord your God, as it is written in the book of the covenant,'" (II Kings 23:21). God spared Josiah's life for turning the nation around, but the people were punished for leaving God's original pattern.

What a contrast Josiah's story is with the invention of individual cups. Dr. J. G. Thomas, preacher and physician, was mentioned in Part I of this booklet. If you predicted, when you read about him, that the extreme measures Dr. Thomas introduced into his congregation of the Presbyterian Church would not last, you were right. But

Dr. Thomas worked at refining his ideas, and on March 6, 1894, he was granted a patent on an individual communion set and a machine with which to fill the cups. We have a copy of the patent. It contains many illustrations and 170 lines of description of how it works. In all that detail, the words God, Christ, or the Bible are not mentioned. There is no reference to Scripture. Instead he said, "I, John G. Thomas, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful improvements in Communion service..." Indeed!

Incidentally, although Dr. Thomas has been credited for decades with inventing individual communion cups, and he certainly was issued a patent for them which his family still holds, there is evidence that the "honor" really does not belong to him. The Congregational Church of Saco, Maine, used them a year earlier, and by 1894 several denominational churches in Rochester and Philadelphia had adopted the practice.[19] Apparently those groups were not interested in commercializing the venture and never applied for a patent.

So much for how individual communion cups came into denominational churches. How were they brought into churches of Christ? Brother G. C. Brewer claims that "credit." In the Introduction to his autobiography, *Forty Years on the Firing Line*, he said:

> I think I was the first preacher to advocate the individual communion cup and the first church in the state of Tennessee that adopted it was the church for which I was preaching, the Central Church of Christ at Chattanooga, Tennessee, then meeting in the Masonic Temple. My next work was with the church at Columbia, Tennessee, and, after a long struggle, I got the individual communion service into that congregation. About this time brother G. Dallas Smith began to advocate the individual communion service and he introduced it at Fayetteville, Tennessee; then later at Murfreesboro. Of course, I was fought both privately and publicly and several brethren took me to task in religious papers and called me digressive.[20]

You might have added, brother Brewer, that "several brethren" around the world still do call your practice digressive. How sad that a sacred memorial instituted by Jesus Christ, in the presence of His apostles, on the night of His betrayal should be changed by a group of men and women meeting in a Masonic Temple in Chattanooga, Tennessee!

Part III— Science and Sanitation in Communion

We begin this review of experimental studies and medical opinions regarding the communion cup with considerable ambivalence. Our ambivalence is not related to the evidence, which is strong and positive, but to reporting this type of evidence at all. Our conviction is that Christians should trust in the great physician, who has declared Himself our, "Lord who heals you," (Ex. 15:26). This physician is never wrong.

Human evidence, by contrast, must always be kept in perspective. Science has created many mundane but useful advancements and about an equal number of brilliant discoveries and stupid blunders. Many of the developments that seemed brilliant, Sir Alexander Flemming's discovery of penicillin for example, actually were done by accident. The blunders are caused by all sorts of human frailties, ignorance, arrogance, prejudice, and outright fraud, just to name a few. The infamous Piltdown Man that was "discovered" in a gravel pit in East Sussex, England, fooled scientists who labeled him a link with our "animal ancestors." In reality "he" was a combination of human and animal bones planted by a dishonest laboratory assistant, This classic blunder occurred because scientists wanted to believe evolution (prejudice), because they overtrusted their methods of dating relics (ignorance), and because of one worker's clear dishonesty.

We give these facts about the limitations of science not to say that such evidence is worthless, but as a reminder that it should not be placed on par with inspiration. “Science does not lie,” it is said, but the statement is only a play on words because scientists, the men and women who practice science, are human and subject to all weaknesses common to other mortals. We use human evidence in human matters because that is all we have. It seems especially unwise to rely on human evidence when divine evidence is available.

These limitations of science should be kept in mind when making assessments of the value of the evidence from experimental studies on communion. In such situations, it is almost never a simple matter of seeking scientific opinion and accepting it. For one thing, the scientists often disagree. Then it becomes necessary to make judgments about the quality of one study over another. Thus, readers must assess the soundness of the methods of study, be alert for signs of bias, observe whether researchers’ conclusions are truly supported by their data, and so forth. Laymen often think that some expert somewhere “knows the truth” on the questions that trouble them. But that is a naive and unwarranted trust in human expertise. In the end, one usually must survey all the evidence and make a decision for himself about whether it generally supports one view or another.

Many Opinions—Little Evidence

While there have been hundreds of newspaper reports and articles giving opinions on the safety of common-cup communion, there have been very few actual studies. A computer search of the literature indexes revealed only about half a dozen efforts in the century that this topic has been discussing. Some of those are methodologically so flawed that no competent scholar would credit them with worth. Others are excellent and worthy of all the confidence that is realistic to place in human endeavors. Still others are mixtures of wheat and chaff.

We shall begin our review by discussing those experimental studies that are of highest quality. Then, we will review a study that we consider of poor quality and explain why we see it as we do. Our intentions are to review, or mention and reference, every known study so that interested students may pursue the matter to the fullest and come to solid decisions about what human evidence says. After our own review, we will summarize a comprehensive assessment of many studies that relate directly and indirectly to the topic—an assessment completed by an internationally recognized scholar. We will close this section with comments by several medical authorities and religious leaders.

A British Government Study

The most respected scientific experiment to date was done at the Central Public Health Laboratory in London by three researchers named Hobbs, Knowlden, and White (1967).[21] The Medical Research Council, an agency of the British government, commissioned the study in response to complaints against the Church of England, which uses the common communion cup. Among medical personnel, this is the single most influential study on the topic, probably because it was unbiased, it was more thorough than usual, and it created real-life conditions in the laboratory.

To answer the general question about the danger of disease transmission, this group sought answers to specific questions, i.e. how many organisms are deposited on the surface of the cup by each communicant, how long do such organisms survive, are these organisms transferred to other communicants, and, if so, are there ways the number of organisms on the cup can be reduced? These are relevant questions because modest numbers of bacteria are present everywhere, even on the surfaces of unused cups, and comparing common-cup communion against totally sterile conditions is not realistic.

Researchers had volunteers drink from a silver cup filled with fermented communion wine as used in the Church of England. Average number of communicants was 24. Several trials were done. First, all persons drank from the same place on the cup. Second, the cup was rotated to a

different spot after each communicant. Third, all persons drank from the same spot, but the rim of the cup was wiped after each use; and finally, the cup was rotated and wiped after each person drank. In each experiment, swabs were taken after each participant and the recovered material examined microscopically to make counts of organisms. A swab was taken from the rim of the chalice before anyone had drunk for comparison (known as a "control" in experimental studies).

In another set of experiments, saliva was placed directly from the mouths of participants onto the rim of the cup, directly into communion wine, and into Ringer's Solution. (Ringer's is a salt-water compound with a mineral composition that is similar to the fluids in human tissue and blood.) Staphylococcus and Escherichia coli bacteria that had been grown in the laboratory (known as "cultured" bacteria) were placed on the cup, in the wine, and in Ringer's Solution. Examinations were made of the survival rates of these bacteria at intervals ranging from 30 seconds to 30 minutes. These experiments were designed to test the germicidal powers of silver and wine. What follows is a summary of their findings.

The specific number of organisms recovered from the cup after participants drank was low in all cases. For several participants, the number was below 100. The average number recovered was 654, which included normal benign bacteria as well as any unusual organisms. In some cases, the number taken from the unused cup rim exceeded that recovered from droplets left by communicants! Rotating

the cup did not reduce the number of organisms; in fact, somewhat more were found than when communicants drank from the same place. Wiping the cup after each user, however, reduced the number of organisms present by about 90 percent.

As a means of comparison for the preceding figures, a single milliliter of blood from a person infected with Hepatitis B may contain more than 100,000,000 (one hundred million) infected viral particles. If one of the communicants ingested every organism left by the person who preceded him (which would be impossible), the average number gotten would be approximately 1 over 150,000 of this amount. These figures explain why epidemiologists are more concerned about other means of disease transmission, for example, sharing drug needles. Not only is the number of organisms apt to be thousands of times greater, needles put them directly into the blood stream where they are more lethal, rather than into the mouth, where the body can more easily handle them. In samples of the remaining communion wine, no organisms were ever isolated.

The London groups' experiments showed that both silver and wine have an inhibiting effect on bacteria but that the effect is produced too slowly to kill organisms deposited on the cup rim before the next communicant drinks. The germicidal effect of silver appeared to begin at about 3 minutes. The cup is passed from one person to the next in a matter of seconds.

When 100,000 to 200,000 cultured bacteria were placed in small amounts of wine in glass and silver containers, the germicidal effect began to show strongly in about 3 minutes but varied with the type of bacteria and the type of container. The use of a silver container with the wine always quickened the effect.

These researchers give three reasons that the risk of disease transmission by the common cup is small:

> 1. The number of pathogenic bacteria on the lips of humans is generally small, the risk of another person ingesting them from the cup is negligible, and even when bacteria are ingested in small numbers, the body can handle them.
>
> 2. Even organisms that infect by mouth, such as typhoid bacilli, are not likely to be found on human lips. Because of how they are excreted, they are more likely to be found on the fingers.
>
> 3. The more easily transmissible diseases are those of childhood, and small children do not commune.

This group's conclusion regarding the communion cup is that "the risk of transmission is very small, and probably much smaller than that of contracting infection by other methods in any gathering of people."

Dr. G. A. Trott, the pioneer preacher and physician mentioned in Part I of this booklet, said that he would stake his professional reputation on the proposition that Christians who commune from a common cup are exposed to no more germs than those who do so from individual cups.[22] He was speaking from his faith. It is too bad that he did not live a half century later so that he could read this study. Dr. Trott would have felt vindicated by the fact that the number of organisms recovered from unused cup rims sometimes exceeded those recovered from the common cup.

The University of Chicago Study

William Burrows and Elizabeth Hemmens, from the University of Chicago, studied communion two decades earlier than the London group (1943).[23] Burrows and Hemmens made it clear that they had no interest in "the theory of the sacrament" or in "the relative ecclesiastical merits of the various methods of its administration." They were concerned exclusively with the possibility of disease transmission.

The specific issues and methods of the Burrows and Hemmens experiment were similar to the London study. By placing various types of cultured bacteria onto the rim of the cup and into the wine and making counts after various time lapses, they concluded, like the London group, that both silver and wine have a germicidal effect Their

findings showed somewhat stronger and quicker effect than those of the British study.

The Chicago study tried to create the worst possible conditions of communion or, conversely, the most favorable conditions for bacterial transmission. They made a "mouthwash" of cultured bacteria and had some participants rinse their mouths with it before drinking from the cup. This allowed them to "trace" the bacteria from the cup rim and even in the saliva of later communicants. They also asked participants not to be "careful" but to deliberately leave more saliva on the cup than would occur in a normal communion service.

Burrows and Hemmens, like the London group, found that wiping the cup rim removed approximately 90 percent of the bacteria. But even when the cup was not wiped and when participants were making conscious efforts to be "sloppy," few organisms were transferred. These researchers concluded, "In these experiments the enumeration indicated that only 0.001% of the bacteria present in the saliva of the first individual may be found in the saliva of the second, and then only when considerable conscious effort was made to transfer as many as possible, and when the cup was not wiped." One can see how they concluded that the possibility of airborne infection makes sitting in the room with infected persons more dangerous than drinking from the communion cup.

Some readers have taken the Burrows and Hemmons figure (0.001%) to mean that one has just one chance in a thousand of catching a disease by communing from the common cup after an infected person. Actually the meaning is more conservative than that. It means that only one one-thousandth of microorganisms are likely to be transferred from one mouth to another. The human body can handle small amounts of bacteria and, based on these findings, the researchers were well within their scientific domain to say the chances of actually contacting a disease by this means is small. But no one can precisely calculate the chances of a specific person's getting a disease. Many factors influence that possibility other than the number of bacteria that are present. However, because the general death rate for persons 35 years old is higher than could be postulated in any communion-cup danger, Burrows and Hemmens concluded that it is more dangerous to live to age 35 than to drink from the communion cup!

Both of the studies reviewed so far have shown that silver, as is true of most heavy metals, has an inhibiting effect on the growth and reproduction of bacteria. That effect does not work fast enough to destroy microorganisms as the cup passes from person to person in the process of communion. But it does appear to work from about three minutes onward. Imagine this Sunday morning scene. In two churches brethren prepare the communion table. In one, the fruit of the vine is poured from a previously sealed bottle into a silver chalice, placed upon the table, and covered to await the hour of use. In the other congregation,

the fruit of the vine is unsealed, poured into a filler, and then into plastic or paper individual cups. The chances are that the chalice, the filler, and the individual cups all acquired minute amounts of dust and bacteria while on the shelves and in the filling process. In one case, the silver cup has from one to two hours to purify itself. In the other, because plastic and paper do not inhibit bacterial reproduction, the cups have the same amount of time to become more contaminated. Too bad Dr. Trott did not live to review this study.

Canadian Department of Health and Welfare Study

Although Jack Konowalchuk and Joan Speirs of the Canadian Bureau of Microbial Hazards were not studying communion, their research is often cited in this regard.[24] Earlier studies by these scholars had investigated the power of various fruit extracts to inactivate different types of viruses; the one reviewed here did the same for grapes and wines.[25]

These researchers prepared two-milliliter bottles of red wines, white wines, commercial grape juice (Welch's), whole fresh grapes homogenized in water, and raisin infusion (water in which raisins had been soaked for 24 hours). Cultured polio, echo, coxsackie, and herpes viruses were deposited in the test bottles in batches of 8,000 plaque-forming units. Counts were taken at periods from one hour through 24 hours. They monitored the effects of

the substances over longer blocks of time, rather than in minutes as in the other studies, because they were interested in the effect of the compounds on microorganisms in human digestive systems, not in possible spread of disease in communion. For the same reason, no tests were made on cup rims or with silver or other types of containers.

All of the grape substances had an inhibiting effect on the viruses. The strength and rapidity of the effect varied with the type of virus and the substance. Raisin water and white wines were least effective. Pure grape juice was clearly the most effective. In general, polio and herpes viruses were inactivated more quickly and to larger extent. For example, polio virus was reduced to one tenth its former count after 24 hours incubation in pure grape juice.

As far back as the First Century, people believed that wine had purifying properties. Roman soldiers are said to have mixed wine with drinking water in the countries they conquered in the belief that the alcohol in the wine would purify the water. It may have helped, but if so, it was not due to the alcohol. This and other studies have shown that it is the phenols in and near the skins of the fruit that possess this power. The reason red wines are more effective than white is that red wines are made by fermenting the whole fruit, including the skins, whereas white wines are processed from juice only. Apparently the fermentation reduces some of the power of the fruit since pure juice is more effective than red wines.

One value of this study is that it explains certain findings from other studies. For example, when the wine remaining after communion has been tested, it is found to be "practically sterile." This is puzzling because even unused cups and healthy mouths are not ordinarily sterile. The probable explanation is that unused wine is usually tested from one to several hours after the communion service—long enough to allow the phenols in the wine or grape juice to produce this effect.

Gregory, Carpenter, and Bending: a Study with Methodological Problems

Two of the above researchers were from the University of Guelph in Canada and the third was from Loma Linda University in California.[26] They state that their work was intended to test whether "good quality" wine and silver communion cups would rapidly kill microorganisms. A variety of experiments were conducted. In one test, four types of cultured organisms were placed on a silver cup rim and in wine contained in a silver cup. The rim and the wine were checked intermittently for an hour. The efficacy of wiping the cup rim was tested by placing organisms on a cup, allowing them to dry, wiping with a cloth, and swabbing for viruses. Then, thirty university-student volunteers simulated a communion service, and the cup rim was checked for organisms. The researchers also took saliva from volunteer's mouths, inoculated it with cultured organisms, and deposited droplets of it directly into the

wine. These droplets were later retrieved and tested for growth or decline of the organisms.

Gregory, Carpenter, and Bending concluded that silver had no effect on test organisms, wiping the cup was of very little value in reducing organisms on the cup, and a "variety" of organisms were found on the cup after the simulated communion. Droplets of the virus-infused saliva recovered from the wine showed an increase in numbers! They did find that wine was strongly antiviral on three of the four test organisms. They concluded that "the common communion cup and its contents could serve effectively as vehicles for rapid transmission of disease organisms."

If one assumes that all researchers were honest, how could these authors achieve such different findings and arrive at far different conclusions from Hobbs, Knowlden and White and from Burrows and Hemmens? It may not be so difficult as it seems. In the first place, although these experiments were described as similar to those of other researchers, they actually were quite different. For example, Burrows and Hemmens wiped the cup right after communicants had drunk, the real-life procedure in churches that use this practice. Gregory et al. placed virus preparations on the cup rim, allowed them to dry, and then wiped. It seems easy to understand why a dry cloth would not be effective in removing dried solutions.

These authors' test of the cup after simulated communion was not the same as in other studies, nor was it a valid

research procedure. They say, “A variety of bacteria was recovered from the cup surface,” but they give no counts of any types of bacteria and they did not test an unused cup as a control. Remember that the London experiment recovered more bacteria from some unused control cups than from cups used by several communicants. This finding could have been announced before the experiment was done. There are bacteria on all surfaces that have not been sterilized and sealed. In the form reported, the findings of this study are worthless.

Gregory et al. exhibit two of the most common failures of scientists: 1) sloppy work, and 2) drawing conclusions beyond their data. Almost every task can be done well or poorly, a fact that is as true of science as of auto repair. For instance, they acknowledged not having read Burrows and Hemmens before conducting their work, even though the former had been a standard reference in the field for 20 years. One of the canons of science is that one becomes familiar with what others have done on the subject before beginning an experiment. The purpose is to build on others’ strengths and avoid their mistakes. These authors’ carelessness is evinced in conclusions that were well beyond their data, some of which now make them appear foolish.

Gregory et al. concluded that the communion wine itself could be an effective vehicle for disease transmission, yet they acknowledged that “we have no evidence as to the entry of saliva droplets into communion wine during actual

communion." In fact in their own simulated communion service, they had evidence to the contrary. They tested the remaining wine for amylase activity (enzymes in human saliva) and found none! Why would they conclude as they did in the face of their own evidence and in view of others having tested unused wine and finding it sterile? Perhaps they did not read those studies either.

Another example, that now must be very embarrassing, is Gregory, Carpenter, and Bending's assertion that churches that use pure grape juice, rather than fermented wine, are at even greater risk. "There can be little doubt, nevertheless, that wine is safer from the epidemiological point of view, than unfermented grape juice would be in a common communion cup." Since they did not test grape juice in comparison to wine, they were going beyond their data to make this conclusion. It was based on the common sense notion that the alcohol in the wine is the effective agent. One hopes that by now they have read Konowalchuk and Speirs. Unless scientists discipline themselves to be good scholars, they are no more immune to prejudice than ordinary folks.

Gill's Review of Studies

The most useful and up-to-date information on the danger of disease transmission by the common communion cup is contained in a report by Noel Gill (1987) from the London Public Health Laboratory, the agency that produced the Hobbs, Knowlden, and White study 20 years earlier.[27] Gill

did not conduct research himself. Instead he reviewed approximately 100 experimental studies and clinical reports on most known transmissible diseases, giving special attention to AIDS. These “state of the art” reviews, when done by competent scholars, are more valuable to laymen than individual original studies. Because much more data is assembled, its quality readily can be assessed, findings can be compared, and conclusions realistically made. Such matters as routes of disease transmission and sites of entry into the body often emerge. Field studies, done in the real world, are especially valuable.

An example of findings from the field relates to transmission of Streptococcus bacteria. Although these organisms are frequently found in human saliva, airborne droplets entering nasal passages, rather than mouth to mouth contact, are believed to be the major route of transmission. This conclusion is supported by the fact that hospital-ward-acquired cases are reduced by placing beds at least eight feet apart.

These studies indicate that a suitable site and means of entry into the body are needed for infection and those vary with the type of organism. For example, diseases that do infect by mouth (i.e. typhoid, dysentery, salmonellosis and others) are usually gotten from contaminated food or water, in which the concentration of bacteria are very high, not from other persons.

Several follow-up studies of individuals who were exposed to Hepatitis B by direct mouth to mouth contact revealed no cases of transmission. During the infective, pro-clinical phase (i.e. just before "coming down" with the disease), a music teacher shared wind instruments with twelve students. A follow-up of the students showed that none developed the illness. In two separate incidents, students in two-day cardiopulmonary resuscitation courses practiced on the same life-sized dolls with a member of each group who was clinically infected with Hepatitis B. Several students served as mouth to mouth practice partners with the infected persons. None of the 39 participants (18 in one group and 21 in another) developed the disease.

Gill reviewed studies in which direct attempts were made to infect chimpanzees with the HIV virus (AIDS). In one study, concentrations of HIV virus were placed into the chimps' mouths and their teeth and gums brushed to the point of bleeding. No case of HIV infection took place. Experiments like this support the U.S. Centers for Disease Control's statements that AIDS is not transmitted by mouth to mouth contact.

Based on the studies noted above and many similar ones, Gill concluded that the risk of infection via the communion cup is negligible. Noting that, "No episode of disease attributable to the shared communion cup has ever been reported," he stated that there is no scientific, "support for

suggesting that the practice of sharing a communion cup should be abandoned."

The First Fifty Years

The preceding studies are the only ones revealed by a computer search of relevant literature indexes that appear worthy of review.[28] The earliest of these was Burrows and Hemmens (1943) and, as is incumbent upon good scholars, they carefully assessed all previously published works. Although the communion cup controversy was then a half a century old, Burrows and Hemmens noted that there was "a remarkable scarcity of experimental evidence." This finding is not surprising. The state of knowledge, methods of study, and equipment were all crude by today's standards. But it should be instructive to observe the basis on which the great controversy came about.

Two vehement warriors in the battle for individual cups were doctors named Charles Forbes and H. S. Anders. Forbes did not publish his work, but he made speeches (i.e. to the Rochester Pathological Society in April, 1894) and was widely quoted in newspapers. The New York Times carried articles on the controversy for a decade. Anders, described as a "passionate advocate" for individual cups, was a prolific writer. Around 1900, he engaged in a debate with a British doctor through the medical journals.[29] The emotional and demeaning quality of the exchange made it clear that this was no objective scientific discussion. A few years later a man named C. G. Page entered the fray.[30]

All three men "studied" communion sanitation and made fearsome "discoveries" about what remained "in the dregs" of communion cups, on the rims, and so forth. Oddly', even then, when they tested the wine remaining after communion, they found it, "practically sterile," but this discovery did not deter them. We are not suggesting that these men were dishonest, but their lack of knowledge and their emotions certainly caused them to stack the deck in favor of finding reasons to worry. For example, Page would swab communion cups right after use, place the swabs in solutions that foster bacterial growth, and then test them five days later. Sometimes he would grow the bacteria and post the materials to a laboratory for testing.

By observing how these men worked and noting the types of bacteria they found, Burrows and Hemmens concluded that what they were seeing was the remnants of ordinary house dust.[31] They compared the findings to what a first-year bacteriology student might see in his microscope after exposing a clean agar plate to air for several days. Alas! The great controversy in the religious world and the division in the Lord's church came about over fear of ordinary house dust. House dust—which the average human breathes in hundreds of times a day. What troubles could have been avoided if the religious world had waited in faith for a few short years!

Because there is so much material, we are tempted to go on giving competent medical opinions on this issue. There are Edward Dancewicz's comments from the U.S. Centers for Disease Control in the *Journal of the American Medical Association*.[32] Referring to the Hobbs, Knowlden, and White study and acknowledging its quality, Dancewicz agreed with them that there is little cause for alarm. We could call attention to a recent question in a German medical journal about the possibility of AIDS transmission via the common cup. The questioner asked about the worst case scenario, assuming the patient had bleeding mouth sores. Professor Doctor Maas responded that there is "little probability of infection" and cited evidence the disease is not transmitted that way.[33] And we could refer readers to the U.S. Centers for Disease Control's pamphlets and FAX Service memos that cite studies showing that family members who lived with AIDS patients, shared food utensils, razors, and even toothbrushes did not catch the disease.[34] But what benefit would still more evidence give?

There is a point at which additional proof serves no good purpose. Jesus found this situation with the Scribes and Pharisees who kept demanding more and more signs of His divinity. No one can absolutely guarantee a Christian or anyone else that he will not get a disease. There are so many factors, often unknown factors, that influence a human body. But if he does get one, the best evidence is that it will not be from the communion cup. We agree with

Dr. O. Noel Gill, of the British Public Health Service, that the fact that no disease has ever been shown to come from the common cup is strong evidence of its safety.[35] If no case of illness has been traced to the communion cup in a 100 years, the chance of being the first victim seems less than that of being hit by a falling meteor.

One of the pioneer researchers said that he was more afraid of the reverence of God for defying His will than of germs. We are, too. And, in addition, we trust the love and power of our God to protect us more than that of physicians, even beloved physicians, like those named in the back of this booklet. God is the great physician. "I am the Lord who heals you."

Summary

In conclusion, we would like to return to the themes emphasized earlier in this booklet. There is strong Biblical evidence that Jesus understood microorganisms and diseases at the time He lived on earth. His love for mankind was demonstrated beyond reasonable doubt. The Bible also is clear about how the Master established His Supper—with one loaf of bread and one cup of the fruit of the vine—a fact upon which most knowledgeable Christians agree. The scientific community, after a century of maturation, generally has come to terms with the way the Lord organized the communion, no longer seeing it as a hazard to health. Finally, our carefulness in keeping the Lord's Supper "as delivered" should not obscure its purpose. That

grand goal is our spiritual growth through a loving remembrance of the body that was given and the blood that was shed for remission of our sins.

> "For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts," (Isaiah 55:9).

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