



WISDOM QUIZ

Matthew 7:7-11

"Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you. . . . How much more shall your Father which is in heaven give good things to them that ask him?"



How well do you understand the concept of persistent prayer?

True/False

1 We can be sure that God will answer our prayers because of His promise, *"Ask, and it shall be given you. . . ."* ☒ ☐
(Read I John 5:14-15.)

- Prayer is not simply making petitions to an all-powerful God; it is a relationship between us and our Heavenly Father. Each petition must be based on God's nature and His will. Our goal must be to please God and to advance His Kingdom lest we ". . . ask amiss, that [we] may consume it upon [our] lusts" (James 4:3).

If we can base our prayer on God's Word, we will be heard. ☒ ☐
(See John 14:13.)

2 When God answers our prayers, we will know about it. ☐ ☒
(Read Daniel 10:10-21.)

- If it took twenty-one days for Daniel to learn that his prayers had been answered, we should be patient when we make our petitions to God. If Daniel had received an instantaneous response, he would have missed rich and intimate days of prayer and fasting (seeking and knocking) and the special strengthening from the Lord that came with it.

God hears every prayer from Christians even though His answer is sometimes "No." ☒ ☐
(See Psalm 66:18.)

3 Praying is positive thinking: "Whatever the mind can conceive and believe, it can achieve." ☐ ☒
(Read I John 3:19-22.)

- Prayer is born out of the concerns of God, not the selfish lusts of man. As we delight ourselves in Him, His desires will become our desires, and we will know what to pray for. Our prayers will grow out of keeping His commandments and doing those things that are pleasing to Him. The answers we receive will be the result of God's power—not human energy.

God waits for us to pray before He gives us answers. ☐ ☒
(See Isaiah 65:24.)

4 To seek and knock is another way of saying, "God helps those who help themselves." ☐ ☒
(Read John 15:5.)

- It was Benjamin Franklin, not God, who said in 1736, "God helps those who help themselves." He adapted the statement from Aesop's Fables written in 550 B.C.: "The gods help them that help themselves." In reality it is God who works in us, giving us the desire and the power to do His will. (See Philippians 2:13.)

Prayer will assure prosperity. ☐ ☒
(See Luke 11:9-13.)

Total Correct _____

The Mercies of God

1. The mer-cies of God! what a theme for my song, Oh! I nev-er could
num-ber them o'er; They're more than the stars in the heav-en-ly dome,
CHORUS
Or the sands of the wave-beat-en shore. For mer-cies so great, what re-
turn can I make? For mer-cies so con-stant and sure? I'll love Him, I'll
serve Him with all that I have As long as my life shall en-dure.

WISDOM WORKSHEET ON MATTHEW 7:7-11



“Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you:



“For every one that asketh receiveth; and he that seeketh findeth; and to him that knocketh it shall be opened.



H. Armstrong Roberts

“Or what man is there of you, whom if his son ask bread, will he give him a stone? Of if he ask a fish, will he give him a serpent? If ye then, being evil, know how to give good gifts unto your children, how much more shall your Father which is in heaven give good things to them that ask him?”

In giving the necessities of life, God prescribed a sequence opposite to our natural inclinations.

Linguistics

Languages,
Grammar, Vocabulary,
Communication



ASK

Greek: αἰτέω (eye-TEH-oh)

DEFINITION: To appeal to one who is in authority.

INSIGHT: The tense used for ask, seek, and knock indicates a continuing process.

SEEK

Greek: ζητέω (dzay-TEH-oh)

DEFINITION: To inquire actively and diligently with a goal in mind.

KNOCK

Greek: κρούω (KROO-oh)

DEFINITION: To strike or rap on a door.

FISH

Greek: ἰχθύς (ikh-THOOCE)

INSIGHT: Next to bread, fish was the most common food in Jesus' day.

SERPENT

Greek: ὄφις (AW-fiss)

INSIGHT: A parent may refuse a request by a child, but will he mock his child with a useless (rock) or dangerous (snake) substitute?

Do Resource A.

EVIL

Greek: πονηρός (paw-nay-ROSS)

DEFINITION: Hurtful, malicious, degenerate, or culpable in character.

GIVE

Greek: ἐπιδίδωμι

(eh-pih-DIH-doe-me)

INSIGHT: The verb form indicates what is given vs. how it is given.

GOOD

Greek: ἀγαθός (ah-gah-THOSS)

DEFINITION: That which is beneficial, helpful, or wholesome in character and effect.

CHILDREN

Greek: τέκνον (TEK-nonn)

INSIGHT: A close relationship.

Do Resource B.

History

Archaeology,
Geography, Prophecy,
Music, Art, Literature



How did a soldier who tasted defeat receive victories he did not request?



Walter Williams,
the last Civil War
veteran, died in 1959.

An unknown Confederate soldier wrote these words on asking and receiving:

“I asked God for strength, that I might achieve; I was made weak, that I might learn humbly to obey. . . .

“I asked for health, that I might do greater things; I was given infirmity, that I might do better things. . . .

“I asked for power, that I might have the praise of men; I was given weakness, that I might need God. . . .

“I asked for all things, that I might enjoy life; I was given life, that I might enjoy all things. . . .

“I got nothing that I asked for—but everything I had hoped for. Almost despite myself, my unspoken prayers were answered. I am among all men, most richly blessed!”

How did presumption hinder a great man's asking, seeking, and knocking?



William Carey
1761-1834

William Carey translated God's Word into 34 languages. He inspired many with his words, “Attempt great things for God. Expect great things from God.” His ministry could have been much greater, however, if he had waited until after knocking.

Do Resource C.

Science

Chemistry, Biology,
Astronomy, Geology,
Physics, Mathematics



How do rivers illustrate the reward of giving after receiving?



God promises that those who ask will receive. For what shall we seek? We must seek ways to give. "... *Freely ye have received, freely give*" (Matthew 10:8).

The necessity and rewards of giving are illustrated in

how drops of water become mighty rivers. Rivulets of rainwater seek to give to brooks. Brooks, in turn, seek to give to streams. As each gives, it is transformed into a mighty river, which brings life to all of its surroundings.

Out of a giving Christian "... *flow rivers of living water*" (John 7:38). The Dead Sea illustrates what happens when giving stops.

How does the development of a wave illustrate key factors in asking?

The conditions that create ocean waves include friction, pressure, and sudden changes in surroundings.



Ocean waves

Do Resource D.

How do equations relate to asking, seeking, and knocking?

An equation requires that all of its factors be satisfied. Similarly, God promises to satisfy all of our needs.



Fulfilled equations guide rockets.

Do Resource E.

Law

Government,
Economics, Logic



How do laws against fraud relate to wrong motives in asking?

God will not give to those who want to consume what they receive upon their own lusts. (See James 4:3.)

A person who focuses on fulfilling his lusts may actually misrepresent the facts to others and be guilty of fraud.

Fraud is "a false representation of a matter of fact, whether by words or by conduct, by false or misleading allegations, or by concealment of what should have been disclosed, that deceives and is intended to deceive another so that the individual will act upon it to his or her legal injury."



King Charles II and the English Parliament passed the Statute of Frauds in 1677, which required contracts to state clearly the full agreement.

How does a petition to a court of law illustrate three levels of supplication?

A petition is an urgent request for the court to use its power in a matter under its jurisdiction. Similarly, supplication is an emotional plea for God to work in a particular situation.

A petition and a supplication must go beyond the emotional level, however,

and be based on facts which lead to justice rather than to personal vengeance. The petitioner must submit his will to whatever decision the court renders.



A judge considering a petition

Do Resource F.

Medicine

Health,
Nutrition, Behavior,
Counseling



How do power and strength relate to asking, seeking, and knocking?



Crane operator



Weight lifter

The crane operator is lifting 30 tons, and the weight lifter is lifting 317 pounds. Which man has greater *power*? Which man has greater *strength*?

Strength is the capacity to do a certain action. Power is the ability to provide resources to accomplish an action. By asking, seeking, and knocking, a Christian becomes a channel of God's power, as was Elisha, who captured a whole army by God's power. (See I Kings 6.)

Similarly, a piece of paper can become a channel of power in the hands of the right person. A famous author wrote on a piece of paper, and the paper became worth \$6,000. That is the power of words.

A wealthy man wrote on a piece of paper, and it became worth \$60 million. That is the power of money.

God wrote on a piece of paper, and it transformed millions of lives. That is the power of the Gospel. In each case the paper's value changed as it became a channel of communication.

How does the gallbladder illustrate God's design for channels of good gifts?

The gallbladder is simply a pouch. It receives from the liver a fluid called *bile*. If the bile remains in the gallbladder, problems will result. When the gallbladder gives bile, however, marvelous benefits occur.

Do Resource G.



How many of these questions can you answer before studying the resources?

WHAT DOES GOD MEAN BY "GOOD THINGS"?



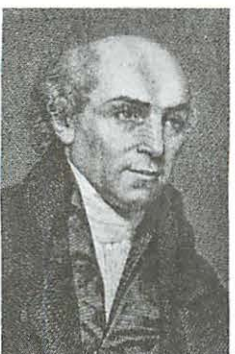
- How is ἀγαθός the key to knowing good things? . . . 2515
- Why did God warn us about seeking good things? . 2515
- How can good things come from pain and hardness? 2515
- Why did God contrast good things with snakes and rocks? 2516
- How can we separate "good" from "things"? . 2516

HOW CAN WE TEST OUR OWN HEARTS?



- What heart conditions disqualified a king? 2517
- How is a child's heart like a windbag? 2518
- How does a broad mind shrink a heart? 2519
- How does a fold in the heart destroy it? 2520
- What is a pure heart? . . . 2521
- What makes a heart bright? 2522

HOW DOES PRESUMPTION HINDER SEEKING?



- How did a conflict cause William Carey to seek salvation? 2525
- How did Mr. Carey learn to trust the Word of God? . 2527
- How did William Carey learn to ask and receive? . 2530
- When did William Carey fail in counting the cost? . 2536
- How did self-rejection cause pain from seeking wrong things? 2545

WHAT DO WAVES TEACH ABOUT ASKING?



- How does the sea act like a violin string? 2547
- What is a tsunami? 2549
- How do old and young waves differ? 2551
- What causes waves to unleash their power? . . . 2553
- What factors determine a wave's destructiveness? . 2555
- What dissipates a wave? . 2556

HOW ARE EQUATIONS LIKE PRAYERS?



- What is required for a solution to be perfect? . . . 2557
- How can a person know if a gift is good? 2558
- What is necessary before a person can experience the fullness of a gift? . . . 2559
- What is required before a problem can be solved? . 2560
- How does acknowledging God solve problems? . 2561

HOW ARE PETITIONS LIKE SUPPLICATION?

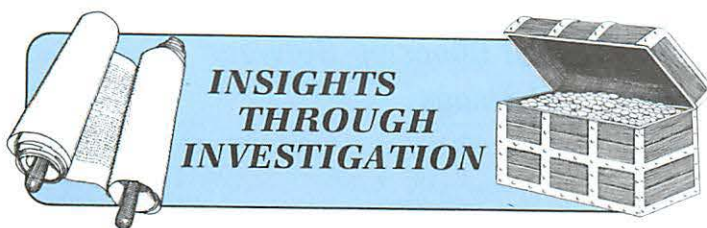


- What is a petition? 2563
- What are the facts in a lawsuit called? 2564
- What are two types of contempt of court? 2565
- What is a tribunal? 2566
- What do *prayer for relief*, *special prayer*, and *general prayer* mean in law? . 2566
- What is found in a "discovery"? 2568

HOW DOES THE GALLBLADDER GIVE GIFTS?

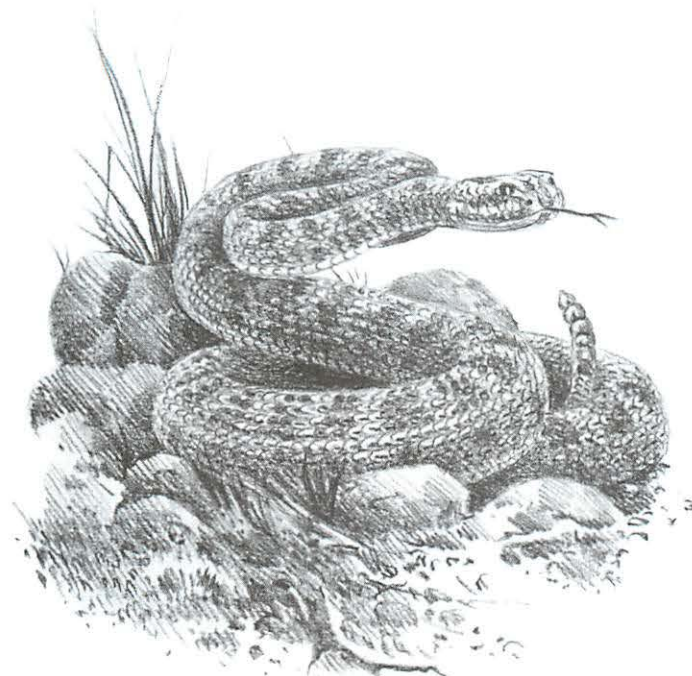


- What is the body's most bitter-tasting fluid? 2571
- How does the entero-hepatic circulation system work? 2572
- What is chyme? 2572
- How does the gallbladder increase one's energy? . . 2573
- What are gallstones? . . . 2577
- How can gallstones be removed without surgery? . 2578



INSIGHTS THROUGH INVESTIGATION

HOW DOES GOD'S DESCRIPTION OF "GOOD THINGS" DIFFER FROM OUR IDEA OF "GOOD THINGS"?



There is good reason for the illustrations Jesus used of a snake and a stone when talking about the gifts of a father. A snakebite is painful, and the rock is hard. Ironically, some of the most valuable gifts God gives to His children are unexpectedly painful and hard. When receiving these gifts, we are prone to misjudge the intent of our Heavenly Father.

What can you discover about "good things" from this passage?

εἰ οὖν If therefore	ὁμοῖς ye,	πονηροὶ evil	ὄντες being,	οἴδατε know [how]
δόματα gifts	ἀγαθὰ good	διδόναι τοῖς to give	τέκνοις ὑμῶν, to your children,	
πόσῳ how much	μᾶλλον more	ὁ πατὴρ ὑμῶν your Father	ὁ who [is]	ἐν in
τοῖς the	οὐρανοῖς heavens	δώσει will give	ἀγαθὰ good things	τοῖς to them that
αἰτοῦσιν ask	αὐτόν; him?			

The Greek word ἀγαθός (ah-gah-THOSS) is a primary word. It simply means "good." The verse could, therefore, be translated, "... how much more shall your heavenly Father give good to them that ask him?"

The following verses all contain the word ἀγαθός and are translated in the same way.

- "A good [ἀγαθός] man, out of the good [ἀγαθός] treasure of his heart bringeth forth that which is good [ἀγαθός] . . ." (Luke 6:45).
- "Why callest thou me good [ἀγαθός]? none is good, [ἀγαθός] save one, that is, God" (Luke 18:19).
- "I am the good [ἀγαθός] shepherd: the good [ἀγαθός] shepherd giveth his life for the sheep" (John 10:11).
- "I would have you wise unto that which is good [ἀγαθός], and simple concerning evil" (Romans 16:19).
- "Let no corrupt communication proceed out of your mouth, but that which is good [ἀγαθός] to the use of edifying . . ." (Ephesians 4:29).
- "See that none render evil for evil unto any man; but ever follow that which is good [ἀγαθός], both among yourselves, and to all men" (I Thessalonians 5:15).

There are also verses which warn us about the danger of things:

- "But what **things** were gain to me, those I counted loss for Christ. Yea doubtless, and I count all **things** but loss for the excellency of the knowledge of Christ Jesus my Lord: for whom I have suffered the loss of all **things**, and do count them but dung, that I may win Christ" (Philippians 3:7-8).
- "And he said unto them, Take heed, and beware of covetousness: for a man's life consisteth not in the abundance of the **things** which he possesseth" (Luke 12:15).

The Pain and Hardness of Good and the Pain and Hardness of Things

When we hear the verse, "... How much more shall your Father which is in heaven give good things to them that ask him," we tend to think of material possessions which are important to us. Yet by desiring to have things, we open ourselves up to the pain of hurtful sorrows.

Longing for anything beyond basic food and clothing is a sign of discontent and carries with it the warning of I Timothy 6:9–10: “*But they that will be rich fall into temptation and a snare, and into many foolish and hurtful lusts, which drown men in destruction and perdition. For the love of money is the root of all evil: which while some coveted after, they have erred from the faith, and pierced themselves through with many sorrows.*”

If, on the other hand, we focus on the word *good*, we are able to concentrate on those things which have eternal value and cannot be taken from us. “*While we look not at the things which are seen, but at the things which are not seen: for the things which are seen are temporal; but the things which are not seen are eternal*” (II Corinthians 4:18).

Paul warned Timothy to flee from things that are coveted “. . . and follow after righteousness, godliness, faith, love, patience, meekness” (I Timothy 6:11). It is significant to notice that God gives these “good gifts” through beneficial pain. For example, patience comes through tribulation and understanding of God’s righteous statutes comes through affliction.

David testifies of this in Psalm 119: “*Before I was afflicted I went astray: but now have I kept thy word. Thou art good, and doest good. . . . It is good for me that I have been afflicted; that I might learn thy statutes. . . . I know, O Lord, that thy judgments are right, and that thou in faithfulness hast afflicted me*” (Psalm 119:67–68, 71, 75).

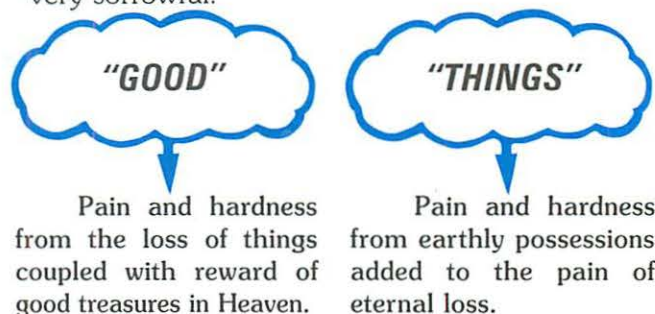


The rich young ruler experienced a firsthand encounter with the conflict between *good* and *things*. He went away sorrowing because his focus was on *things* rather than on that which was *good*.

The Test of Choosing Between Good and Things

It was the rich young ruler who asked, “*Good Master, what shall I do to inherit eternal life?*” (Luke 18:18). Jesus immediately attempted to focus his attention on the true meaning of *good* by asking, “*Why callest thou me good? none is good, save one, that is, God*” (Luke 18:19).

The rich man failed to comprehend the meaning of Jesus’ words as he tried to add eternal life to the things he already possessed. Jesus, however, forced him to make a choice between the two. The rich man chose *things* and went away “very sorrowful.”



PROJECT

Asking, seeking, and knocking will differ depending on whether we are seeking *good* or whether we are seeking *things*. If we are seeking *good*, we will ask for eternal realities, seek the Lord, and knock on doors of eternal opportunity.

If, on the other hand, we are seeking *things*, we will ask for material needs and wants, seek after them, and knock on doors which stand between us and obtaining them. God wants to direct our focus away from temporal things. Therefore, He has given the following instructions about how *things* affect our prayers. Study and discuss each verse.

Things about which we pray	How they affect our prayers
1. Things that delight the heathen (Mt. 6:7–8)	Vain repetition
2. Things we need each day (Mt. 6:25, 31)	Anxiety
3. Things that affect the future (Mt. 6:34)	Fear and unbelief

Date completed _____ Evaluation _____



HOW DOES SEEKING THE LORD REQUIRE AN UNDERSTANDING OF THE CONDITIONS OF OUR HEARTS?



In a desperate attempt to claim at least some blessing from seeking the Lord, King Saul grabbed Samuel's cloak. As the cloak ripped, God pronounced judgment on Saul because his heart was not right as he sought the Lord.

After God rejected Saul and his descendants from ruling over Israel, God instructed Samuel to anoint a new king. When Samuel saw Jesse's oldest son, he was impressed with his handsome features and said, "Surely this is the Lord's anointed. . . ."

"But the Lord said unto Samuel, Look not on his countenance, or on the height of his stature; because I have refused him: for the Lord seeth not as man seeth; for man looketh on the outward appearance, but the Lord looketh on the heart" (I Samuel 16:7).

Why Saul did not find the Lord when he sought Him

God explained to Samuel why He was rejecting Saul from being king: "It repenteth me that I have set up Saul to be king: for he is turned back from following me, and hath not performed my commandments. And it grieved Samuel; and he cried unto the Lord all night" (I Samuel 15:11).

• Which condition best describes Saul's heart?

- ☐ 1. Double heart
- ☐ 2. Hard heart
- ☐ 3. Froward heart
- ☐ 4. Proud heart
- ☐ 5. Fearful heart
- ☐ 6. Perverse heart
- ☐ 7. Deceitful heart
- ☐ 8. Backsliding heart
- ☐ 9. Foolish heart

• Which condition best describes David's heart?

David is described as a man after God's own heart. (See Acts 13:22.) He earned this title because of the condition of his heart as he sought the Lord.

- ☐ 1. Pure heart
- ☐ 2. Broken heart
- ☐ 3. Upright heart
- ☐ 4. Clean heart
- ☐ 5. Contrite heart
- ☐ 6. Perfect heart
- ☐ 7. Understanding heart
- ☐ 8. Wise heart
- ☐ 9. Sound heart

WHAT CONDITIONS OF THE HEART HINDER US FROM SEEKING THE LORD?

PROJECT 1

Study the following list of heart conditions. Then number them in the order in which they might appear in your life if you wandered from the Lord.

- ☐ **Double heart**
- ☐ **Hard heart**
- ☐ **Froward heart**
- ☐ **Proud heart**
- ☐ **Fearful heart**
- ☐ **Perverse heart**
- ☐ **Deceitful heart**
- ☐ **Backsliding heart**
- ☐ **Foolish heart**

1 FOOLISH HEART

Scripture reveals that “Foolishness is bound in the heart of a child . . .” (Proverbs 22:15). If the foolishness is allowed to continue as the child grows, he will become known as a simple fool and in need of the instruction of Proverbs.

If he rejects instruction, his heart will become darkened as described in Romans 1:21: “Because that, when they knew God, they glorified him not as God, neither were thankful; but became vain in their imaginations, and **their foolish heart was darkened.**”

The Hebrew word for “foolish,” אִוִּילִת (ihv-VEH-leth), means “silliness”; one who shows himself by his words or actions to be deficient in good judgment. The Latin word for “foolish” is *folis*, which means “bellows” or “windbag.” A foolish heart is unwise, indiscreet, shortsighted, and irresponsible.

When a person with a foolish heart seeks the Lord, he will develop a wise heart.

• WISE HEART

“The wise in heart will receive commandments . . .” (Proverbs 10:8). One of the means by which a person seeks the Lord is to learn His statutes

and commandments. That person’s heart attitude is one of not simply listening but actively searching and eagerly receiving. This heart attitude is the first need of a child.

In the course of learning God’s commandments, a child must develop the fear of the Lord. “*The fear of the Lord is the beginning of wisdom . . .*” (Proverbs 9:10).

2 DECEITFUL HEART

In Jeremiah 17:9, God explains that “*the heart is deceitful above all things, and desperately wicked: who can know it?*”

The Hebrew word for “deceit,” עֲקֹב (aw-KOBE), means “crafty; false; treacherous.” A deceitful heart is untrustworthy, underhanded, and dishonest. It is sneaky and uses cunning for selfish advantage. It is given to cheating or misleading.

The Latin word for “deception” is *decipio*; it means “to take aside; to ensnare.” A deceitful heart is unstable, turning aside from God’s way and going its own way.



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“... They were turned aside like a deceitful bow” (Psalm 78:57). To avoid the danger of a “deceitful bow” a stabilizer is added. The stabilizer brings balance to the bow and helps the archer shoot accurately.

By seeking the Lord we turn a deceitful heart into an upright heart.

• SOUND HEART

In contrast to a deceitful heart, God describes the sound heart: “*A sound heart is the life of the flesh: but envy the rottenness of the bones*” (Proverbs 14:30).

The Hebrew word for “sound,” מְרִפָּא (mar-PAY), means “wholesome; healthy; strong; sturdy.” A sound heart is curative to the one who has it and to those to whom it ministers. “*A wholesome [sound] tongue is a tree of life . . .*” (Proverbs 15:4). A sound heart is rooted in truth; it is firm and cannot be overthrown or turned aside.

3 FEARFUL HEART

God has not given us the spirit of fear (see II Timothy 1:7). Therefore, a fearful heart is a consequence of our fallen natures and a condition with which we need to deal early in life.

Hundreds of times in Scripture we are warned either *not* to fear or to *stop* fearing. Fear gives Satan the freedom he needs to bring about destruction and chaos in our lives. (See Proverbs 10:24.)

The Hebrew word מַסַּס (maw-SASS), meaning “fear,” can also be translated “to be liquid” or “to flow easily.” Thus, the statement is recorded in Scripture: “. . . The hearts of the people melted . . .” (Joshua 7:5).

The Hebrew word for “fear” also means “to be carried headlong; to be hasty; to do something too quickly.” Fear produces rash and impetuous actions about which we are warned in Proverbs 29:25: “*The fear of man bringeth a snare. . .*”

Fear is demonstrated in various degrees from mild anxiety to paralyzing terror. A fearful person will be distressed, apprehensive, panicky, anxious, worried, easily intimidated, and—worst of all—drawn away from the Lord by a lack of faith.



When a flying squirrel is fearful, it becomes paralyzed, goes into shock, and dies. Similarly, King Saul became disabled through fear and subsequently lost the kingdom. He confessed, “. . . I have transgressed the commandment of the Lord, and thy words: because I feared the people, and obeyed their voice” (I Samuel 15:24).

• UNDERSTANDING HEART

A fearful heart can be calmed and strengthened by the words of a courageous person.

“*Strengthen ye the weak hands, and confirm the feeble knees. Say to them that are of a fearful heart, Be strong, fear not: behold, your God will come with vengeance, even God with a recompence; he will come and save you*” (Isaiah 35:3–4).

By seeking words of encouragement from Scripture, we will be able to submit our fear of man and circumstances to God and His power. As we learn to see our situations from God’s perspective, we will gain wisdom and understanding.

The Hebrew word for “understanding,” בִּינָה (BEAN), means “to separate mentally.” Once we distinguish man’s perspective from God’s point of view, we can then consider a situation without becoming fearful.

4 PROUD HEART

God resisteth the proud and will not respond to those who regard sin in their hearts. Thus, to attempt to seek Him with a proud heart is a futile exercise. “*An high look, and a proud heart, and the plowing of the wicked, is sin*” (Proverbs 21:4).

A person who seeks God but gives equal credibility to his own thoughts and the thoughts of others is guilty of a proud heart. The world acclaims such a person as being open-minded or broad-minded, and this is precisely the definition of רָחֵב (raw-KAWB), the Hebrew word for “pride.”

It means to be “roomy” in any and every direction, “to be broad, large, wide, or at liberty.” A broad-minded person is one who rejects the restraints of God’s wisdom and the limitations of Godly disciplines.

From the word *pride* we derive the concept of being puffed up and inflated with our own importance or having an exaggerated opinion of ourselves.

Pride reserves for myself the right to make final decisions. Pride refuses to honor God as God. Pride builds all of life around myself. Pride believes that I have achieved what God and others have done for me.

• CONTRITE HEART

The opposite of a proud heart is a contrite heart. The Hebrew word for “contrite,” דָּכָה (daw-KAW), means “to collapse” or “to shrink.” As the proud heart expands, the contrite heart decreases.

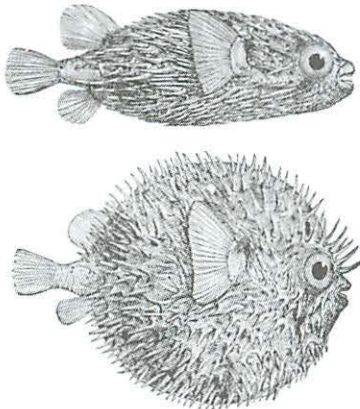
God pointed this out to King Saul: “. . . *When thou wast little in thine own sight, wast thou not made the head of the tribes of Israel, and the Lord anointed thee king over Israel? . . . Wherefore then didst thou not obey the voice of the Lord . . . ?*” (I Samuel 15:17–19).

A contrite heart is conscience-stricken, sorrowful, regretful, penitent, remorseful, and humbled.

One of the primary purposes of seeking the Lord is to recognize and remove pride from our hearts so we can experience grace from the Lord. “. . . *God resisteth the proud, and giveth grace to the humble*” (I Peter 5:5).

John the Baptist conquered a proud heart and demonstrated a contrite heart by decreasing his own estimation of himself and his ministry when he stated, “He must increase, but I must decrease” (John 3:30).

Jesus commended John by saying there was none greater born among women: “Verily I say unto you, Among them that are born of women there hath not risen a greater than John the Baptist: notwithstanding he that is least in the kingdom of heaven is greater than he” (Matthew 11:11).



The puffer fish (also called the globe-fish or blowfish) illustrates the Hebrew word for “pride.” When this fish feels threatened by an enemy, it inflates itself with water and appears to be bigger and more formidable than it actually is.

Puffer fish

5 BACKSLIDING HEART

“The backslider in heart shall be filled with his own ways [bored with life] . . .” (Proverbs 14:14). Such a person will find no pleasure in seeking the Lord.

A backslider is one who, after being committed to the ways of God, turns away from them and slips back to his own ways.

The Hebrew word for “backsliding,” סוּג (SOOG), means “to turn away either suddenly or gradually.” Seeking God is pictured in Habakkuk 3:19: “The Lord God is my strength, and he will make my feet like hinds’ feet, and he will make me to walk upon mine high places. . . .”

The picture of backsliding is falling down before evil and giving up ground to Satan. “A righteous man falling down before the wicked is as a troubled fountain, and a corrupt spring” (Proverbs 25:26).

• PERFECT HEART

David resolved, “I will behave myself wisely in a perfect way . . . I will walk within my house with a perfect heart” (Psalm 101:2).

The Hebrew word for “perfect” here, תָּם (TOME), implies not sinlessness but rather integrity and truthfulness.

There is good reason for David’s resolution, because God promises: “For the eyes of the Lord run to and fro throughout the whole earth, to shew himself strong in the behalf of them whose heart is perfect toward him . . .” (II Chronicles 16:9). This verse uses a different Hebrew word for “perfect” — שָׁלֵם (shaw-LAME), meaning “full; just; ready; perfect.”

A perfect heart is one which is completely open to God. It is one that does not cover secret sin or hold on to that which is forbidden by God. A person who desires to seek the Lord with a perfect heart must be totally open and transparent before Him.

In the final analysis, a perfect heart is a mature heart—one that is established through a proper response to suffering. “But the God of all grace, who hath called us unto his eternal glory by Christ Jesus, after that ye have suffered a while, make you perfect, stablish, strengthen, settle you” (I Peter 5:10).



If the cecropia moth fails to struggle in leaving its cocoon, vital fluids will not be forced into its wings and they will not be perfected for flight.

6 DOUBLE HEART

The Hebrew word for “double,” כָּפַל (kaw-FAHL), means “to fold over.” It is contrasted with the word *simplicity*, which in Latin comes from *sin*, meaning “without,” and *plico*, meaning “fold.” That which is unfolded is plain and open for all to see, whereas that which is folded is capable of hiding something within the fold.

A person with a double heart is duplicitous. He is guilty of being two-faced, double-dealing, or double-crossing. He is known as a two-timer or one who lives a double life.

The actions of a person with a double heart are explained in Psalm 12:2: “They speak vanity every one with his neighbour: with flattering lips and with a double heart do they speak.”



A double heart produces a double mind, which is pictured by God as a wave of the sea tossed to and fro by the wind.

A double-minded person is not capable of holding a single position. He vacillates with two conflicting opinions and agendas and is, therefore, unstable in all his ways. (See James 1:5–8.)

• PURE HEART

In James 4:8, God gives clear direction to a person with a double heart: “Draw nigh to God, and he will draw nigh to you. Cleanse your hands, ye sinners; and purify your hearts, ye double-minded.”

The Greek word for “pure,” ἀγνίζω (hōg-NIH-dzo), means “empty of deception; clean; clear.” Purity involves a transparent manner of life which is described in II Corinthians 1:12: “For our rejoicing is this, the testimony of our conscience, that in simplicity [without fold] and godly sincerity, not with fleshly wisdom, but by the grace of God, we have had our conversation in the world. . . .”

A pure heart is one that has been tested in the fire and found to be without conflicting motives or a hidden agenda. Only those with pure hearts can stand in the presence of a Holy God. (See Psalm 24:4 and Matthew 5:8.)

7 FROWARD HEART

A froward heart is one that is false, crooked, and perverse. The word *froward* comes from the Middle English roots *fro*, meaning “away or back,” and *ward*, meaning “to turn.” A froward heart is one that turns away from the right course and looks back to that which is forbidden.

“They that are of a froward heart are abomination to the Lord: but such as are upright in their way are his delight” (Proverbs 11:20).

A froward heart is stubborn, contrary, disobedient, and obstinate. One who has a froward

heart is not willing to yield or comply with what is required of him.

God describes the destructiveness of a froward heart in Proverbs 6:12–14: “A naughty person, a wicked man, walketh with a froward mouth. He winketh with his eyes, he speaketh with his feet, he teacheth with his fingers; Frowardness is in his heart, he deviseth mischief continually; he soweth discord.”



Our Lord cautions us to “remember Lot’s wife” (Luke 17:32). Her disobedience to God’s clear command illustrated a froward heart. A salt pillar in the Dead Sea stands as a reminder of God’s judgment on frowardness.

• UPRIGHT HEART

The word *upright* means “honest; ethical; true.” An upright heart is one which is principled, trustworthy, outstanding, and reliable. One who has an upright heart is a person with integrity. He is a person who has character that is approved by God. Uprightness is that which is right in the eyes of God and others.

“Lo, this only have I found, that God hath made man upright; but they have sought out many inventions” (Ecclesiastes 7:29).

8 PERVERSE HEART

The Hebrew word for “perverse,” עָוָה (aw-VAW), means “to be crooked.” A perverse heart has an innate tendency to veer from that which is right and good; it is incapable of standing alone for truth and follows the path of least resistance.

“A man shall be commended according to his wisdom: but he that is of a perverse heart shall be despised” (Proverbs 12:8).

The Latin derivation of *perverse* is the word *pervertere*, which means “to turn the wrong way; to be bent; to twist; to distort.”

God disciplines a perverted heart with trouble so a person in such a condition will turn from his ways and seek the Lord.



U.S. Travel Service

Following the course of least resistance causes rivers and men to be crooked.

• CLEAN HEART

A clean heart is one which is morally pure. The word *clean* is also used in connection with the statutes and judgments in the Law of the Lord. David prayed, “Create in me a clean heart, O God; and renew a right spirit within me” (Psalm 51:10).

A heart that is free from iniquity and impurity will produce an excellent spirit and a radiant countenance. *Clean* is derived from the Middle English word *clene*, which means “bright” as well as “uncontaminated.”

A clean heart is a prerequisite for and a result of seeking the Lord. We enter God’s presence in the righteousness of Christ, and we are cleansed by the Word which He speaks to us. (See Psalm 15.)

9 HARD HEART

Failure to deal with destructive conditions of the heart will result in a hard heart. God disciplines the previously named conditions of the heart, but He judges a hard heart.

The Hebrew word for “hard,” קָשָׁה (kaw-SHAW), means “to be dense or tough.” It also means “to be stiff-necked” or “to be cruel and severe.”

The Greek word for “hard” (heart) is σκληρύνω (sklay-ROO-no), and it means “to render stubborn.” The medical term *sclerosis* comes from this Greek word and means “a thickening or hardening of a body part such as an artery, from

tissue overgrowth, disease, or by deposits.” A sclerotic person is obstinate, as illustrated in Hebrews 3:7–10:

“Wherefore (as the Holy Ghost saith, To day if ye will hear his voice, Harden not your hearts, as in the provocation, in the day of temptation in the wilderness:

“When your fathers tempted me, proved me, and saw my works forty years. Wherefore I was grieved with that generation, and said, They do alway err in their heart; and they have not known my ways. So I sware in my wrath, They shall not enter into my rest).”

• BROKEN HEART

“The Lord is nigh unto them that are of a broken heart . . .” (Psalm 34:18). The Hebrew word for “broken” in this verse is שָׁבַר (shaw-BAR), which means “to burst; to crush; to hurt; to fracture into two or more pieces; to shatter; to tear.”

Each of these words describes the experiences which would be appropriate in repenting of our sins, in disciplining ourselves toward the goal of spiritual growth, and in suffering for righteousness’ sake.

Very often God must use extreme measures to break our hard hearts. When He does, however, we are motivated as never before to seek the face of the Lord. David praises a broken heart in his Psalm of repentance: “The sacrifices of God are a broken spirit: a broken and a contrite heart, O God, thou wilt not despise” (Psalm 51:17).

PROJECT 2

God rejected Saul’s leadership and chose David to be king because of the contrasting conditions of their hearts. Read the biography of Saul in I Samuel 9–19, identifying as many destructive heart conditions as you can in his life. List the heart conditions, and then indicate an example after each one.



Bible Art Series, Standard Publishing, Cincinnati

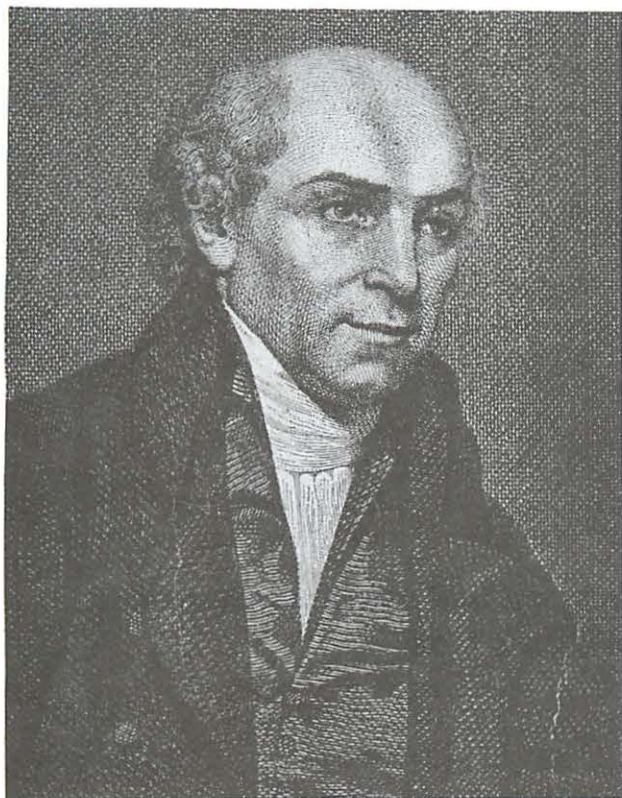
What was the condition of Saul’s heart when he faced Goliath? What was the contrasting condition of the heart of David?

Date completed _____ Evaluation _____



HISTORY RESOURCE

HOW DID THE PRESUMPTION OF A GREAT PLODDER HINDER HIS ASKING, SEEKING, AND KNOCKING?



William Carey, John Brown Myers, Ernst Kautmann

**William Carey
(1761–1834)**

Gazing at the handmade map of the world which hung above his cobbler's bench, tears filled the young man's eyes. Millions of men, women, and children had not even heard the name of the One who alone could rescue them from lives tormented by fear and tortured by evil spirits.

Who would tell them? Who would love them enough to give their lives in a far-off, heathen land? Would any dare to relinquish the comforts of family, friends, and homeland to share the light of the Gospel with the hopeless refuse of humanity?

Turning his tears into fervent prayer, the young man pled with God for the souls of the

heathen. At every opportunity he urged Christians to fulfill the command of the Great Commission to go and teach *all* nations.

Again and again his persuasive pleas met with apathy and even ridicule. After all, who was he, an uneducated shoemaker from an insignificant English town, to think he could instruct the world in foreign missions?

In spite of the opposition, he continued to ask, seek, and knock in behalf of those who had never heard of the saving power of God. His persistence and dedication ultimately resulted in the conversion of thousands and even millions of souls. Today his name is recognized all over the world as the Father and Founder of Modern Missions—William Carey.

William Carey was used as God's tool to ignite the interest of an apathetic world in foreign missions. He was an effective minister of the Gospel and an amazing translator of God's Word. He had a pure and sincere zeal coupled with unfeigned love for the men and women who were lost in the darkness and degradation of sin.

Yet, there were areas of his life that he was unwilling to bring under the high-powered microscope of God's Word. These areas were to become the seeds of disintegration which would later damage and in some cases even cripple the very movement he was instrumental in founding.



Greystone Press

William Carey's study of nature must have caused him to view the Church leaders of his day as moles whose eyes were blinded to the needs of their world.

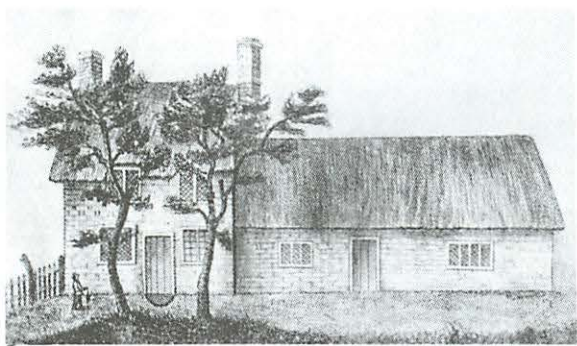
The date was August 17, 1761. The British Isles were awakening spiritually under the fiery preaching of John and Charles Wesley and George Whitefield. The Established Church, however, had shut its eyes to the blazing spiritual spotlight which was being focused upon its dead works.

It was into this atmosphere that William Carey was born. He was the firstborn child of Edmund Carey, a poor tannery weaver. From his infancy William was loved and encouraged. His Godly grandmother, who was living with the family at the time, took a special interest in her grandson. She, like Timothy's grandmother Lois, invested many hours in little William and made a lasting impact on his life. (See II Timothy 1:5.)

Although the family was part of the Established Church, William was taught early the importance of reading Scripture. Perhaps, however, because he did not see its direct application to his own life he turned from the Bible to more exciting avenues of reading.

Later William thanked God for the daily regularity with which his parents drilled him on Scripture. "My mind," he said, "was furnished with themes, which afterwards were often influential on my heart, when I had little leisure."

When William was about six years old, Mr. Carey was asked to take the position of schoolmaster and parish-clerk which had been his father's position for many years before him. A devoted church member and an avid reader with a love for teaching, Mr. Carey was delighted to accept the position. It was in a simple thatch-roofed schoolhouse that Mr. Carey had the privilege of teaching his own children to love learning.



William's home in Paulers Pury was attached to one end of the thatched schoolhouse where his father taught.

The new home provided special enjoyment for young William. Larger than the tiny cottage in which he had been born, this house afforded enough space for William to have his own room. Through the wise tolerance of his mother, the room became home for a collection of insects, birds in homemade cages, and plants.

William loved the outdoors. His younger brother, Tom, remembered: "I was often carried in his arms on many of his walks, and he would show

me with delight the beauties of the growth of plants." His supreme delight was to study every living thing that crossed his path. Though he loved to learn, William much preferred the classroom of God's creation to the four confining walls of the schoolhouse.

William read almost every book he could find. He did not like religious books at all but was fascinated with true stories of adventure. In his elm tree perch, he loved to read and study the lives of those who had explored lands and peoples overseas. In fact, William talked so much about brave Christopher Columbus that his playmates called him by that name.

Far more than simply a dreamer, William liked to have his own adventures. Once while climbing a tree to reach a bird's nest, he fell. Stunned and badly hurt, he was confined to his wearisome bed for several days. As soon as he could, however, he set out again to conquer the tree.

His mother saw him with the fairly won bird's nest and asked him if he had been climbing the tree again. "I couldn't help it Mother," he replied. "I really couldn't. If I begin a thing, I must go through with it."

His sister, Mary, noted that "whatever he began, he finished. Difficulties never discouraged him." God was building into him the character he would need for the rest of his life.

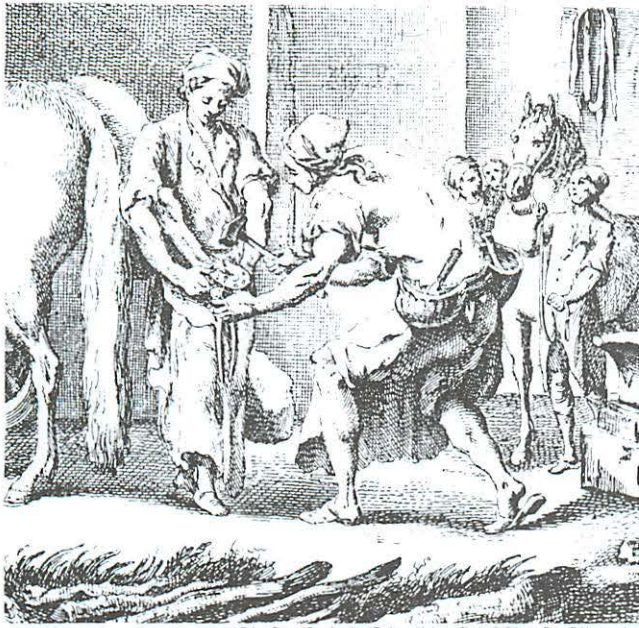
How did God use illness to redirect William's life?

Upon his completion of school at twelve years of age, William determined that he would become a field tiller or gardener, but he suddenly began to develop a rash on his skin whenever he was exposed to the sun. For two years William fought with this "thorn in the flesh." Sometimes it would become so painful that he was unable to sleep at night.

Finally his health broke, and he was forced to accept the fact that he would not be able to pursue his chosen profession. This condition made him ready and available to respond to the Lord's call later in his life.

How did God prepare William for genuine salvation?

William began to spend too much time with other young men at the local blacksmith's shop. They taught him that it was more important to be accepted by his peers than to please his parents. He even began to repeat their coarse talk and blasphemous jokes and cultivated the habit of lying as well.



A Distant Pastoral Encyclopedia of Trades and Industry, Charles C. Gillette, Dover Publications, Inc.

William became peer-dependent as he spent more and more idle time at the local blacksmith's shop. The coarse talk and blasphemy of his friends soon became a part of his life.

Mr. and Mrs. Carey saw that William needed to learn some very important lessons. Separation from his evil companions and work to keep his idle hands busy were in order. As he could no longer work in the sun tilling the fields, they decided he should be apprenticed to a shoemaker by the name of Clarke Nichols.

Mr. Nichols was known to be a man who was able to handle difficult rebels. This and the fact that he was a strict member of the Established Church commended him to Mr. Carey. So William was committed to his care.

It did not take long for William to discover that although Mr. Nichols was "religious," he was a man of hot temper and rough tongue. He often drank on Saturday nights and made his apprentices run hard errands on Sunday mornings.

Quickly William looked for other rebels with whom to associate. His attitude and behavior grew worse as he continued to witness the conflict between Mr. Nichols' pious Sunday religion and his workday corruption.

Another young man apprenticed under Mr. Nichols with William. John Warr who was three years older than William was an experienced apprentice, but William despised and mocked him because he was a Dissenter. Dissenters were people who attended churches other than the Established Church. Children from dissenting families had been excluded from the school in which William's father taught.

Both his father and grandfather had been parish clerks in the Established Church.

John often debated religious issues with William and Mr. Nichols. Even though William disagreed with John, he began to feel the pangs of a guilty conscience as he saw John consistently live an upright and moral life. Years later, William wrote of this period in his life, "I felt a growing uneasiness . . . but had no idea that nothing but an entire change of heart could do me good."

John Warr sought the Lord with all of his heart and eventually discovered what it meant to have a personal relationship with the Lord Jesus Christ. No longer was he interested in debating with William; now he wanted to win him to the Lord.

Finally John persuaded William to attend a Dissenters' prayer meeting with him. There William discovered a warmth and fervor that he had never before experienced in the cold formality of the Established Church.

The increasing conviction which William felt pressed him to increase his spiritual exercises in an attempt to gain victory. He attended the Church three times every Sunday and "determined to leave off lying, swearing, and other sins, to which I was addicted; and sometimes, when alone, I tried to pray."



William Carey, S. Pearce Carey, Hodder and Stoughton

Mr. Nichols' home and shop in Piddington were an important part of God's plan to bring William to salvation.

But William Carey was not yet ready to accept the free gift of salvation. For all of his failings, he felt that he was fairly well-clad in his own righteousness. It took one final failure to break young William and prove to him that he needed a Savior.

It was Christmas of William's seventeenth year. In that district it was a holiday custom for tradesmen to give a bonus to the apprentices of the workshops where they did business.

William was making his rounds to deliver shoes and collect the money for Mr. Nichols. When he called at the ironmonger's shop, he was thrilled to be given a bonus of one whole shilling. On the way home he stopped to spend his personal money. He passed his newly won shilling over the counter to the shopkeeper. Gruffly the shopkeeper thrust the coin back at him and informed him that it was a brass counterfeit.

William burned with embarrassment and anger. He had not intended to cheat the shopkeeper, and he did not like to be the brunt of the ironmonger's cruel joke. Though he did not have any money left with which to pay the shopkeeper, he was unwilling to leave without his purchases. Quickly he exchanged his counterfeit shilling for one of Mr. Nichols' genuine coins and paid for the merchandise.

As he trudged back to Mr. Nichols' shop, he hoped that his wicked deed would not be discovered. He knew that Mr. Nichols considered lying to be the worst of all sins.

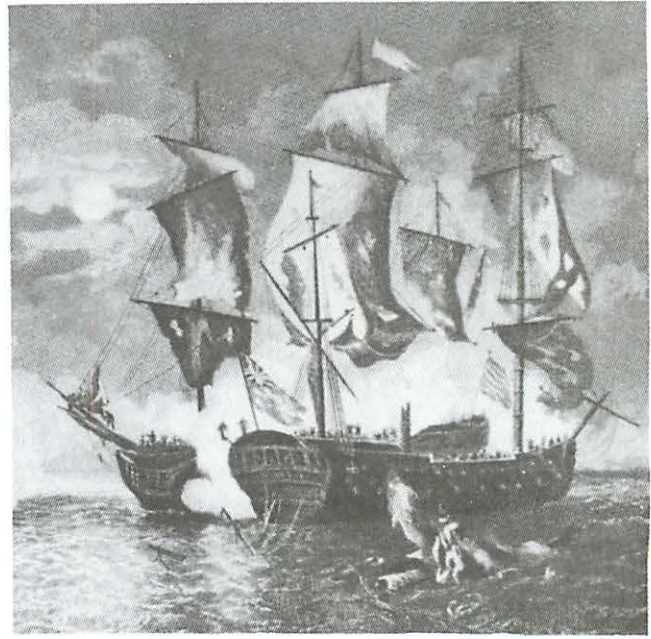
William became so concerned that he actually tried to "make a deal" with God. He told God that if He would "... help me through with the theft, I would certainly for the future leave off all evil practices. . . . A gracious God did *not* get me safe through. . . . and I was therefore exposed to shame, reproach, and inward remorse, which increased and preyed upon my mind for a considerable time. I then sought the Lord, perhaps much more earnestly than ever; but with shame and fear I was quite ashamed to go out, and never till I was assured that my conduct was not spread over the town did I attend a place of worship."

In this state of desperate humiliation, God lifted the blinders from William's eyes. His own pride crushed, he was finally free to see his need for the Lord Jesus Christ and was "... brought to depend on a crucified Savior for pardon and salvation. . . ."

How did William learn the importance of total dedication?

Immediately after his conversion, William began to study God's Word. As he was looking through a New Testament commentary, he noticed words and sentences in an unknown language. Because the book belonged to Mr. Nichols, he asked him if he knew what they meant. Mr. Nichols had no idea, so William meticulously copied them down and took them to a weaver in town who had some knowledge of foreign languages.

The weaver identified the language as Greek and took his time to work with William in discovering what the words meant. This first lesson in Greek so fascinated William that he soon outdistanced his teacher and began to train himself with a Greek glossary and grammar.



In February of 1779, only a few months after William's conversion, the British were faring poorly in the war with the thirteen Colonies. Alarmed, King George III declared Sunday, February 10, to be a national day of prayer and fasting.

William consented to spend a day of prayer and fasting in the Dissenters' meetinghouse with John Warr. The message given seemed to be spoken directly to him! "*Let us go forth therefore unto him without the camp, bearing his reproach*" (Hebrews 13:13). The preacher was pleading for out-and-out abandonment to Christ—regardless of the cost!

Instantly William knew the price he would have to pay to dedicate his life totally to Christ. For some weeks now he had been feeling convicted that he should join the despised Dissenters and leave the social comforts of membership in the Established Church.

Thoughts raced through his mind. He remembered how many times he had openly mocked the Dissenters. To turn from the Established Church would make him look weak. Now he would have to face the ridicule he had once inflicted on others, and his own father would be deeply hurt.

Nevertheless, the decision did not take long. God had spoken through His Word, and William obeyed. That day he put his reputation on God's altar and joined the ranks of the Dissenters.

How did William learn to trust the Word of God?

During the same year Mr. Nichols fell ill and soon died. However, it was with great joy that John Warr and William witnessed to him in his last hours and saw him come to place his faith and trust in the Lord Jesus Christ. He encouraged all who visited him to “look to Jesus as the sinner’s friend.”

Within a day or two William’s apprenticeship was transferred to Mr. Thomas Old. Not far from Mr. Old’s shop was a group of mystics. They held that *experience* was the determining factor in the destination of a man’s soul. With his newborn zeal, William talked often to them about spiritual things.

The mystics took him in as a friend. However, they also confused him and questioned his salvation. Surely he had not done enough good works to think he could enter the Kingdom of Heaven! Later William reported, “I could neither believe his system nor defend my own. The conversation filled me with anxiety, which increased when I was alone.”

For three years he wrestled with the false doctrines the mystics had taught him. Gradually he came to understand that the words and experiences of men were not the foundation upon which he was to build his faith. With the encouragement of an excellent preacher, he began to search the Scriptures thoroughly to discover the truth of the promises of God.

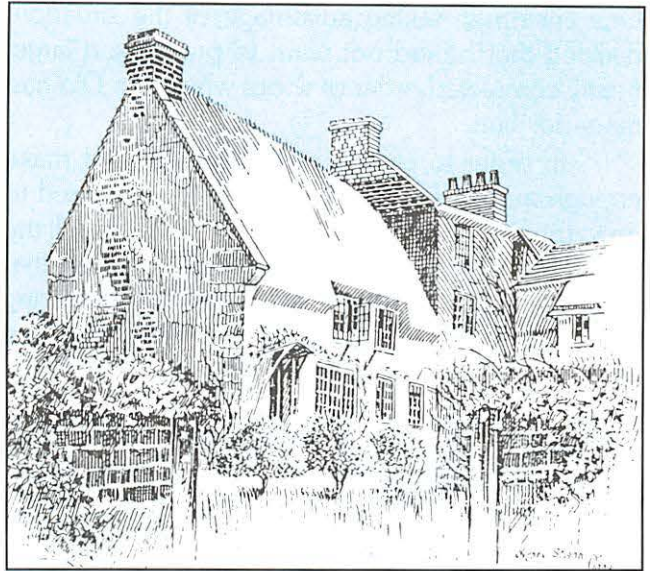
From then on, William clung to the Word of God. Because of his own soul-searching experience with the mystics, he became a man committed to the Bible as his only textbook for life.

How was one unwise decision the turning point of William’s entire life and ministry?

William had been meeting with a group of Dissenters in Hackleton since the time of his conversion. One of the young ladies in the meeting particularly caught his attention. Her father was one of the chief leaders in the church.

Young William, who was not yet twenty years old, determined that he would like Dorothy Plackett to be his wife. Although Dorothy was five years older than William and was unable to read or write, she was earnest and lovable. Yes, she would marry the young shoemaker’s apprentice.

At the time of his marriage William did not know what God’s purpose was for his life. He had



William Carey, S. Pearce Carey, Hodder and Stoughton

Dorothy Plackett’s father was the leader of the Hackleton “Meeting” (pictured above) which William had attended since his conversion.

not thought through the sacrifices the Lord might ask him **and his family** to make in the years ahead. Innocent Dorothy thought she was marrying a shoemaker who was ready to settle down and live a normal life in the land of her birth. She was not prepared to be a “help meet” for an extraordinary pioneer missionary on the other side of the globe.

William failed to heed the caution of Proverbs 24:27: “*Prepare thy work without, and make it fit for thyself in the field; and afterwards build thine house.*” (Emphasis added.) The consequences of this failure followed him throughout his life and hindered the work of God for many years.

William continued to make and repair shoes, study Latin and Greek, and worship with the Hackleton Dissenters. God blessed the young couple with a daughter that first year, and William was overjoyed. Everything seemed so complete and his life so perfect.

The next year, he and Ann, their daughter, became very ill with a fever. Soon little Ann died. Overcome with anxiety in his already weakened state, William’s sickness developed into the ague. For more than one-and-a-half years he fought this disease and at the same time struggled to support his family. The ague left with him a permanent reminder of its unwelcome visit—William became bald at only twenty-two years of age.

While he was enduring these difficulties in his own life, Mr. Old unexpectedly died. As was the custom of the day, this left William with the duty to care for his widow and her four orphaned children.

One customer, taking advantage of the situation, decided that he did not want to purchase a large, nearly completed order of shoes which Mr. Old had made for him.

In order to get rid of this surplus and make enough money to buy food, William was forced to go to the streets in the bitter cold of winter to sell the unwanted shoes. This was especially difficult that year because the British economy was suffering from recent defeat at the hands of the American Colonies in the Revolutionary War.

How did God give a hearing to William's deepening message?

None of this, however, dampened William's love for the Lord. Shortly after his salvation, William had preached in his own church. Now a group of believers in the town of Earls Barton asked if he would preach for them!



For three-and-a-half years on every other Sunday William walked the twelve miles to Earls Barton to share God's Word with the believers in that town. Pictured above is the church which was located across the street from the meeting house where William preached.

The Dissenters in Paulers Pury, the town of his birth, also heard of his willingness to minister the Gospel. They asked if he would preach for them as well. Laden with many responsibilities in the business, juggling priorities in his family life, and still sick with the ague, William nevertheless agreed to

walk the twenty-one miles to preach to them once a month. This trip gave him the opportunity to visit with his parents who still did not understand why he had left the Established Church.

Many times William was able to explain to them the lasting answer he had found in salvation through the Lord Jesus Christ. He also purposed to cleanse his life of anything that would be a hindrance to God's greatest blessing. When he burned his playing cards, his family was certain that he was overzealous and "righteous overmuch." However, through his steady word of testimony and upright manner of life, he eventually had the privilege of leading his sisters to Christ.

God was working on William in other areas as well. William began to search the Scriptures, and after much study he became convicted that he must be baptized by immersion as a public testimony of his conscious faith and definite consecration to God. That fall of 1783, at twenty-three years of age, William was baptized in obedience to the Lord's command.

How was William awakened to the needs of foreign lands?

True to his boyhood love of adventure and his fascination with other languages, William loved to read stories of Captain Cook's voyages to distant lands. He was far too poor to purchase the expensive volumes, but during the autumn and bitter winter of 1783 he had opportunity to borrow them.



In his voyages Captain James Cook saw with his own eyes the desperate condition of the heathen in many distant parts of the world. He predicted that the light of the Gospel would never penetrate the dark clouds of sin which covered these populous lands.

As William read, God opened his spiritual eyes to the wretched condition of the heathen. Trapped in every form of immorality, idol worship, demon possession, and cruelty, these people had never even heard the name of the Lord Jesus Christ.

The more he read, the more he longed to see the light of the Gospel spread to every one of the lands Captain Cook had visited. The most Captain Cook had done for the cause of Christ was to erect a wooden cross on the island of Tahiti, but he did not interpret the symbol for the natives.

In writing about the possibilities of Christian missions in these lands, Captain Cook said, "It is very unlikely that any measure of this kind should ever be seriously thought of, as it can neither serve the purpose of public ambition nor private avarice; and without such inducements, I may pronounce that it will **never** be undertaken."

How did God establish William's ministry?

In 1785 William heard that the schoolmaster in the nearby town of Moulton had moved away and the school had closed its doors. Recently relieved of the burden of caring for Mr. Old's family, William decided to start a school of his own for the students of the town. He knew that he would not be able to support his family with only the earnings of a schoolmaster, so he brought his shoemaking business along with him.

When the former schoolmaster moved back into town only a few weeks later and reclaimed most

of his former pupils, William was forced to rely almost entirely on shoemaking to support his family. However, he kept his school going with its few remaining students even though the tuition did not bring in much money.

In spite of the fact that he was now shoemaking, teaching school, and gardening, William continued to study Latin and Greek and to prepare sermons. He still preached at Earls Barton and at Paulers Pury. The little Baptist church in Moulton also benefited from his occasional preaching.



Throughout his life William loved the study of living things. One of his greatest pleasures was to cultivate unique and unusual plants. He also took special delight in talking to the Lord as he walked through his neatly arranged garden.



William Carey, S. Pearce Carey, Hodder and Stoughton

Although he moved to Moulton as a schoolmaster and pastor, William was not too proud to continue his humble work as a cobbler in order to support his family. Pictured above is the cottage where the Carey family lived at Moulton (left) and the trough in which William soaked his leather (right).

Both the church in Earls Barton and the Baptist church in Moulton extended the invitation for William to be their pastor at about the same time. William prayed to know God's will in this matter for two months before he came to the conclusion that he should accept the call of the Moulton church.

William's first son, Felix, was born shortly after the move to Moulton. The members of the Moulton church were very poor and unable to give much support to their young pastor. So, William continued unashamedly to make use of his skill as a shoemaker while pastoring the little church.

At his request and after meeting their qualifications, William was ordained by the Baptist Church in Olney. He used every extra minute to study Latin and Greek and then determined to add Hebrew, Italian, French, and Dutch to his arsenal of languages.

How was diligent labor rewarded with extra time?

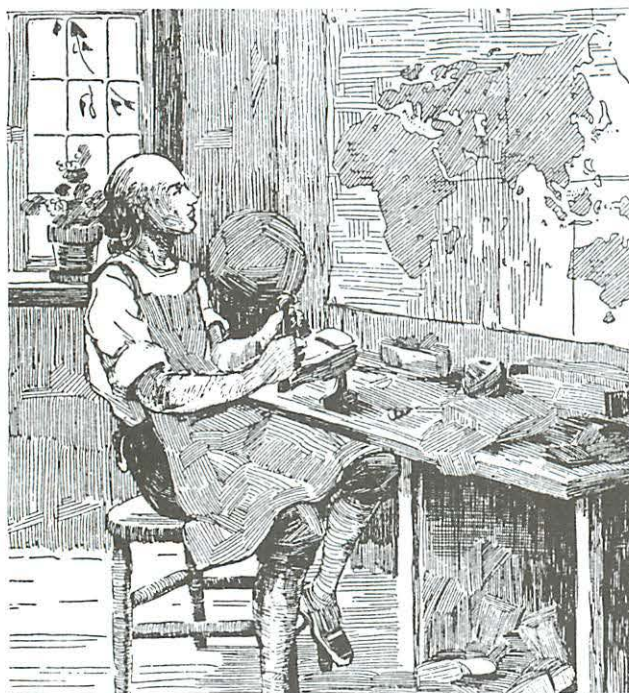
William recognized the disadvantages of being in business for himself. Thus, when he moved to Moulton, he started making shoes for a government contractor. Every few weeks he would take the shoes he had made to the contractor and pick up a new supply of leather.

One day as he was making his delivery, the contractor asked William how much he was making each week. Respectfully, William told him that he had been earning between nine and ten shillings.

With a twinkle in his eye the contractor, who had been observing William's diligent research and study habits, replied, "Well now, I've a secret for you. I don't mean you to spoil any more of my leather, but get on as fast as you can with your Latin, Hebrew, and Greek, and I'll allow you from my private purse weekly ten shillings."

How did William learn to "ask" and "receive"?

William always kept the needs of foreign lands and heathen peoples before him. On the wall over his cobbler's bench he created a map of the world. He pasted pieces of paper together to represent the various countries so he could pray for each one as he worked.



On his map, William posted many facts about various nations of the world such as location, size, number of people, and the religion of the people. He was learning to pray with understanding and plead with God and men in behalf of these distant lands.

William also made his own globe out of different colors of scrap leather. He used this globe to teach his pupils geography. What a geography teacher he must have been! Sometimes his students would see him weep as he pointed to entire countries and continents which had not yet heard the Gospel.

On one occasion in a meeting of the Ministers' Fraternal of the Northampton Association William was asked what topic he thought would be worthy of their discussion. He spoke about the subject closest to his heart.

William having carefully chosen his words, suggested that they consider "whether the command given to the apostles to teach all nations was not binding on all succeeding ministers to the end of the world, seeing that the accompanying promise was of equal extent."

Immediately his suggestion was scorned with words of disgust. "Young man, sit down, sit down. You're an enthusiast. When God pleases to convert the heathen, He'll do it without consulting you or me. . . ." [Note: "Enthuse" means "of God."]

This reaction did not deter William's fervent prayers for the heathen. Often he would go to his little garden and pray earnestly for those whom God had called him to reach.

Along with his fervent prayers William also continued to challenge the other pastors in his association to fulfill the Great Commission. Many ridiculed him, and even those who would later prove to be his staunchest supporters thought his vision impractical.

How was William first a missionary at home?

Although William was very concerned about the lost in other lands, he did not allow that to dim his vision for the those who needed Christ in his own vicinity. He held many meetings in outlying towns. Soon his ministry proved to be so successful that the Moulton church had to expand.

In 1788 while on a trip related to the expansion of the church building, William met a businessman by the name of Thomas Potts. Their discussion soon turned to world missions. Mr. Potts pled with William to write a pamphlet to inform and arouse the church.

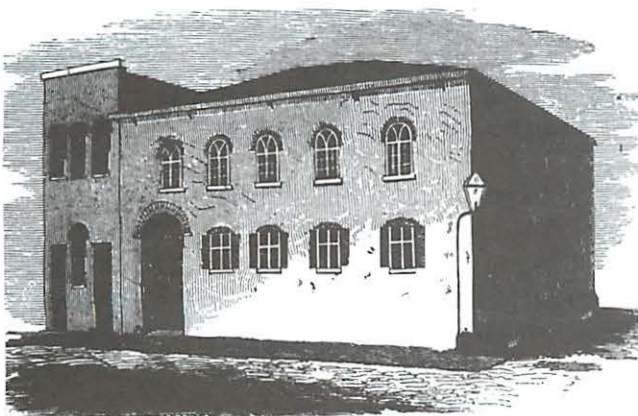
William replied that he had tried to write such a booklet but was very dissatisfied with the results. Furthermore, he could not afford to print it even if he was able to write it. Mr. Potts replied, "If you can't do it as you wish, do it as you can, and I'll give you

£10 [ten pounds] towards its printing.” With this incentive William went back to Moulton and began to write out the information from his map in preparation for his book.

How did William learn the importance of proper discipline?

Early in 1789 William was asked to take the pastorate of the Harvey Lane Church in the town of Leicester. The town was much larger than little Moulton, and the promised salary was higher. The Moulton church was simply not able to support their beloved pastor and his growing family.

In spite of these attractions William sought the Lord in prayer. He did not particularly want to leave his growing church in Moulton, but he also knew that he needed to care for his wife and (now) three boys: Felix almost four, William about two, and baby Peter. One month after receiving the call William determined that it was God’s will to accept.



William Carey: A Biography, Joseph Belcher, American Baptist Publication Society

The Harvey Lane Church had once been a large and thriving congregation. Now, however, due to corruption in its leadership, it was reduced to a mere shadow of what it once had been.

Under his sound preaching the church once again began to grow, and soon they also were expanding the church building. However, some of the corruption and bitterness of former times still lurked just beneath the surface. Such division continued to spring up that it made soul-winning and harmonious fellowship nearly impossible.

Over and over, William tried gently to correct the erring members. He even wrote for help to the Association with which the church was affiliated, but nothing would stop the rapidly spreading infection of bitterness. Finally, William made a daring move. In September of 1790, William proposed to the congregation that the church be dissolved and then reformed “on the basis of a solemn covenant, which

was ‘to bind them to a strict and faithful New Testament discipline, let it affect whom it might.’”

The majority approved this, and it was done. After a set period of time the rebels, having not changed their conduct, were declared to be no longer members of the church. Some who were discharged from the membership became even more bitter and set out to destroy William’s work. The nucleus, however, stood with him, and in the most difficult hours they gave themselves to fasting and prayer. Before long, the church’s ugly wounds began to heal.

How did William Carey’s ministry begin at age thirty?

At last, William’s eighty-seven page booklet was finished and in print! In it he shared his life’s burden. He had set his course and had seen God show him what his life’s ministry was to be. Indeed, this book marked the beginning of William’s fruitful years of ministry.

The title William carefully selected, though long, described exactly what the book was intended to provide: *An Inquiry into the obligations of Christians, to use means for the conversion of the heathens. In which the religious state of the different nations of the world, the success of former undertakings, and the practicability of further undertakings, are considered.*

This booklet was so well written that if its population figures and other statistics were updated, it would be as incisive and appropriate today as when it was prepared almost three hundred years ago!

One statement in particular reveals to us the author’s heart: “We must plan and plod as well as pray. Else the children of this generation will shame again the children of light. When traders form a company and win a charter, they go to the limit of their secured concessions and prerogatives, choosing stocks, ships, men, routes, everything, in accordance with their purpose. They strain every nerve, run every risk, court every informant, dare every danger, watch every vessel, await every homecoming, mourn every delay, nor ever rest ‘till the rich returns are safe in port.’ We Christians must be in equal earnest in the business of our Lord.”

At the Association meeting in May of 1792, William was asked to speak. *The Enquiry* (the common name for William’s book) was being sold, and William felt it was time to do more than preach eloquent sermons about the needs of the lost around the world. Now was the time to call the pastors of the Association to decisive action!



William Carey; S. Pearce Carey; Hodder and Stoughton

In the Friar Lane Meeting House in Nottingham, William preached what has been called “The Deathless Sermon.”

William’s chosen text was Isaiah 54. He placed special emphasis on verses 2 and 3: “Enlarge the place of thy tent, and let them stretch forth the curtains of thine habitations: spare not, lengthen thy cords, and strengthen thy stakes; For thou shalt break forth on the right hand and on the left; and thy seed shall inherit the Gentiles, and make the desolate cities to be inhabited.”

In William’s own words, God was saying to His Church, “Get up. Find larger canvas, stouter and taller poles, stronger tent-pegs. Catch wider visions. Dare bolder programmes. Dwell in an ampler world.” Then, in two profound lines, William summarized the vision God had given to him:

***Expect great things from God.
Attempt great things for God.***

He closed the message with no fancy rhetoric. Instead he urged the men to commit themselves to God’s program for world missions.

The next day the ministers and messengers of the Association met for a private business meeting. Various issues were discussed, but when William mentioned overseas missions, some of the old doubts began to resurface. William cried for action. Finally he turned to Mr. Fuller, an important member of the Association and pled, “Is there nothing again going to be done, sir?”

For a moment Mr. Fuller wavered. But God had given the vision to him as well. With his decision to fully support William, the Association resolved that “a plan be prepared against the next Ministers’ Meeting at Kettering, for forming a Baptist Society for propagating the Gospel among the Heathens.” It sounded like a small step, but it was actually a great victory.



William Carey, John Brown Myers, Ernst Kaufmann

A hospitable widow provided her back parlor in which William and six other men met to discuss the formation of a mission society.

In October of 1792 the Association resolved itself to begin a mission society: “Humbly desirous of making an effort for the propagation of the Gospel amongst the Heathen, according to the recommendation of Carey’s *Enquiry*, we unanimously resolve to act in Society together for this purpose. . . .”

How did a hasty decision result in heartache?

The newly formed Society began looking for the man they should send out as their first missionary. When William received a letter from John Thomas, a medical doctor who had already been a missionary in Bengal and who was yearning to return, he put aside his personal desires to be the one sent and recommended to the Society that John be considered.

John Thomas was an enthusiastic man who loved God and mission work. Although the members of the Society had never seen John Thomas or talked with him, they decided that Bengal was their open door and that John Thomas was to be their representative.

The fact that Dr. Thomas walked in shortly before the close of the meeting was regarded as God’s confirmation that this was His direction. The

Society was so enthralled with this man's vision and previous experience on the mission field that they failed to ask any questions about his personal life.

It was not until later under desperate circumstances that the Society learned that Dr. Thomas was unpredictable and extremely unwise in financial matters. He was deeply in debt, and he often went even deeper into debt in order to satisfy his most demanding creditors. In order to try to escape his debts, he had even been drawn into a lottery. This decision was undoubtedly a final attempt to pay off what seemed to be impossible bills.

Dr. Thomas also had a tendency to be sarcastic, critical, and extremely tactless. His unreliability is demonstrated by the fact that he had forgotten the date of the Society's meeting at which he was to speak!



William Carey, S. Pearce Carey, Hodder and Stoughton

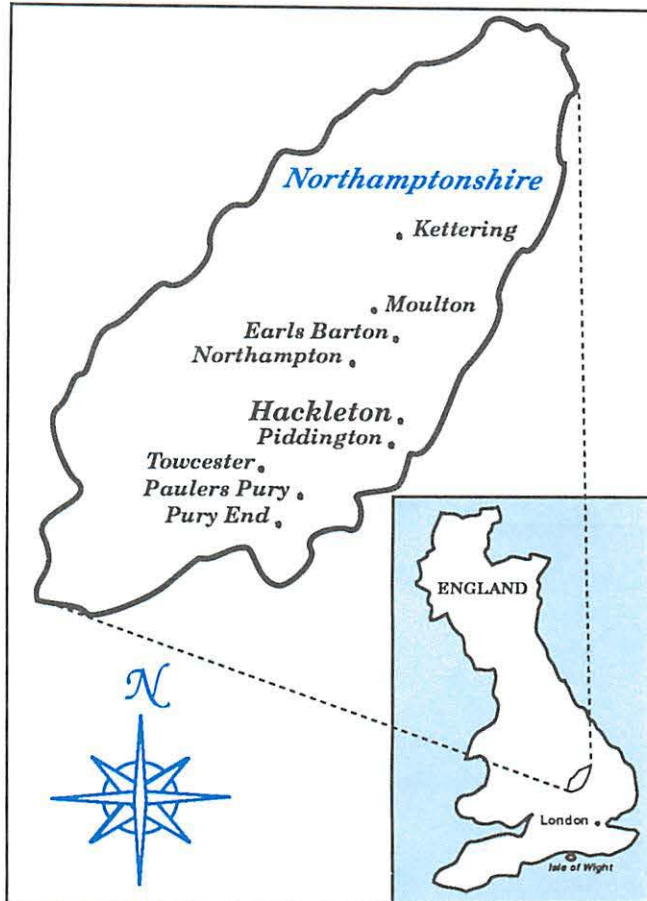
John Thomas loved God and the people of India, but he never applied many of the principles of God's Word to "everyday living."

How did William fail the test of true love for Christ?

After interviewing Dr. Thomas, it became clear that an assistant would be needed on the mission field. Maybe this was William's opportunity! After all, he had selflessly encouraged the Society to consider Dr. Thomas even when it was his personal dream to go to the mission field.

When he heard that missionaries were able to support themselves in Bengal, William joyfully

volunteered to go. Dr. Thomas was overwhelmed with gratitude. For nearly a year he had been unable to find even one man who would be willing to go with him.



This map pictures the towns in which William ministered during his years in England. His wife, Dorothy, had never ventured more than thirty miles from Hackleton, the town of her birth.

The Society immediately acknowledged the benefit of sending the two men out together and resolved that this would be done. William saw only one hindrance to his dream—Mrs. Carey. Dorothy was with child, and the baby was due about one month after the scheduled departure date. All the way home that night, William wondered how he would tell her about his decision. He was afraid he knew what she would say.

William's fears were confirmed when Dorothy refused to go to the mission field. She could not and **would** not go with him. She had married a shoe-maker who was committed to loving **her**, **her** children, and **her** home.

How could William stand there and tell her of his great love for her when he also resolutely affirmed that he would go to the mission field—without her if necessary? How could he proclaim

his love for the heathen when he did not even love his own wife? His words were nothing to her but shallow, empty lies. He had broken her trust and deeply wounded her sensitive spirit.

Again William stood at the crossroads of his life and ministry. He felt that all the years of difficult preparation through which God had brought him led to the immediate fulfillment of his vision to be a missionary. In his zeal to love the heathen and to build the Kingdom of God, he failed the test of true love for Christ and His Church: *"Husbands, love your wives, even as Christ also loved the church, and gave himself for it"* (Ephesians 5:25) (emphasis added).



Bible Art Series, Standard Publishing, Cincinnati

In the Garden the Lord Jesus told God the Father that He was willing to give His life for His Bride, the Church. In like manner the Apostle Paul stated that the true test of a married man's love for Christ is his willingness to lay down his life for his wife.

William thought that he was doing a work for God by being willing to give up his family to go to the mission field. He did not realize that he was really doing a work for himself, and he did not know that his action would be the first step in the destruction of his wife's mental health. He could not see into the future to discern the humiliation and embarrassment this premature venture would bring upon himself and the cause of Christ.

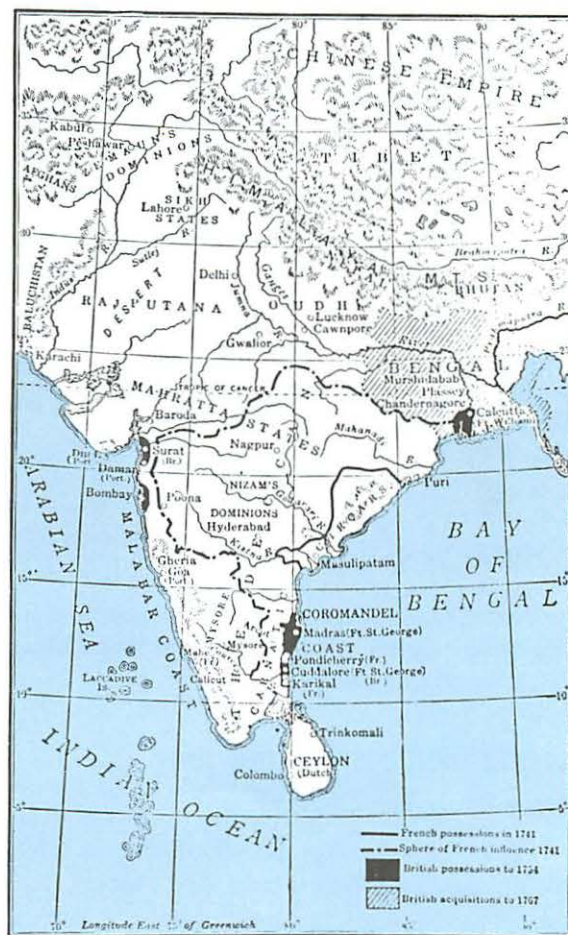
The Apostle Paul makes this principle very clear in I Corinthians 7:32-33: "... He that is unmarried careth for the things that belong to the Lord, how he may please the Lord: But he that is married careth for the things that are of the world, how he may please his wife."

William also wrote to tell his father of his plans to go to Bengal as a missionary. Edmund Carey said that the venture was "the folly of one mad."

Hurling all God-given cautions to the wind, William pressed on with his plans. He did not know what a high price he was to pay for his disobedience to the clear direction of the Lord.

Moving Dorothy and the children back to her parents' town, William prepared for the day when he would set sail for Bengal. Several weeks later he noted: "My wife appears rather more reconciled than she was to my going."

The Society committed themselves to making sure the family's needs would be met. It was determined that eight-year-old Felix should accompany his father. William took this as a pledge that Dorothy and the children would come to Bengal after he made a home for them.



© Rand McNally and Company

William's attention was so focused on India that he was unable to see the immediate needs of his own wife and family. This map shows the growth of English possessions in India through 1767, twenty-six years before William set sail.

How did God stop William's first attempt to go overseas?

Preparations for the rapidly approaching trip did not go smoothly. The East India Company, which practically controlled all English affairs in India, refused to give licenses to the missionaries because they believed that missionaries were bad for business. Without these important licenses it was illegal and nearly impossible to book passage on a British vessel to India.

After diligent search William and Dr. Thomas finally found a captain who would take the risk of transporting them without the necessary licenses. During this time William went for counsel to Rev. John Newton, an influential pastor and the author of "Amazing Grace" and other hymns. William asked the elderly Rev. Newton what they should do if the East India Company were to send them home upon their arrival in Bengal.

Rev. Newton responded, "Conclude that your Lord has nothing there for you to accomplish. If He have, no power on earth can prevent you."



John Newton of Olney and St. Mary Woolnoth; Rev. Josiah Bull. The Religious Tract Society.

Rev. Newton failed to see beyond the surface issues to the root causes which would keep God from blessing the missionary endeavor.

Soon the time came for departure. The ship sailed out as far as Portsmouth and then stopped to wait for a convoy which the captain planned to join. It would be foolish to sail the high seas in a lone passenger ship because of the pirates.

For six wearisome weeks the ship waited for a convoy to arrive. During this time William received word that his wife had given birth to a son. She named him Jabez because she "bore him with sorrow." (See I Chronicles 4:9.)

A letter William wrote to his wife after he received news of the birth shows that he still did not understand how he was destroying his family. "If I had all the world, I would freely give it all to have you and my dear children with me, but the sense of duty is so strong as to overpower all other considerations; I could not turn back without guilt on my soul."

Only a couple of days before the convoy was to arrive, the captain received an anonymous letter threatening him with the loss of his command if he took a certain unlicensed passenger to India. William was sure the letter was from one of Dr. Thomas' creditors.

In the brief time remaining they tried to trace the letter's source, but did not succeed. The captain had to put William, Felix, and Dr. Thomas off the ship. Humiliated because of another halt in their plans the discouraged party returned to London.

William felt an urgency to visit his wife and family in this delay and to ask one more time if Dorothy would be willing to go with him to Bengal. Reaching the house in Piddington where the family was staying, William entreated his wife once more. Again she told him that she could not go. He had clearly demonstrated to her that she did not have first place in his life, and she was unwilling to make the sacrifices necessary to follow his leadership.

Weighed down with grief and yet doggedly determined to pursue what he falsely believed to be God's will, William retreated. Dr. Thomas, knowing by experience the pain of a six-year separation from his own wife and family, asked William if he could make one more appeal to Dorothy. William refused, but Dr. Thomas insisted, and he returned to try to persuade Dorothy to go, saying, "If you refuse to go now, you'll repent it as long as you live. . . ."

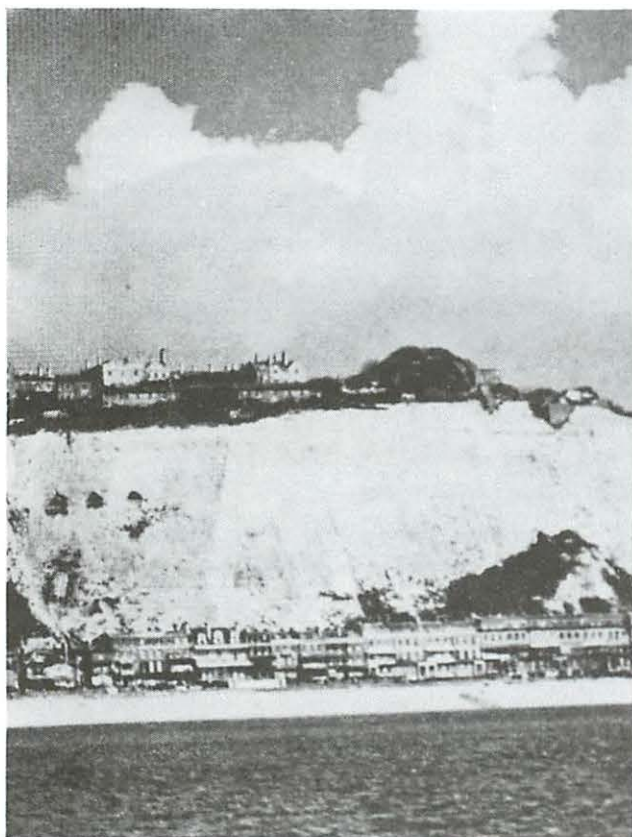
Dorothy became afraid when he said this and at last cried out, "I'll go, if my sister here will go with me." It is tragic that her confidence in her husband was so broken that she felt she must have someone else on whom she could depend. Catherine, the single sister with whom Dorothy and the family had been living, prayed briefly about the proposition and agreed to go.

Leaving the two women to pack frantically, Dr. Thomas and William set out to request of the Society the necessary funds for the more expensive tickets and the five additional passages that would be needed. The Society had far from enough money for them. However, an urgent appeal was sent out, and an unbelievable sum was rapidly received.

At the shipping office the Carey party found that they lacked proper funds to pay the required

price to book their passage. So Dr. Thomas and Catherine volunteered to travel as personal servants to reduce the cost, but still the group was unable to afford the ticket price.

Captured by the daring persistence of these men who believed they were doing business for God, the agent gave them extremely low-cost tickets and allowed Dr. Thomas and Catherine to travel in passenger class rather than as servants. Delayed another two weeks due to bad weather, the missionaries finally said farewell to the White Cliffs of Dover on June 13, 1793.



Historic Towns of England in Pictures. Osborn Press Ltd., London

The chalk-white cliffs of Dover provide a striking reminder to all Englishmen of their homeland, heritage, and family. Catherine was the only member of the missionary party to ever set foot in England again.

If William had waited for God's time rather than choosing his own, he would not have damaged the spirit of his marriage or experienced the humiliation of making a "false start" to India. In God's time they did not need licenses from the British East India Company because the ship on which they ultimately sailed was Danish rather than British. Also, because Denmark was neutral in the war between France and England, there was much less concern about being attacked by pirates on the open sea.

How did the missionaries fail to "count the cost"?

William spent much of the five months at sea studying Bengali. With his knowledge of Hebrew, he was able to help Dr. Thomas translate the book of Genesis.



B & O Line

The long months at sea were made more difficult for the missionaries by a violent storm which their ship encountered just near the southern tip of Africa. It took eleven days in port to repair the damaged vessel.

Setting foot in steamy Calcutta, William was fascinated and encouraged to witness the attentiveness of the natives as Dr. Thomas preached to them in their own language. It was not long, however, before the many changes in diet, climate, language, and culture overwhelmed the Carey family.

The two oldest boys became very sick with dysentery. Not only that, but William soon discovered that Dr. Thomas had sadly miscalculated the cost of living in India. They had planned to live that first year on the funds provided by the Society in order to learn the language and become established. After this it was their goal to find "tentmaking" work with which they could support themselves.

Ten weeks after their arrival they discovered that the money which was to have lasted them the entire year was gone. Obviously, they would have to find work sooner than expected in order to survive.



The sultry atmosphere and crowded conditions of Calcutta were the first things to greet the missionaries.

The creditors from whom Dr. Thomas had borrowed funds before his trip back to England were now demanding payment. Dr. Thomas, seeing no other alternative, set up a medical practice. Preferring to live in the affluent European style, he and his wife also borrowed money to rent a large house and pay more than a dozen servants.

The Careys did not have it so easy. Dorothy was gravely ill with dysentery, and Felix's recovery was still questionable. They did not have money enough even to buy bread. They did not speak the language and had no way to make money. They could not expect funds to arrive from England for another ten months.

William tried to apply for the job of superintendent of the East India Company's botanical garden, but the position was given to another man before he arrived for the interview. It was under these circumstances that Dorothy's mental problems began to surface. She was not only burdened by all the sickness and adjustments, she was also still struggling with the rejection she felt from her husband.

In desperation William applied for a tract of land in the jungle region east of Calcutta. The government gave him the grant, and William felt sure that with God's help and protection he would be able to grow enough food to feed his family.

An embarrassing and uncomfortable predicament faced William, however, as he realized that he did not have the money to transport his family up the river to their newly acquired land. While there was no doubt that William wanted to be faithful in his commitment to the vision he felt had come from the Lord, he had certainly erred in placing confidence in the counsel of John Thomas.

As a result both missionaries were to experience the consequences of failing to count the cost

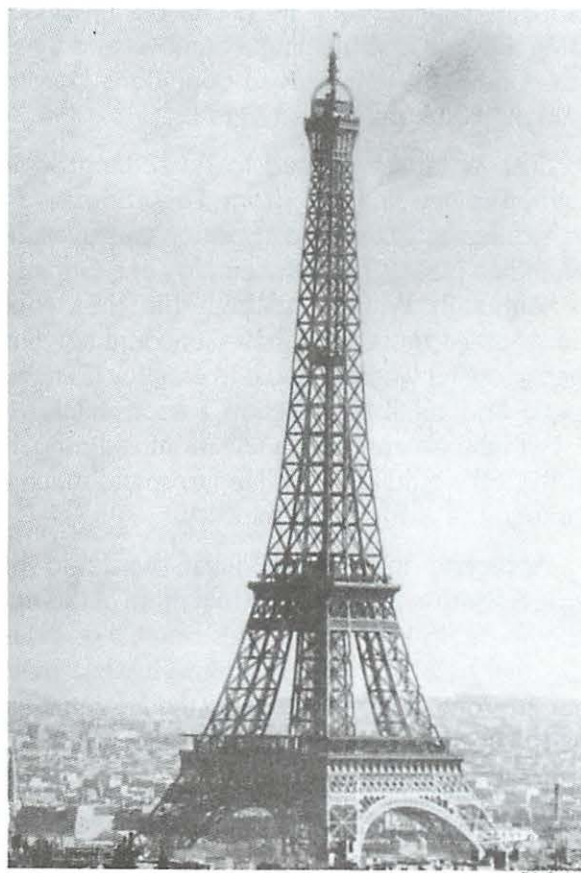
of their proposed mission. William was also to learn the truth of Proverbs 25:19: "*Confidence in an unfaithful man in time of trouble is like a broken tooth, and a foot out of joint.*"

In those dark hours with his wife and sister-in-law complaining about the conditions and overwhelming pressures, William was forced to look to God. Though the Lord was severely chastening William for his disobedience, He blessed his desire to spread the light of the Gospel.

On January 17 he wrote in his journal, "Towards evening [I] felt the all-sufficiency of God, and the stability of His promises, which much relieved my mind. As I walked home in the night, [I] was enabled to roll all my cares on Him."

Several notable entries follow in his journal: "I wish I had but more of God in my soul, and felt more submission to His Will; this would set me above all things."

"All my friends are but One, but He is all-sufficient. . . . Everything is known to God, and He cares for the Mission. I rejoice in having undertaken this work; and I shall, even if I lose my life therein."



Jesus used a tower to illustrate the need to count the cost before building. If the builders of the 984-foot Eiffel tower had not counted its million-dollar cost prior to 1889, it would stand today as a monument of ridicule. (See Luke 14:25-33.)

How did failure to “ask” properly result in borrowed money and an ungodly marriage?

Even though William had seen the way Dr. Thomas destroyed his good name and damaged the cause of Christ through indebtedness, he became so desperate that he finally borrowed money to purchase supplies and move to the granted land.

Morning dawned on the fourth day of the river trip, and ahead of the Careys loomed the large brick house in which they were planning to live until a home of their own could be built. However, they were shocked to find that the house was already occupied.

Mr. Charles Short, an English bachelor, lived in the house which was the property of the East India Company. He graciously invited the family into his home for breakfast. The whole idea of missions was absurd to this unbelieving man, but he treated the Careys with much kindness and even invited them to live with him until they had a place of their own.

William planted a vegetable garden to provide food for his family. Then he began the process of clearing the land and building a bamboo and thatch house. Under these improved conditions Dorothy and young Felix quickly recovered.

Just as things seemed to be settling down, William received a letter from Dr. Thomas. He indicated that a well-salaried position was available on an indigo plantation in the employ of a Christian man. Although William realized that this would mean another move, the news encouraged him. Perhaps now he would be able to care for his family properly and fulfill the mission responsibilities as well. With the exception of a few months during the year, the job would allow William to spend much of his time in the work of the ministry.

Accepting the offer, William wrote to the Mission Society in England and told them of this new development. In keeping with his original goals, he would now be able to support himself while maintaining a proper accountability to the Society. The job would include not only a good salary, but also a house on the plantation grounds.

Before the Careys could leave, however, Mr. Short made it known that he was attracted to Catherine. Catherine was more than willing to return his kindness and affection, even though she was well aware that he was not a Christian. Soon, the two were unequally yoked together in marriage.

How did God demonstrate His love for William?

The 250-mile journey up the Ganges River to Mudnabati where the plantation was located was treacherous. At that time of year mosquitoes were voracious, and the temperature often climbed to 110 degrees. It took three miserable weeks for the Careys' crowded boat to arrive at its destination.

William found he had very little time to learn how to manage the indigo plantation before the indigo season began. He had just one month in which to learn how to harvest and process these delicate plants. However, mastering the intricacies of producing the beautiful blue indigo dye proved to be fascinating and rewarding for William, and he was able to catch on quickly.

Nevertheless, the first indigo season was very difficult. Such a large number of the native workers were sick that it was difficult to carry on business. William as well contracted a tropical fever. Then, young Peter Carey, William's five-year-old son, also caught the fever. After only a few hours of struggle, the child died.



©Norman Rockwell Estate

God always “spanks” His children in love in order to produce in them the “. . . peaceable fruit of righteousness . . .” (Hebrews 12:11).

The grief-stricken parents were appalled to find that no natives would carry their little son's casket because it would mean breaking caste

restrictions. Doing this would mean rejection and persecution from the rest of society.

The grief, rejection, and additional sickness drove Dorothy to the extreme mental condition she was to suffer for the rest of her life. She became tormented by fears and lived in a constant state of deep depression.

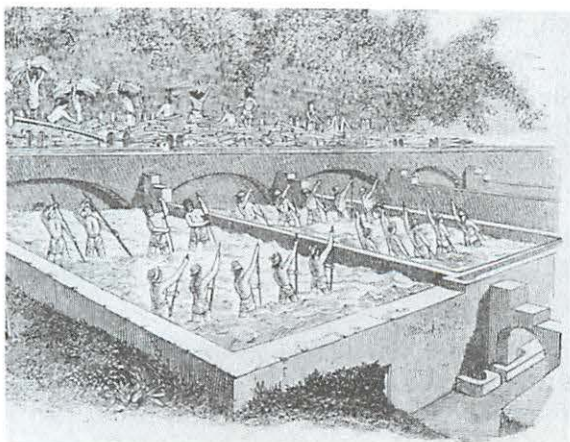
She was no longer able to care for her family or perform even simple domestic duties. In fact, her mind became so twisted that the very ones she had loved the most, she now turned fiercely against. William was reaping the fruit of disobeying God's command to love his wife as his own body. (See Ephesians 5:28.)

William's own anguish grew to the point that he wrote in his journal on February 3, 1795: "This is indeed the Valley of the Shadow of Death to me, except that my soul is much more insensible than Bunyan's Pilgrim. Oh, what would I give for a sympathetic friend, to whom I might open my heart! But God is here, Who not only has compassion, but can save to the uttermost."

His loneliness was intensified by the fact that he had not received any letters from the Society in England for almost two years. It was as if he had been forgotten by those who had promised to "hold the rope" while he went for them to India. Letters did finally arrive in May of 1795, and they were a great comfort to him.

How did William learn to deal with criticism?

Another letter followed from the Society. In it they expressed their concern that William was being distracted from his missionary work by the indigo business.



William Carey, S. Pearce Carey, Hodder and Stoughton

Producing brilliant blue dye from the leaves of the indigo plant was an exacting process. The leaves were soaked in huge vats, aerated, dried, and cut into small blocks.

This criticism hurt William deeply. From the outset it had been his purpose to support himself on the mission field. How was running an indigo factory to support himself in India different from making shoes to support himself in an English pastorate?

If the Society was concerned with the amount of money he was earning, he assured them that "I am indeed poor, and shall always be, till the Bible is published in Bengali and Hindustani, and the people need no further instruction." William had learned from his own experiences with the mystics that it was vitally important for the natives to have the Word of God in their own tongue.

Indeed, he was more committed now to the work of the Gospel in India than ever before. He had seen with his own eyes the horrible "swingings," where men would voluntarily be swung into the air by large flesh hooks which had been thrust into their naked backs. As they would swing by the ropes, they would make offerings to their idols.

Widow-burning was another common event. When a man died, it was considered proper for his widow to throw herself on the funeral pyre to burn with her husband's body. One man died and left thirty wives, all of whom were burned with him.

How did indebtedness cause William to miss God's direction?

In spite of great sickness and grief William continued to do all he could to reach the heathen. He worked diligently on translation projects and preached often.

Early in 1797 he had the joy of reporting, "... the New Testament is now translated into Bengali. Its treasure will be greater than diamonds." However, it seemed impossible, that the newly translated Testament would be printed: the cost to have the proper press shipped from England to India was £4,000.

William prayed earnestly, asking God to provide a press. Toward the end of the year he heard of an appropriate press which was being made in Calcutta for only £46. The Christian who owned the indigo factory purchased the press and gave it as a gift to the mission.

Several years of a poor indigo crop, however, meant that the factory had to be closed, again leaving William without a job. This was especially difficult at this time because several new missionary families were on their way to join him, expecting to be hired at the factory.

Working at the indigo factory would have also reduced the difficulties with the East India Com-

pany which was now more hostile than ever to missionaries.

Determining that it must be God's will for him to purchase a small indigo factory at Khidurpur, twelve miles away, William spent all of his savings and borrowed heavily from his Christian boss. The work to construct buildings was begun, but was never finished because God led the missionaries to establish their work in Serampore. Thus, the large amount of money which was spent on the indigo factory in Khidurpur was completely wasted.

How did one convert pave the way for thousands to come to Christ?

William had been in India for seven years. He had translated all but a few chapters of the Bible into Bengali and was able to preach fluently in the language. Though thousands of natives had heard the Gospel and some even indicated that they wanted to give up their idols, they were terrified of committing their lives to Christ and being baptized. Baptism would publicly identify them as Christians, and they would suffer horrible persecution and rejection for breaking caste.

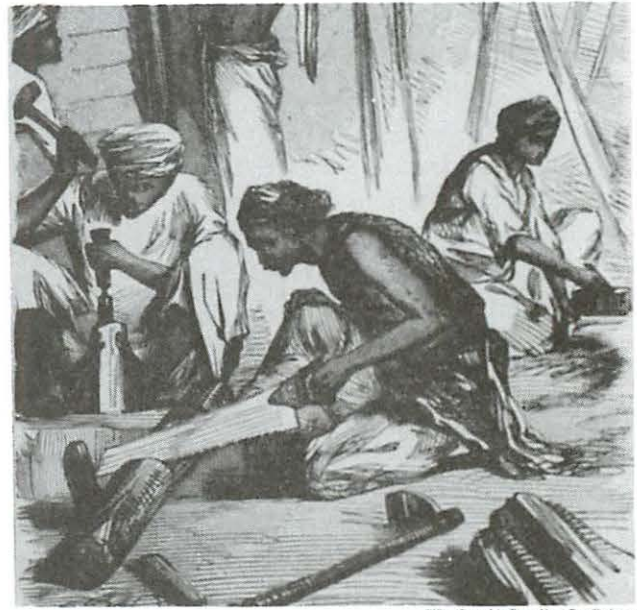
This was the setting into which the new missionaries came. William now had the responsibilities of caring for and leading them as well as his own family.

On New Year's Day of 1800, the Careys and all of their baggage as well as the mission's press were loaded onto boats, and the ten-day journey to Serampore began. When the Careys arrived, the missionaries agreed to pool their finances, withdrawing only enough to meet dire needs. The surplus would go toward the needs of the mission.

Settling in Serampore, the missionaries immediately began their work. On March 17, the first page of the Bengali New Testament was printed. The men also consistently preached in the surrounding villages even when their life-giving words were met with stones and bricks.

The missionaries grew discouraged as the people continued to hear the truth but did not respond. Again and again they cried out to God to soften the hearts of the people, who, it seemed, were bound by fear and evil spirits so that they could not come to Christ.

Early one morning the missionaries received word that a Bengali carpenter had fallen and dislocated his shoulder. Dr. Thomas, who had joined the missionaries in Serampore, went to see what help he could offer. As he was treating the man's shoulder, he also inquired about his soul.



Krishna Pal was a carpenter of the Brahmin caste. His heart was like fertile soil that had been prepared to receive the truth of the Gospel.

Krishna Pal had been feeling convicted about his sins for several months. He was a member of the Brahmin caste, which was an honored, teaching class of society similar to the Pharisees in Jesus' day, but Krishna Pal had experienced the true emptiness of his own religion.

When he came back to the mission the next day he brought a friend, and both men were ready to receive Christ. This was the opening for which the missionaries had been praying! To have a convert from the Brahmin caste would open up all other castes to the Gospel.

About three weeks later the new Christians consented to eating a meal with the missionaries. This proved that they were sincere since it involved a definite breaking of caste. On the way home from lunch, they were attacked.

Later, a mob of two thousand people came to Krishna Pal's house to drag him before the Danish magistrate who sent them to the governor. They told the governor that Krishna had become a European.

"Nay," said the Governor, "He has become a Christian, not a European, and he has done well. I will answer all demands against him. I forbid you to harm him."

William met Krishna's wife on the road. She was frightened and weeping. William wept with her and comfortingly said, "Fidelity to Christ has brought you this trouble. He'll treasure your tears in His bottle, and will never forsake you."

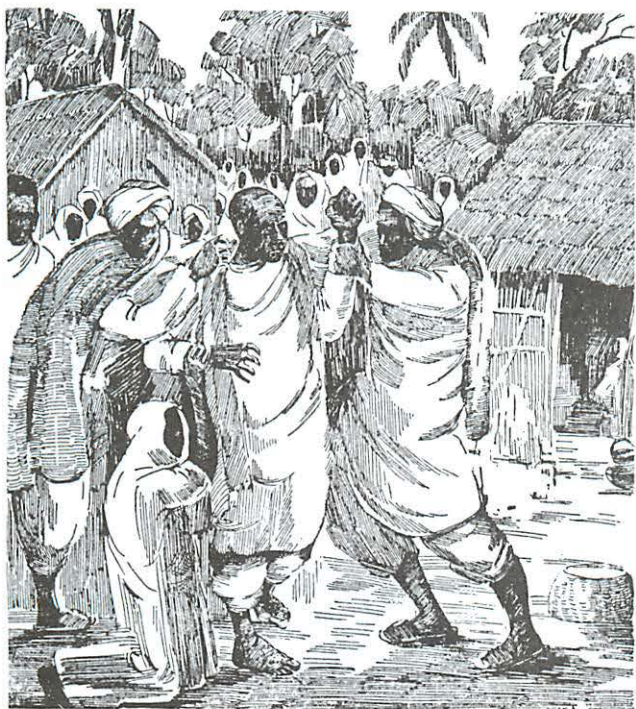
William's wise words and ability to "weep with those who weep" were never forgotten. The crowd,

however, was still restless. That night they would have murdered the whole family had not the Governor-General heard about it and stationed a guard at their house.

An even greater test would come in the matter of public baptism. In spite of the persecution, Krishna Pal was absolutely committed to following the Lord Jesus Christ. On December 22, 1800, William had the honor of baptizing his own fifteen-year old son, Felix, and Krishna Pal in the Ganges River. Krishna Pal, although he was to fail many times in the future, was like a "Peter" to the young church in India. He went on to do great works for God in the face of terrible persecution.

Others soon followed in his footsteps. Though they did not come in floods, the public testimony of Krishna opened the gates for many Indians to enter into salvation through Christ.

Dr. Thomas, after fifteen years of labor without evident results, was especially overwhelmed by Krishna's conversion, but it is sad to note that at this time Dr. Thomas lost his sanity.



Krishna Pal's landlord evicted him, and his own relatives plotted to murder him for becoming a Christian. Nevertheless, he witnessed boldly for the Lord wherever he went.

March 5, 1801 was almost as thrilling for the missionaries as was the day of Krishna Pal's baptism. At nearly forty years of age, William had the joy of seeing the Word of God printed and placed into the hands of the Bengali people. It alone would be

able to sustain them through the fierce storms of persecution which they would face for the sake of Christ.



Years of unrelenting toil and persistent prayer finally made the Bengali New Testament available to the Indians.

How did William Carey demonstrate the value of apprenticeship?

William was astounded at the news. The new government college in Fort William wanted to know if he would consider accepting a position teaching Bengali to the students!

How far this must have been from his remotest dreams! He was just an uneducated shoemaker with a desire to see the heathen come to know Christ. He was learning the truth of Proverbs 18:16: "A man's gift maketh room for him, and bringeth him before great men."

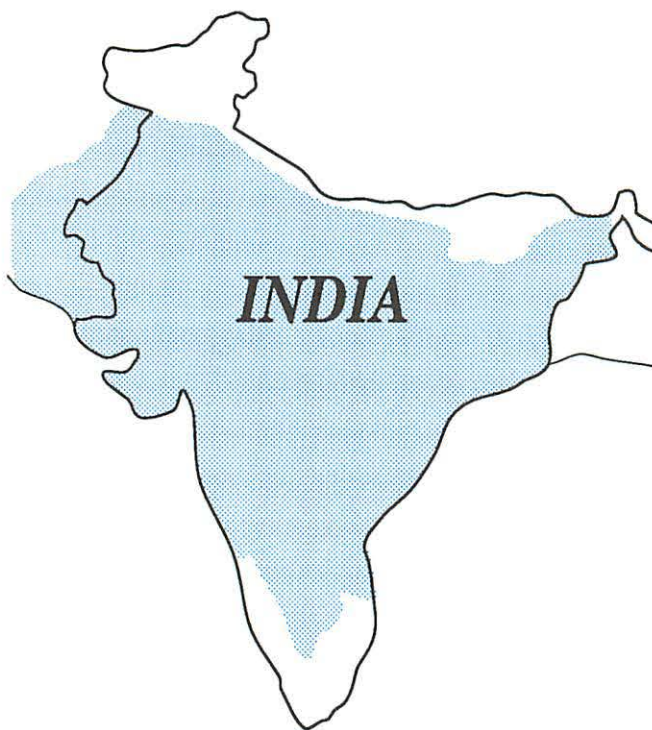
William's desire had simply been to meet needs, and in the process of meeting needs, to gain the skills which would enable him to be most effective for the Lord. Now he was a sought-after expert in the Bengali language.

Because the position was not sought and because it would bring a higher salary which could be put toward the expansion of the mission in Bengal, the missionaries agreed that William should accept the offer.

The new college had been founded by the Governor-General whose intent was to train young, new employees of the East India Company. Over the years William had the opportunity in his teaching to influence literally hundreds of men in important civil positions throughout India. He was also in contact with some of the country's best linguists and was able to consult them with questions in his translation work.

God was still at work expanding William's vision. It was now William's burden that every major language group in Asia have at least a portion of the Bible in their own tongue. This looked like an impossible task.

It would ordinarily be considered an amazing feat if a man were able to translate God's Word into just one foreign language, using dictionaries and grammar books. William did not have even these tools. He had to write his own dictionaries and grammar books as he translated.



William Carey, S. Pierce Carey, Hodder and Stoughton

William Carey did extensive translation work which made it possible for most Indians to have at least part of the Word of God in their own tongue. The shaded portions of this map show the regions of India which were affected by William's work.

When William discovered that there were no books written on the languages he was to teach at the college, he wrote his own and had them published. He also translated a number of Indian

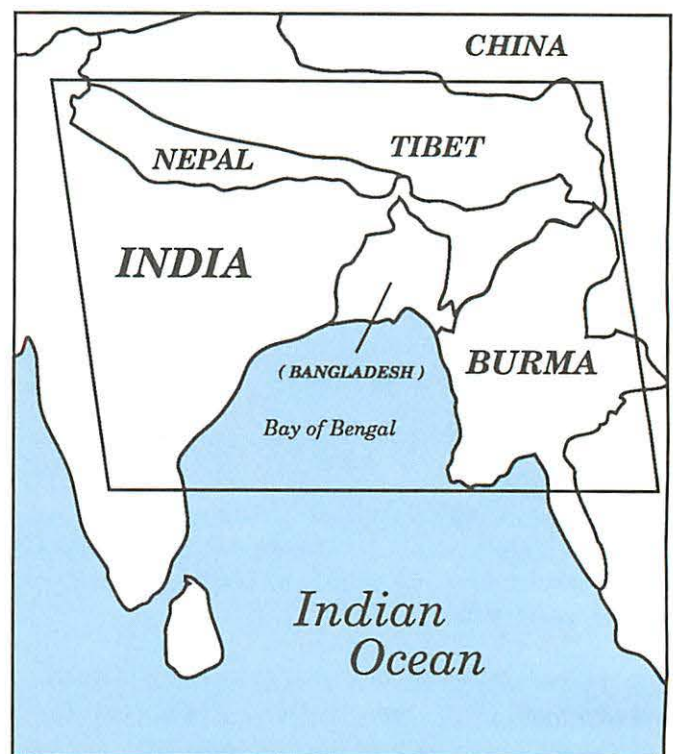
classics into English so that Britons and Americans would be able to better understand the Indian culture.

In 1806 the college promoted William to the rank of professor. Until then he had the title of "lecturer" because he was not a member of the Established Church. The following year, Brown University in America conferred on William an honorary doctorate. Although it was an honorary degree, he had certainly more than earned it. He accepted the new rank and title only because they gave him more credibility in academic circles.

Even when the world was applauding him William remained humble. One time he was invited to participate in a special banquet with many important people. A proud young man who was seated next to him snobbishly asked if it were true that he had once been a shoemaker.

William answered the fool according to his folly and said, "No." He smiled at the young man's questioning look and then quietly added, "Not even a shoemaker, sir: just a cobbler."

With promotion to the rank of professor also came the benefit of double his previous salary. William, who spent very little on himself or his family and who believed that "Missionary funds are the most sacred on earth," was delighted to have more money to give to the work of the mission.



During his lifetime William worked in the broad region indicated by this map.

How did William advise his own son on marriage?

Dorothy Carey's mental condition continued to worsen over the years. Repeatedly, William had been urged to put her in an asylum, but he insisted on keeping her in his own care. Finally in December of 1807, after thirteen years of mental illness, Dorothy Carey died.

William learned many important lessons from his own failures. Later he wrote to his son, Jabez, who had just been married and was on his way as a missionary to the Molucca Islands:

"You are engaging in a most important undertaking, in which you will have not only my prayers for your success, but those of all who love our Lord Jesus, and who know of your engagement. A few hints from a father who loves you tenderly will, I am sure, not be wasted.

"Trust always in Christ. Be pure of heart. Live a life of prayer and devotedness to God. Be gentle and unassuming, yet firm and manly.

"You are now married. Be not content to bear yourself toward your wife with propriety, but let love be the spring of all your conduct. Esteem her highly that she may esteem you. The first impressions of love . . . will soon wear off, but the trust arising from character will endure and increase. I hope that, as soon as you are settled in your cabin, you will begin and end each day together in prayer and praise to God. . . ."

William himself married twice more. Both times he chose a partner who was not only committed to him but to the work God had called him to do. Together they were able to work effectively as a team and refresh one another's spirits when they grew weary.

How did William learn the importance of a wise appeal?

William's vision of reaching Asia with the Gospel was not to go unopposed. During the first decade of the 1800s there were severe clashes between the mission and the British government.

When the Indian soldiers from the European garrison at Vellore rioted and killed more than one hundred people in what is known as the Sepoy Mutiny, someone had to be blamed. Those who were looking for a scapegoat blamed the innocent missionaries.



The bloody, year-long Sepoy rebellion produced an anti-missionary sentiment among government officials.

The government reacted by trying to deport two of the newly arrived missionaries and by telling William that the mission had to stop all public preaching and distribution of literature. They were not even allowed to send out native preachers.

For one year the missionaries observed the restrictions of the law and waited for the opposition to pass. Enemies of the work, however, brought more accusations. The new Governor-General, not being familiar with the work, made several demands on the missionaries: They must move their press to Calcutta to be under government supervision, refrain from trying to win converts among the Indians, and stop holding services.



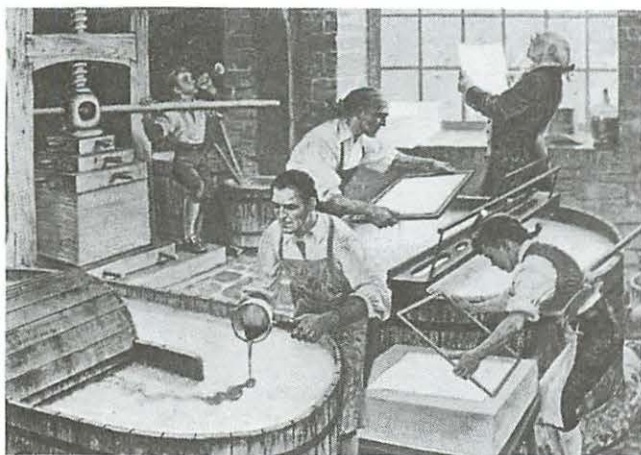
The British government officials enacted such strict laws that the missionaries were not even allowed to send out native preachers.

The missionaries were concerned that they might even be expelled from the country. William, however, wrote, "I have no doubt but our troubles will tend to the furtherance of the Gospel. . . . We mean to inform Lord Minto [the Governor-General] that *we are prepared to suffer in this cause, rather than abandon our work*; but we hope to do all in the most respectful manner possible."

God honored the humble resolution of the missionaries, and the Danish authorities interceded on their behalf. William, however, recognized that it was still important to appeal to Lord Minto.

During the personal interview which he was granted with Lord Minto, William explained the work and even offered to submit all their publications to him for approval before printing. Lord Minto was so impressed with William's discernment and willingness to cooperate that he lifted all restrictions from the work.

Because of this wise appeal the mission was able to operate in peace. God enabled them to begin producing their own type and making their own ink. As the cost of importing paper from England rose, the Lord led the missionaries to invest in a paper mill as well. By 1812 the paper mill was a large operation.



American Cyanamid Company, Organic Chemicals Division

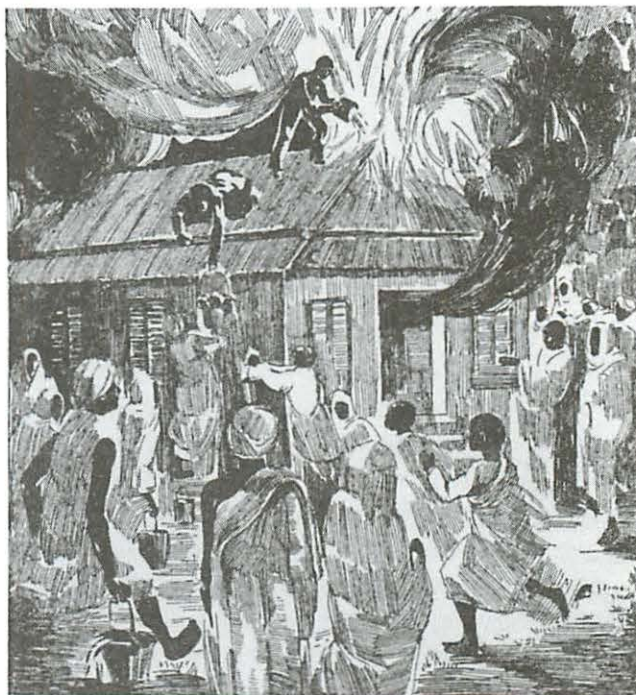
Paper-making in the days of William Carey was not as efficient as it is today, and paper that was imported to India was very expensive. This picture shows how paper was made in early America.

How did God purify and spread the mission through fire?

One evening after the workmen had left the mission for the day, one of the missionaries smelled smoke and ran to investigate. Billowing from the storeroom were thick clouds of smoke. Sheets of flame proved that their entire stock of paper—1,400

reams imported from England and 10,000 reams of their own manufacture—were ablaze. "Fire!" he yelled. Others ran to the scene to help put out the raging inferno.

Acting quickly, the missionaries closed all the windows and doors to stifle the flames as much as possible. Forming a chain, scores of mission workers, servants, and neighbors dipped water from the river and passed it across the lawn to be poured through a hole which had been hacked in the roof.



William Carey—Prophet to India, Russell Ott, The Warner Press

After four hours of battling the fire the missionaries thought it was under control.

Then someone opened a window. The fresh oxygen provided more than enough fuel for the hot embers. Flames shot through the hole in the roof, and the whole building was ablaze again within thirty minutes. The men had scarcely enough time to drag the five printing presses to safety.

The roof of the building collapsed at midnight and flames exploded hundreds of feet into the air. In the heat of the fire over two tons of type which had been purchased from England, including many fonts of Hebrew, Greek, Persian, Arabic, and Tamil, were destroyed. Over one hundred fonts of type they had cast themselves were also destroyed, along with parts of ten versions of the Bible which were moving through the presses at the time.

The most crushing loss was the original manuscripts which were destroyed. Most of them had come from William's own hand and represented years of work. In order to replace them, William would have to begin all over again.

Even in the face of this terrible news, William was able to write, "I wish to *be still, and know that the Lord is God*, and to bow to His will in everything. He will no doubt bring good out of this evil, and make it promote His interests. . . ." He was especially grateful that no lives had been lost.

The steel punches used for cutting the type for fourteen Indian languages were found undamaged under the smoldering debris. These punches which represented ten years of work enabled the men to start immediately to recast the types which had been destroyed.

As William stood looking over the ruins with tears in his eyes he said, "In one night, the labors of years are consumed. How unsearchable are the divine ways! I had lately brought some things to the utmost perfection I could, and contemplated the Mission with, perhaps, too much self-congratulation. *The Lord has laid me low, that I may look more simply to Him.*" William determined that he would not only redo the lost Scripture translations, but that he would do them better than they were before.

God's purposes soon became evident. The fire opened the eyes of England to the magnitude and importance of the work. Although times were difficult, within just two months people generously poured more than £10,000 into the Society's treasury. The Society actually had to tell the people to stop giving! They had already received more than enough money to replace what had been lost in the fire.

Even more thrilling was the vision the people suddenly caught for missions. One of William's special supporters wrote, "This fire has given your undertaking a celebrity which nothing else, it seems, could; a celebrity which makes me tremble. The public is now giving us their praises. . . . If we inhale this incense, will not God withhold His blessing, and then where are we? Ought we not to tremble? Surely, all need more grace to go through good report than through evil. . . ."

"If some new trials were to follow, I should not be surprised; but, if we be kept humble and near to God, we have nothing to fear."

How was God's blessing followed by trial?

New trials *did* come upon the mission. All of the original members of the mission Society had died. The new members of the mission Society had never met William and did not understand his vision. They thought he was attempting too much by sending

missionaries to Java, Mauritius, Burma, and other remote parts of Asia.

William's motives for doing this were revealed in a statement he made. "If our objects are large, the public will contribute to their support. If you contract them, their liberality will contract itself in proportion." This throws significant light on his famous quote: "Expect great things from God. Attempt great things for God."

If what we attempt is a vision from God, we will receive His protection and provision. If the vision is of our own making, we will experience privation and problems.

Unfortunately, visions that are our own can suffer when funds are too great as well as when funds are too little. As funds began to arrive for visions that were beyond the scope of the Society back home, William managed them as he saw fit. Although the projects may have looked worthy in themselves, they soon created animosities among the board members, who felt they had no control over William's decisions.

Some members even accused the missionaries of accumulating personal fortunes through their teaching and printing. As William tried to defend himself, vicious rumors about the missionaries spread all over England.

Such strong offenses were taken up that when new recruits came to the field, they were already bitter. As a result of this bitterness, several new missionaries left the mission to begin a work of their own in another city.

The bitterness and conflicts which continued for several years between the Serampore missionaries and the mission Society in England took their toll on William and drained much of the strength of his latter years. He counted this time as one of the most difficult of all the trials of his life. The strife was resolved only when the missionaries agreed that the Society could take over the property and appoint missionaries of their own choice.

How did rejection of God's design result in wrong goals?

For years William understood that it was "on native evangelists that the weight of the great work must ultimately rest." It had been his dream to establish a school which would train the Indians

as evangelists so they would be able to reach their own country for Christ.

William's goal was noble and his cause just, but his perspective was clouded by his past. He had never been able to accept the fact that he had not been given a college education. He always felt inferior, even though he was now one of the most respected professors in all of India and had even been honored with a doctorate. He wanted to give to others what he felt had been kept from him.

William pursued this ambitious project on his own. He knew that the British Baptists questioned the usefulness of college training even for their own pastors. He was certain that they would never approve of a college for native Indians especially because its intent was to educate "broadly," not making its specific purpose the training of men for the ministry.

Proceeding on his own, William built Serampore College, which opened its doors in 1818. His desire was to develop an educational system for training in science and the arts. He expected less than 10 percent of the men to turn out to be preachers. No preference was to be given to Christians over unbelievers, and the school was not to be a shelter from the rank heathenism of the day.

William believed that the only way to shine the light of the Gospel into the darkness of India was to allow the natives to examine the counterfeit and the real and decide for themselves which they would choose. Instruction was given in India's philosophy, literature, religion, and science **as well as** instruction in Bible and Western science.



William Carey, S. Pearce Carey, Hodder and Stoughton

Although Serampore College was given a special charter in 1827, making it legal for the college to confer degrees, no degree was given until 1915.

How did life's greatest door open for William Carey?

William persistently labored in Christian work to the very end of his life. With every new turn in the road, he saw more projects to accomplish for God. Some of the projects which took the greatest toll on his life faded with time, but the work of translating Scripture continued to brighten the way for millions to hear the Gospel and turn to the Savior. This was his crowning achievement in asking, seeking, and knocking.

At the age of seventy-two, William had translated the whole Bible or portions of it into an amazing thirty-four languages!

When asked how he could translate God's Word into so many languages, William gave a revealing reply: "Few people know what may be done till they try and persevere in what they undertake." Another time he wrote of himself, "I can plod. That is my only genius. I can persevere in any definite pursuit. To this I owe everything."

A native pundit who helped William in his translation work once wondered, "What kind of body has Carey Sahib? I cannot understand him. He never seems hungry nor tired, and never leaves a thing, till it's finished."

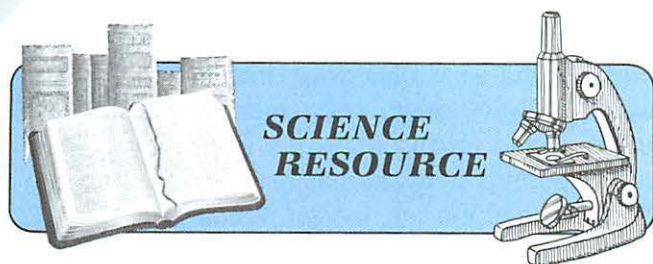
Truly, God had given William Carey supernatural strength to translate His eternal message of life in Christ. Although William had often forced closed doors open, he completed his work on earth with a humility that was to secure his name in God's "Hall of Fame."

When a friend came to visit the revered missionary statesman before he departed this life, they recalled with delight the great things God had accomplished in India through William Carey's lifelong labors. As the admiring visitor was leaving, he heard words which he was never to forget: "... You have been speaking about Dr. Carey, Dr. Carey; when I am gone, say nothing about Dr. Carey—speak about Dr. Carey's Savior!"

PROJECT

William Carey is known as the "Father and Founder of Modern Missions." Discuss how his failures in establishing family priorities and in using the provision or lack of funds as God's guidance have hindered the progress of missionaries who have followed his example.

Date completed _____ Evaluation _____



HOW DOES THE DEVELOPMENT OF WAVES REVEAL CONDITIONS THAT HINDER EFFECTIVE PRAYING?



H. Armstrong Roberts

The world's oceans contain 330 million cubic miles of water and 166 million tons of salt. If the earth's surface were completely flat, that would be enough water to cover the entire globe with 12,000 feet of water or 150 feet of salt. All this water is in constant motion, and can be whipped into tempestuous and restless waves by powerful winds.

Far below the restless surface of the sea, a strange-looking instrument measures the changing pressure of the waves above it. Without making a sound it converts those measurements into electrical impulses and relays them to a station on shore where men sit in rapt attention, watching a needle wiggle across a piece of paper.

Each flick of the needle reveals something of the life history of the waves that are washing ashore. Some of the waves have journeyed more than 6,000 miles. They bear the marks of distant storms that will never touch the shore. Others are the forerunners of storms which are building just beyond the horizon. Even before a storm can be seen, the waves it produces reveal the strength and direction of its winds.

Those who understand the language of these waves can decipher the hidden messages they carry.

They are able to predict weather conditions halfway around the world and can issue warnings hours before any danger threatens.

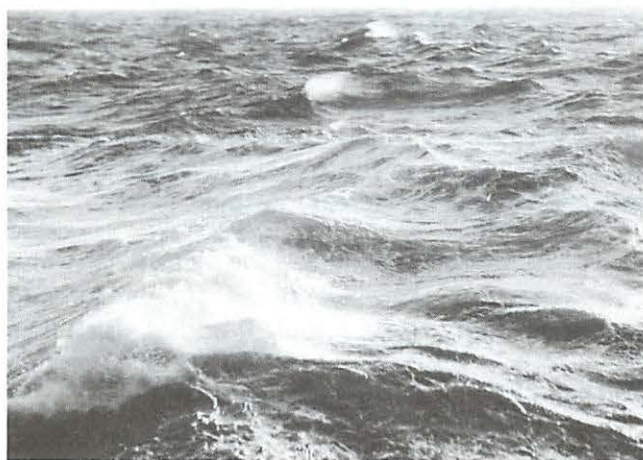
Learn how prayer mixed with doubt is like the wind-tossed waves of the sea.

"If any of you lack wisdom, let him ask of God, that giveth to all men liberally, and upbraideth not; and it shall be given him. But let him ask in faith, nothing wavering. For he that wavereth is like a wave of the sea driven with the wind and tossed" (James 1:5-6).

1 THE INTERACTION OF POWER BETWEEN TWO DIFFERENT REALMS CREATES WAVES.

At the surface of the ocean where the sky meets the sea, tremendous quantities of energy transfer back and forth between the two worlds. The sea absorbs vast amounts of heat from the sun and transfers that heat to the air above it. As the warmed air begins to rise, cool air moves in behind it to take its place. This moving air produces wind that transfers energy back to the sea in the form of waves.

Waves begin as microscopic vibrations of surface water molecules which oscillate like the string of a violin as a bow is drawn across it. It is this movement at the juncture of air and water which produces the first resemblance of a wave.



Ewing Galloway

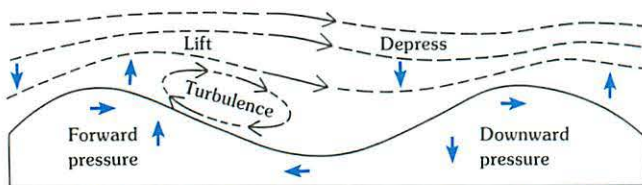
The sea acts like a violin string, and the wind acts like a bow to set the string vibrating. As the two worlds rub against one another, they amplify the vibrations and generate powerful waves.

• Friction and pressure produce waves.

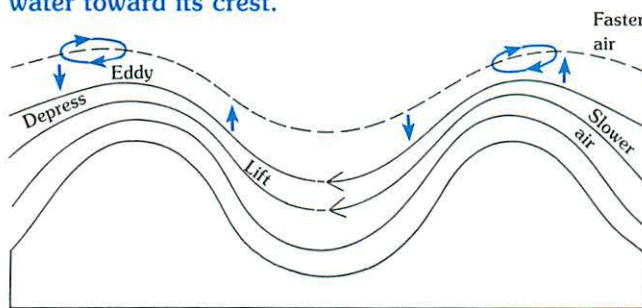
Friction between the air and water momentarily slows down the wind and speeds up the water. This creates a shear line along which the layers move at different speeds. The resulting differences in the velocity of the adjacent layers cause both the air and the water to form turbulent eddies.

As the air swirls forward, it literally rolls across the surface of the water, lowering the air pressure just ahead of a wave and increasing the air pressure just behind a wave. This alternating rise and fall of pressure gradually molds a wave into its characteristic shape.

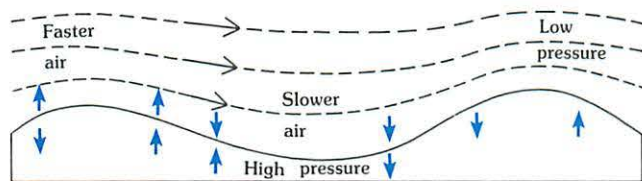
THEORIES OF WAVE DEVELOPMENT



Turbulent air pushes a wave forward and lifts water toward its crest.



Slower air near the surface begins to swirl, lifting at one point and pushing down at another.



Bernoulli's principle suggests that faster-moving air at the crest of a wave decreases pressure while slower moving air in the trough increases pressure, causing the wave to increase in size.

The shear line between the air and the water also causes the surface layer of water to swirl forward and downward. These turbulent eddies alternately force water down and then lift it back up. Within a matter of seconds miniature waves appear.

If the wind continues to blow, the air speeds up again as it curves over the crest of each miniature wave. The increased speed lifts the crests of the waves higher in much the same way that air rushing over the curved surface of an airplane wing lifts the wing.

As the wind dips down into the trough of a wave, it slows down once more, increasing the pressure and forcing the water back down. These two opposing forces alternately lift and then depress the surface of the sea, increasing the heights of the waves with each succeeding gust.

• Waves have limits which they cannot exceed.

Researchers have identified three factors that limit wave height. They are *fetch*, *duration*, and *wind velocity*. *Fetch* is the distance a wave has traveled under stormy conditions. *Duration* is the length of time the wind has blown. *Velocity* is the speed of the wind.

Wind continues to build a wave until it reaches its maximum height. A twenty-knot wind, for example, can whip up a six-foot wave after an exposure of about ten hours or a fetch of about two hundred thirty miles. It takes more than thirty hours or almost seven hundred miles for the same wind to build an eight-foot wave and up to fifty-five hours and thirteen hundred miles to shape a nine-foot wave.

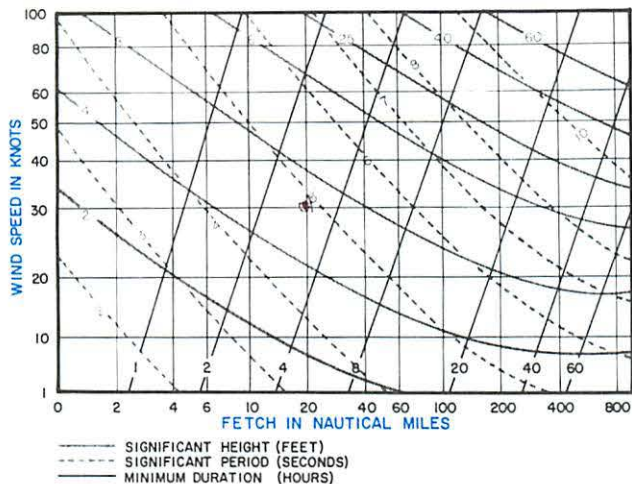
Waves cannot grow any taller than one-seventh of the distance between crests. No amount of wind can lift them higher without their falling over and losing their energy. Oceanographers refer to waves that have reached their peak as a *fully developed sea*. In a fully developed sea the tallest waves are the longest waves and also carry the most energy.

WAVE CONDITIONS
IN A FULLY DEVELOPED SEA

Wind Velocity in knots	Length of fetch (nautical miles)	Duration (hours)	Average height (feet)
10	10	2.4	0.9
15	34	6	2.5
20	75	10	5
25	160	16	9
30	280	23	14
40	710	42	28
50	1420	69	48

Sailors often use a special chart to predict the size of waves they might expect to encounter under various conditions. The following chart shows the size of waves in winds of 1–100 knots and fetches of 0–800 nautical miles. The sizes of waves these conditions produce are indicated by the curved lines.

ESTIMATING THE SIZE OF WAVES AT SEA

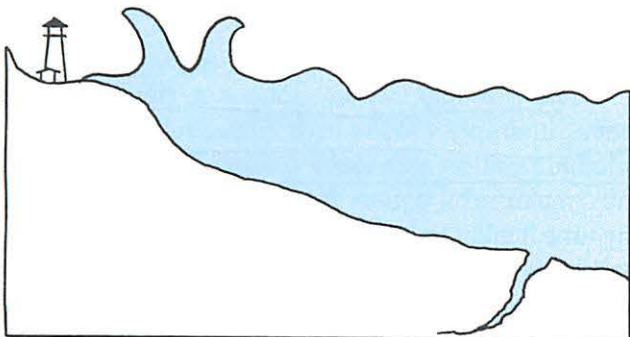


To use the above chart: Identify the wind speed, and read across to a particular fetch. The curved solid line closest to the intersection of these two lines shows the height of the largest waves that can be produced. The diagonal line closest to the same intersection tells (in hours) how long a duration is required to achieve a fully developed sea.

- **Hidden forces can multiply the power of waves.**

Another type of wave called a *tsunami* ([t]soo-NAH-me) forms at the ocean floor. A movement deep inside the earth may trigger a giant fracture in the ocean floor. The vibration from this "earthquake" radiates outwardly at speeds of almost five hundred miles an hour, causing the formation of a wave only a couple of feet high, but with crests more than one hundred miles apart.

Such waves are almost imperceptible at sea, but they carry tremendous amounts of energy. As these waves near shallow water along the coast, their energy becomes concentrated into waves which may exceed fifty feet in height.



Tsunami is a Japanese word meaning "harbor wave." Tsunamis travel unnoticed in the open sea, but rise high enough to engulf six-story buildings on shore.

Other waves form at boundaries within the sea itself. Both temperature and salt concentrations create layers deep beneath the surface. Because these layers rub against one another much like the wind rubs against the sea, they may create underwater waves which are several hundred feet in height.

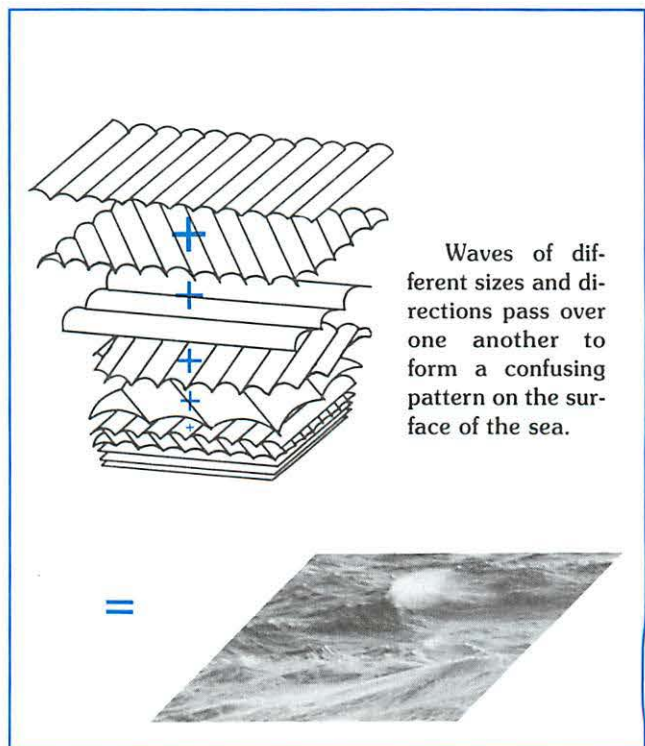
It was possibly an underwater wave that sank the submarine *Thresher* in the North Atlantic in 1963.

- **Storms can both create waves and calm them.**

Ice, snow, and rain break down waves and keep them from growing. For example, ice crystals create so much friction between water particles that it is almost impossible for wind to shape or lift any waves at all. Hail storms and rain can also change a raging sea into silky smoothness almost instantaneously by breaking up the circular eddies that allow waves to form in the first place.

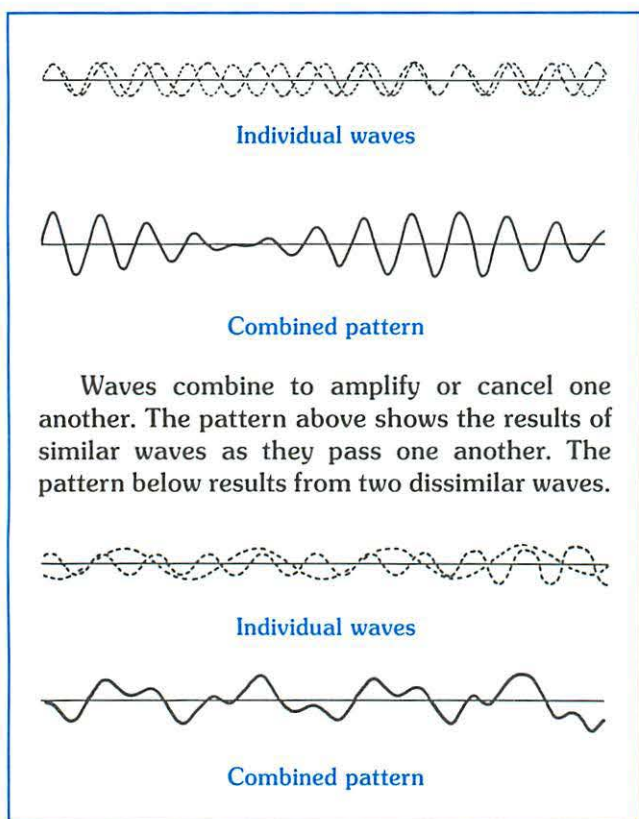
2 THE REAL STRENGTH OF A WAVE IS BELOW THE SURFACE.

A choppy sea seems to have no rhyme or reason to its rise or fall. It seems to be a confused pattern of random movements. Yet, each individual wave has its own wavelength, height, period, and speed. Even a storm-tossed sea is, in fact, a product of countless regular waves, mixing together to create an irregular pattern on the surface.



Seas become complicated because waves can intermingle freely in the open sea. Faster waves overtake slower ones, passing right through one another without altering their own unique characteristics. Waves from different directions can also cross one another without losing their identities.

When two wave crests meet, they lift the surface much higher than either wave could alone, producing a new wave equal to the sum of the two. However, as the two waves separate, each returns to its original form. When a crest and a trough meet, they cancel one another, leaving the surface level. Likewise, when two troughs meet, they combine to create a depression equal to the sum of two individual troughs.



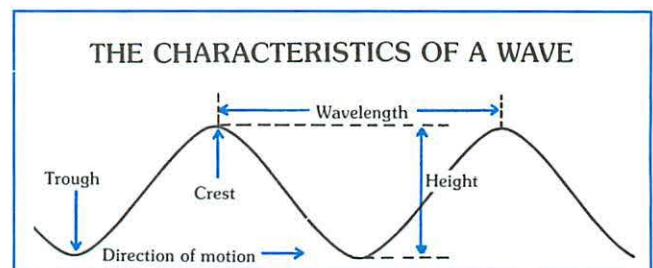
To decipher these complex interactions in the sea, oceanographers use electronic devices to locate and measure individual waves. These devices use a process called *spectral analysis* to look for just one wave characteristic at a time.

It has been reported that Polynesian explorers learned to navigate from one island to another by studying these same patterns. Instead of electronic devices, however, they used a mat of loose sticks to unravel the hidden meanings of the waves. By analyzing the patterns of waves in the open sea, they could calculate the direction of distant islands.

- ***Each wave group has unique characteristics.***

The height of a wave is measured from its trough to its crest, that is, from its lowest point to its highest point. The length of a wave is measured from crest to crest, or from trough to trough, the total distance a wave travels before it repeats itself.

The period of a wave is a measure of how often two successive crests pass a fixed position and how often a wave repeats itself. The period of a wave may vary from a fraction of a second for ripples, to fifteen or thirty seconds for chops and swells to fifteen or twenty minutes for tsunamis.



Each wave has a characteristic height, wavelength, period, and speed.

If you know both period and wavelength, you can calculate a wave's speed. Likewise, if you know the speed and wavelength, you can calculate period. In other words, knowing any two of these three measurements will allow you to calculate the third.

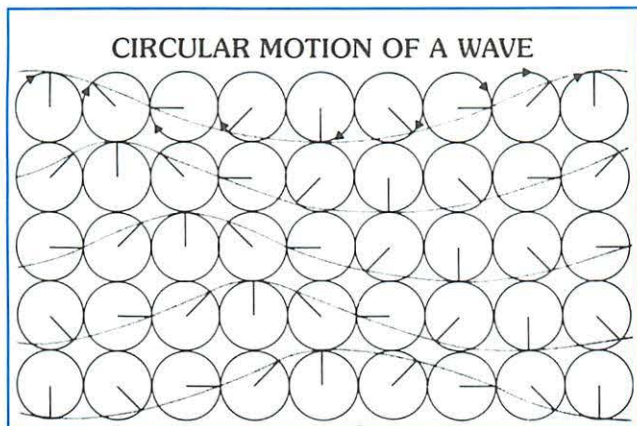
$$\text{WAVELENGTH} \div \text{PERIOD} = \text{SPEED}$$

As a rule, you can multiply the period by three to calculate the speed of a wave in knots. This is possible because the wavelength and period of ocean waves are proportional to one another. In a fully developed sea, the ratio of wavelength to period is roughly three to one. Thus, a wave thirty feet long has a period of about ten seconds.

- ***Waves create false impressions of forward movement.***

Surprisingly, water does not travel with a wave. It simply moves in a circle, returning to its original position as a wave passes. The diameter of the circular orbit equals the height of the wave, and the time it takes to complete each orbit is equal to the period of the wave.

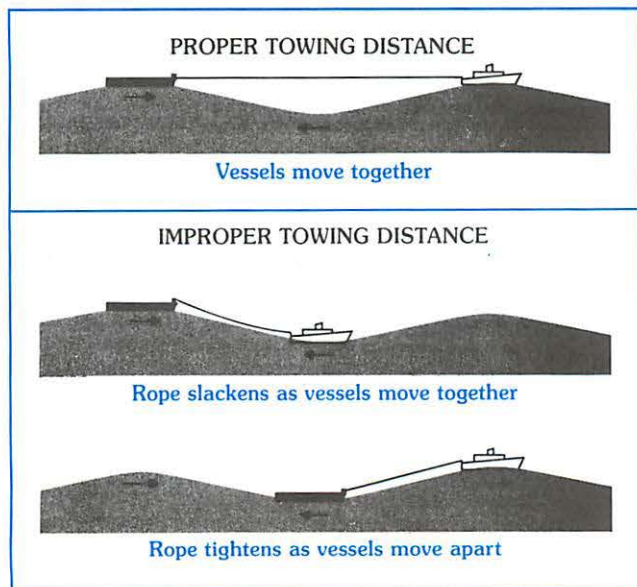
A floating cork moves backward and up, then forward and down in a circular motion as each wave passes under it. Each time, the cork returns to its original position after the wave has passed.



As a wave passes, a cork merely bobs up and down and back and forth in a circular motion.

In reality, a slight forward motion accompanies very steep waves. That is because water at the top of a crest moves forward longer than water in a trough moves backwards. You can demonstrate this in a kitchen sink or in a bathtub. Notice that a toy boat or a bar of IvoryTM soap floats slightly away from any source of waves.

In a high sea it is important that a towing vessel and a towed vessel be in phase with the waves. If the vessels are out of phase, one vessel may move backwards along a wave as the other is moving forward. This phenomenon causes the towrope to go slack and then suddenly jerk taught. For proper towing, the towrope must have the same length as the waves so each vessel is moving along the same part of the wave.

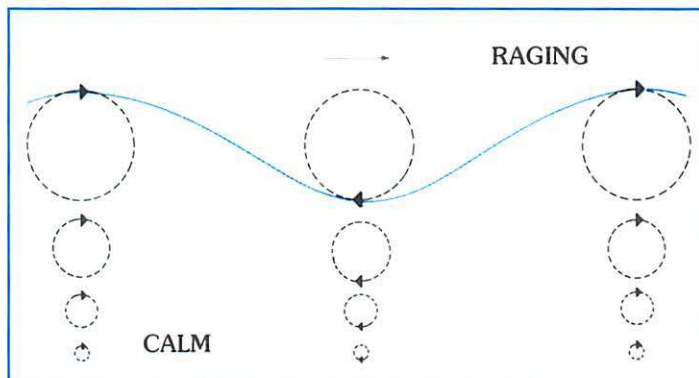


• **Deep waters remain calm even in violent surface storms.**

Beneath the surface the circular molecular orbits which give form to waves grow smaller and

smaller with increasing depth. In fact, at a depth of only half a wavelength, the orbits' diameters are only $\frac{1}{23}$ as large as they are for water on the surface.

At a depth of one full wavelength, molecules of water move only $\frac{1}{532}$ as far as those on the surface. This means that the movement of the waves affects little more than the top few feet of the ocean. Beneath the surface the sea stays relatively calm, even in the most violent storm.



Because water on the surface rotates in much larger orbits than water beneath the surface, the calm of the deep is rarely revealed on the surface.

• **Hidden barriers compound waves.**

When waves bounce off underwater barriers and turn back upon themselves, they produce a standing wave called a *clapotis*. A clapotis is a giant wave that does not move. This wave remains in one position as the water making up the wave swirls around and around in a circle.

These reflected waves actually double their energy as they reinforce themselves. Each reflected crest amplifies the next incoming crest, making it twice as big. Each reflected trough also amplifies the next incoming trough, making it twice as deep. The result is a series of waves that appears to stand still.

3 YOUNG AND OLD WAVES VARY IN APPEARANCE BUT NOT IN POWER.

Long after the winds of a storm have died down, the waves these winds have created continue to spread their influence throughout the world. The only major energy loss comes from the divergence of the waves themselves. As the waves spread outwardly, their energy is distributed over a greater area. Without wind to restore the dissipated energy, waves lose about one third of their height each time they travel a distance in miles equal to their wavelength in feet.

Yet, large waves with especially long wavelengths are able to travel thousands of miles. As they pass out of a storm, their height diminishes, but the distance between crests increases. This helps to preserve their energy over long distances. Eventually they become fairly stable swells, moving at an average of about fifteen miles an hour.



Young waves have steep sides which accentuate a pointed peak. They quickly lose their energy soon after they move away from a storm. Older waves which have traveled long distances are smooth and round in shape. They have long wavelengths and advance as a series of shallow swells which deceptively hide the incredible energy they carry.

- ***The largest waves have the greatest endurance.***

The horrendous storms and long fetches of the Pacific Ocean whip up such large waves that they travel faster than those in other parts of the world. These waves average approximately thirty-five miles an hour and exert their influence much farther than other smaller waves.

Smaller waves travel more slowly and lose their energy more quickly. They eventually form whitecaps and disappear. Only the larger waves are left to reveal the presence of the storms that created them.

However, as these waves continue toward distant shores, they may encounter other storms which may change their direction, size, and shape. Strong, opposing winds can erase waves completely, while following winds may whip them up even higher than before.

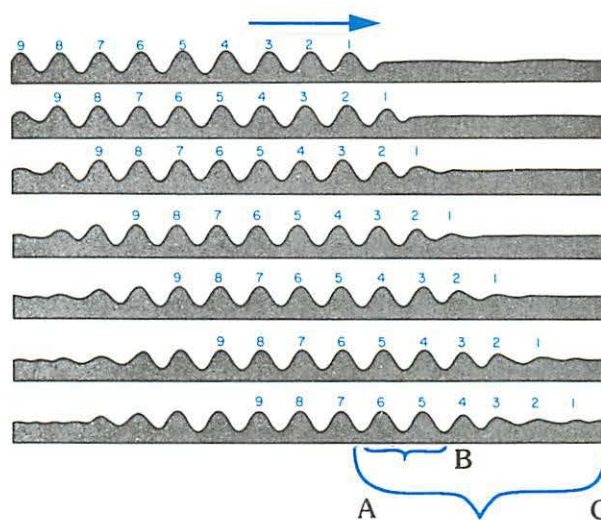
- ***Waves transfer energy to the next generation.***

A group of waves travels only half as fast as an individual wave. This fact has puzzled people

for centuries. They noticed that the first wave in a group seems to move forward and then disappear. The waves behind it also appear to vanish as they reach the front of the group. However, as a wave moves forward and dies, new waves appear behind it. These new waves grow in size as they travel forward through the group. Then they, too, begin to ebb as they reach the front of the group.

The cause of this phenomenon lies in the way waves transfer energy. Surprisingly only half of a wave's energy moves with the wave. The other half is invested in the potential energy stored in the water that has been lifted high above the level surface. As a wave falls back down, it releases this energy in order to lift the next crest as it passes.

This means that the front wave moves forward with only half its energy. It must lift still water by itself. Only when the energy of the following wave reaches that point does the form of the wave take on its full potential. As the last wave passes, it collects the last bit of energy from the water and the wave vanishes, leaving only a quiet surface behind.



The Seas in Motion, F. G. Walton Smith, Thomas Y. Crowell Co., New York

Notice that evidence of the first wave has moved from A to C, while the first full-size wave has moved only from A to B.

- ***Waves produce unexpected results.***

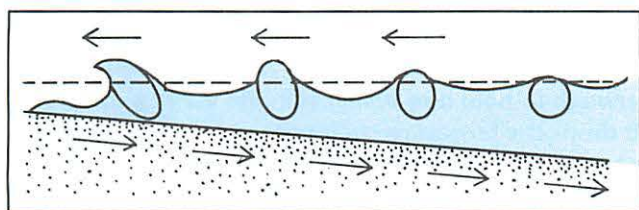
Waves play an important role in making rain. Waves create small air bubbles which trap oxygen, nitrogen, and other gases and mix these gases into the sea. Each tiny splash also mixes salt with the gases. As the bubbles break and the gases are carried upward by the wind, the tiny particles of salt become a part of the atmosphere. These tiny particles constitute the nuclei of raindrops, snowflakes,

and clouds. Without them, not only would there be nothing for water vapor to condense around, but there would also be more time between rains.

Many of the bubbles, however, dissolve in the seawater itself. The bubbles that dissolve help to maintain the oxygen necessary for fish and the nitrogen for the vegetation.

4 A WAVE'S FORCE IS UNLEASHED AT THE LIMIT OF ITS REALM.

As waves approach the shore, they begin an amazing transformation which remolds their energy into its original fury. This happens when the depth of water reaches half the wavelength of a wave. As the orbiting water molecules that transport a wave's energy bump into the bottom, the friction slows the wave down, causing the molecules to become more crowded. The wavelength shortens, and the stored energy lifts the wave up into the air.



A swell with crests two hundred feet apart typically begins to touch the ocean floor when the ocean is about one hundred feet deep. As the circular paths of the orbiting water molecules are progressively squeezed together, the wave grows taller and thinner. Because the bottom of a wave slows down faster than the top, the wave also begins to lean forward.

As a wave progresses into shallow water, its height continues to increase until it reaches about two-thirds of the water's depth. At that point the top of the wave is moving forward so much faster than the bottom of the wave that it tips forward and falls over. When this happens, the wave is said to "break."



Ewing Galloway

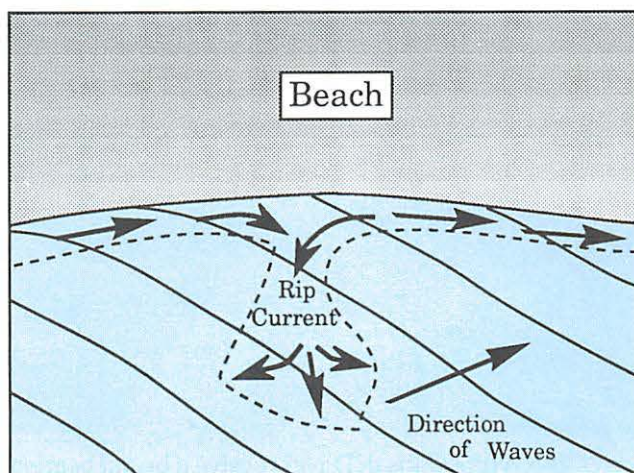
In theory, a wave breaks when the forward orbital velocity of water particles at the crest exceeds the velocity of the wave itself. Like a runner who stubs his toe, a wave literally "trips" forward and "falls on its face." Some waves crash headlong onto the beach with the roar of a cannon. Others collapse more quietly into a gentle foam.

In deep water with no shore over which to trip, a wave breaks only when its height approaches about one-seventh that of its wavelength. That ratio serves as an upward limit set by the cohesive properties of water. A wave simply cannot hold itself together when it gets that tall and thin.

• Waves create dangerous undercurrents.

As waves break upon the shore, water begins to "pile" up on the beach. Sometimes it accumulates until it is several feet higher than the level of water offshore. Because this water is trapped on shore by the pounding surf behind it, it tends to flow parallel to the shoreline until it finds a way back out to sea.

When it finds a path of least resistance, it rushes seaward like a swift river. Such a "river" is called a *rip current*. Rip currents are dangerous because they can carry a swimmer out to sea, no matter how hard he tries to swim against it.



Water that accumulates on a beach returns to the sea at the point of least resistance. A swimmer caught in such a current should swim *across* the current rather than against it.

• Waves produce dramatic and imperceptible changes.

Beaches never remain the same. They change constantly as the sea alternately dumps tons of sand on the shore and then washes it away. For example,

in the course of a single year, waves move enough sand across the beach at Santa Barbara, California, to build a sand castle the size of twenty football fields with walls seven feet high. Yet, with all that sand movement, there may not be any apparent change in the beach whatsoever. It looks the same even if the sand which makes it up is different.

Net changes in a beach occur only when the forces which deposit and remove sand become unbalanced. When this happens, a coastline can recede or grow as much as ten feet a day. For example, old maps of coastal areas of Great Britain show towns and villages which have disappeared into the sea.

On the other hand, new towns have sprung up where the sea has added shoreline at astonishing rates. For this reason the coastline of England is never the same for any two consecutive days.



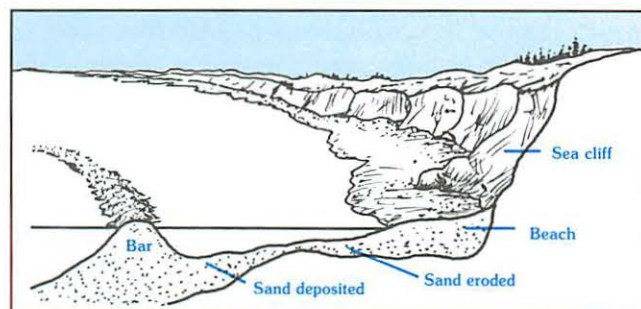
The White Cliffs of Dover receive a brutal beating from storm waves which are concentrated by the funneling effect of the English Channel.

• ***Waves unleash unexpected power.***

The power of a wave is probably the greatest single factor in determining a wave's effect upon a beach. Small waves with less energy lift sand vertically, carrying it only slightly closer to the beach. These waves lose what little energy they have so quickly that they drop any sand they are holding before they can wash it back out to sea.

Larger storm waves, however, cut more deeply into the sand and keep the sand suspended longer. Because the sand does not settle as storm waves roll across a beach, it is carried out to sea and dropped elsewhere.

Most of the sand that is removed from a beach is eventually deposited offshore, forming a long bar which runs parallel to the beach. Once the storm waves cease, however, quieter waves gradually carry the sand back to the shore where it is once again deposited on the beach.



Water carries sand only as long as it moves fast enough to hold it in suspension. As water slows down, it drops the largest particles of sand first. Only after it comes to a halt do the finest particles fall out. In this way waves selectively sort out sand according to its size and weight.

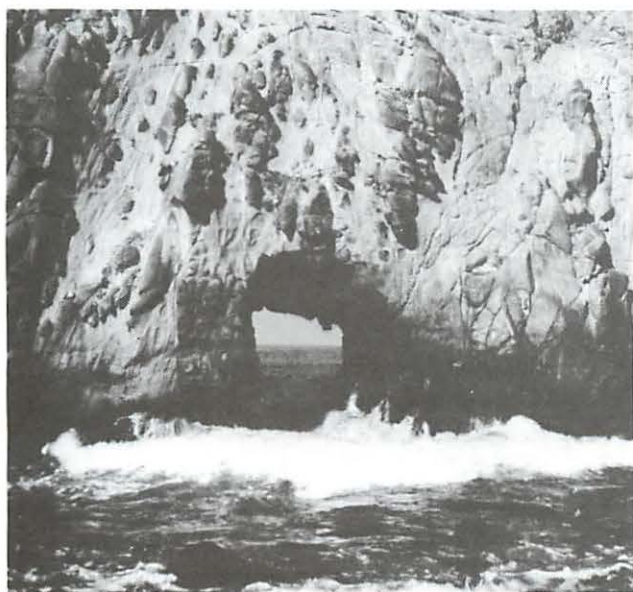
The energy of a wave is proportional to its length and the square of its height. Obviously, the taller and longer the wave, the more energy it carries. Experiments have demonstrated that a ten-foot wave with a hundred-foot wavelength generates 1,200 pounds of pressure upon every square foot of surface it contacts.



A single wave such as this may exert a total force of more than a half-million pounds.

The effect of such incredible energy is sufficient to move solid masses of concrete hundreds of yards. In some instances rocks have been hurled with such force that they have broken windows in lighthouses three hundred feet above the sea. Storm waves which may generate up to 6,340 pounds of force per square foot have tossed 200-pound boulders like cannonballs more than 140 feet into the air. Breakwaters weighing 2,600 tons have been washed away in a single night.

Perhaps the most striking demonstration of a wave's power is revealed when it traps a large pocket of air against a rock or other immovable obstacle. As the wave compresses the pocket of air in such a way that the thickness of the bubble is less than half its height, it creates resounding shock waves. The thinner the pocket becomes, the more the pressure increases. In these instances, the bubble literally explodes, with jets of water exceeding 16,000 pounds of force per square foot. These explosions are sufficient to drill holes through solid rock.



H. Armstrong Roberts

Sea caves, bridges, and other formations are evidences of the explosive power of waves. Of much less dramatic effect is the abrasive wearing away of rock and sand particles. As wind and waves stir up the sand, it acts like a scouring pad to polish the surfaces of stones and seashells on the beach.

- ***Various factors determine a wave's destructiveness.***

Factors which determine whether beaches are destroyed or restored include the texture of the sand, the angle of the waves, the contours of any off-shore reefs or canyons, and the power of the waves themselves.

□ ***The softness of the beach***

Course sand acts like a sponge to soak up water. This characteristic allows waves to mix the sand on the beach and move it around easily.

When waves deposit sand, the sand accumulates very quickly. However, when waves wash sand away from the shore, beaches also lose sand very quickly. Because such beaches change so rapidly, they typically have a much steeper slope than most other beaches.

When beaches contain fine sand packed so tightly that water cannot sink in, waves flow smoothly over the sand without adding to it or stripping it away. These beaches remain more stable and are typically hard and flat with little slope.



Ewing Galloway

The soft volcanic rock of Hawaii produces fine sand which packs tightly and leaves wide, gently sloping beaches.



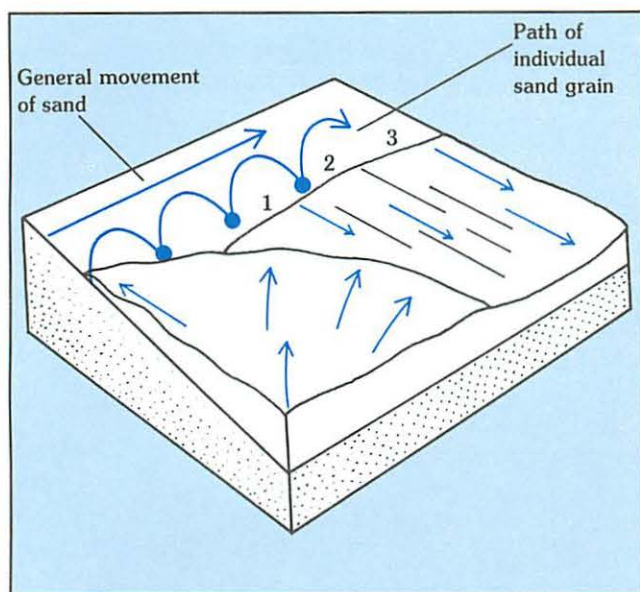
Ewing Galloway

Beaches made of large pebbles are typically narrow and steep. Because they are more susceptible to erosion than flatter beaches, they are likely to change more quickly.

☐ **The angle of approach**

Waves approaching a shore at a sharp angle tend to remove sand from the upwind side of a beach and deposit it on the downwind side. As the waves continue to pound on a beach at an angle, they can move tons of sand down the shoreline for many miles.

Angled waves also tend to bend as they approach a beach. This bending occurs because the front of a wave slows down as it reaches shallow water. The part of the wave that remains in deeper water, therefore, travels faster, causing it to bend.



Waves washing ashore at an angle move sand downwind in a scalloped pattern. Offshore currents which move parallel to the shore may move sand downwind for many miles.

☐ **The protection of barriers**

On an irregular shoreline, waves may reach the beach from a variety of different angles. However, as a rule, the bending waves tend to concentrate their energy on the headlands and capes but pass by the bays and coves. This has the net effect of smoothing out the most prominent points of a coastline. Areas that jut out are worn away, while those that recede are filled in.

Rocky ledges and shoals offshore also affect the impact of the waves upon the shore. These submerged highlands absorb much of a wave's energy as it passes over them, robbing them of their power.

The highest waves break over these barriers, losing their stored energy before they ever reach the shore. Such structures help to make excellent harbors because anchored ships are then protected from the pounding surf.



Protective coral reefs surround many tropical islands. The reefs cause waves to break before they reach the shore, dissipating the waves' energy and allowing them to wash harmlessly onto the beach without eroding the island.

PROJECT

Pray more effectively by discovering how God uses waves to reveal His character.

- ☐ The *Sovereignty* of God revealed in His decrees
 - Read Proverbs 8:29 and Jeremiah 5:22.

God has no boundary

- ☐ The *Omniscience* of God revealed in His provisions
 - Read Psalm 33:7 and Jonah 1:15.

God has control

- ☐ The *Omnipotence* of God revealed in His control
 - Read Psalms 89:9, 107:23-31; and Matthew 8:26.

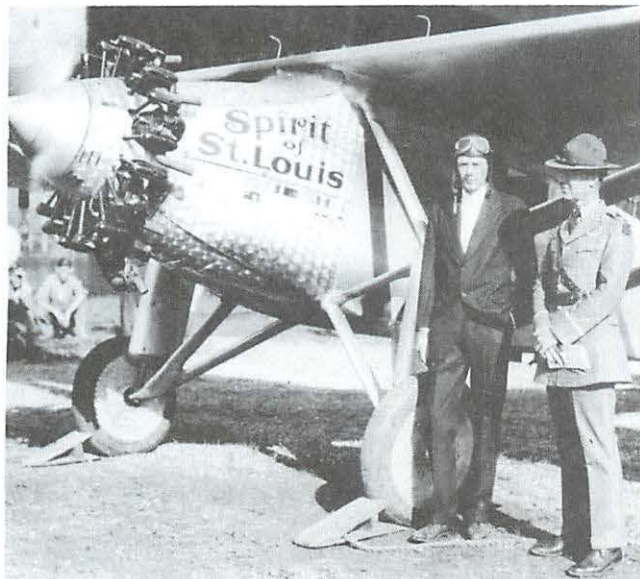
God in control



Date completed _____ Evaluation _____



HOW DO EQUATIONS ILLUSTRATE GOD'S SATISFACTION OF OUR ASKING, SEEKING, AND KNOCKING?



H. Armstrong Roberts

In 1927, Charles Lindbergh took off in his single-engine plane with the goal of becoming the first pilot to fly across the Atlantic. The success of his mission and the preservation of his life depended upon his ability to satisfy many mathematical equations.

Jesus presented a significant analogy when He said, "If ye then, being evil, know how to give good gifts unto your children, how much more shall your Father which is in heaven give good things to them that ask him?" (Matthew 7:11).

This analogy can also be expressed in the form of an equation, as illustrated by Matthew 7:12:

THEREFORE

"... all things whatsoever ye would that men should do to you,

+

do ye even so to them:

= for this is the law and the prophets."

(x)

+

(y)

=

(z)

The following characteristics of mathematical equations have direct application to the requirements God has made for us to ask, seek, and knock for His good gifts.

1 A true solution perfectly satisfies the equation.

Whether you realize it or not, you solve algebraic equations almost every day. Suppose you are baking cookies and the recipe calls for three cups of flour. You reach into the flour canister and measure out two cups of flour. Just then, the phone rings and you are interrupted. When you return, how much more flour must you measure out to perfectly satisfy what is needed for the recipe? The answer is one more cup.

You just solved the algebraic equation:

$$2 + x = 3$$

OATMEAL-RAISIN COOKIES

- 1½ c. butter
- 1½ c. maple syrup or honey
- 3 eggs, beaten
- 3 Tbsp. buttermilk
- 3 tsp. vanilla extract
- 3 c. whole wheat flour
- ¾ c. brown rice flour
- 1½ tsp. baking soda
- ¾ tsp. baking powder
- ⅜ tsp. ground coriander
- 3 c. rolled oats
- 1½ c. raisins



Melt the butter in a saucepan over low heat. Stir in the maple syrup or honey. When the mixture has cooled slightly, add the eggs, buttermilk, and vanilla.

In a medium bowl, combine the flours, baking soda, baking powder, coriander, oats, and raisins. Into this mixture stir the liquid ingredients. Place the dough by spoonfuls onto a lightly oiled baking sheet, leaving room for spreading. Bake in a preheated oven at 350°F for about 12 minutes.

When God provides a solution to a problem, His solution completely satisfies every aspect of our need. If a cook does not completely satisfy every aspect of a recipe, the cookies will not be their best.

In the preceding equation, the 2 represents the number of cups you had already measured out. The 3 represents the number of cups required by the recipe. The x stands for the unknown number of cups required to complete the recipe.

Notice that when you substitute 1 for x , the two sides of the equation are equal.

$$2 + x = 3$$

$$2 + 1 = 3 \text{ [substituting 1 for } x\text{]}$$

$$3 = 3 \text{ [adding } 2 + 1 \text{ to get 3]}$$

One cup of flour completes the recipe perfectly, just as the number 1 completes the equation perfectly. No other number solves the above equation. All other numbers are either too great or too small. Perhaps more importantly, no other amount of flour will make the cookies taste just right. Adding more flour to the recipe makes the cookies hard and dry, while adding less flour leaves them runny. Answers that are “close” are simply not acceptable as solutions.

Practice Problems A

What value of x completely satisfies each of the following equations? (Review Resource E of Booklet 18 for help in solving these equations.)

$$1. 4 + x = 6$$

$$2. x + 7 = 19$$

$$3. x - 5 = 17$$

$$4. 2x + 14 = 22$$

$$5. 2x + 7 = 3x + 4$$

$$6. 3(x + 2) = x + 14$$

Good gifts satisfy every aspect of our need.

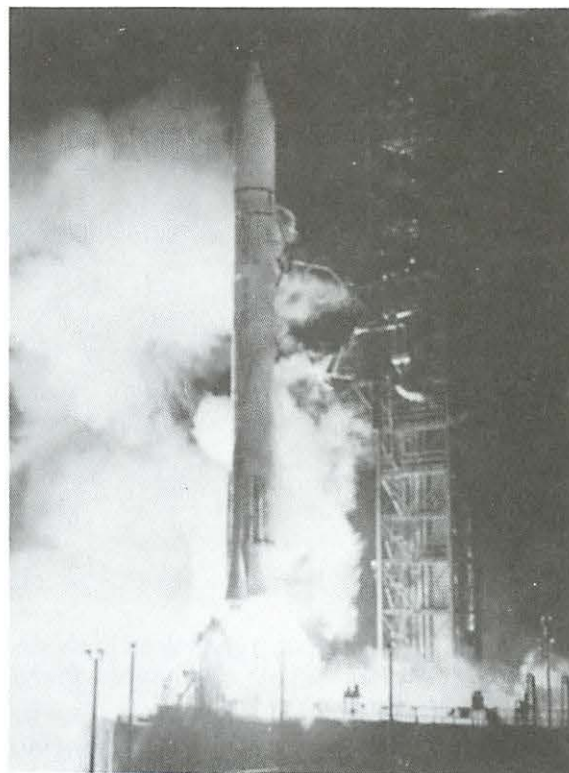
2 A true solution recognizes all the right answers.

Many algebraic equations have only one solution. However, there are some which have more. Equations which have an x^2 , x^3 , and x^4 term in them have two, three, and four correct solutions, respectively, which cannot be overlooked. x^2 is read “ x squared,” x^3 is read “ x cubed,” and x^4 is read as “ x to the fourth power.”

Mathematicians call the superscripts 2 , 3 , and 4 , *exponents*. An exponent is a “shorthand” way of writing the number of times a quantity is to be multiplied by itself. In other words, x^2 is an

abbreviation for “ x times x .” x^3 means “ x times x times x .” x^4 means “ x times x times x times x .”

The 2 , 3 , and 4 are called the “degree” of x . Mathematicians have discovered that any equation having an x^2 as its highest degree automatically has two solutions which satisfy the equation. An equation that has an x^3 has three solutions. An equation that has an x^4 has four solutions, and so on. A mathematical solution to any of these equations which does not include all the possible answers is an incomplete solution.



Second-degree equations are called *quadratic equations*. They are useful for finding the largest and smallest areas and for tracking the trajectories of moving objects such as rockets and satellites. Third-degree equations are useful in calculating volumes of irregular shapes.

For example, consider the equation:

$$x^2 - 3x + 2 = 0$$

It has an x^2 term, indicating that there are two solutions which will satisfy the equation. The two solutions are 2 and 1. If you replace x with 2, it satisfies every aspect of the equation.

$$x^2 - 3x + 2 = 0$$

$$2^2 - (3 \times 2) + 2 = 0 \text{ [substituting 2 for } x\text{]}$$

$$(2 \times 2) - (3 \times 2) + 2 = 0 \text{ [writing out } 2^2\text{]}$$

$$4 - 6 + 2 = 0 \text{ [multiplying]}$$

$$0 = 0 \text{ [adding]}$$

However, a good mathematician also notices that there is another solution to the equation which completely satisfies every aspect of it. If you replace the x with 1, it also supplies a perfect solution.

$$\begin{array}{rcll} x^2 & - & 3x & + 2 = 0 \\ 1^2 & - & (3 \times 1) & + 2 = 0 \text{ [substituting 1 for } x\text{]} \\ (1 \times 1) & - & (3 \times 1) & + 2 = 0 \text{ [1}^2 \text{ is simply } 1 \times 1\text{]} \\ 1 & - & 3 & + 2 = 0 \text{ [multiplying]} \\ & & 0 & = 0 \text{ [adding]} \end{array}$$

While there is only one problem, it has two solutions. Both solutions completely satisfy the equation.

Here is an example of an equation with an x^3 term. How many solutions does it have?

$$x^3 - 6x^2 + 11x - 6 = 0$$

There are three solutions: 3, 2, and 1. In verifying this, you would first replace each x in the equation with “3,” then solve the equation. The number 3 completely satisfies every aspect of the equation because both sides of the equation will be equal. Then substitute the number 2, and finally substitute the number 1. All three answers are correct.

- Substituting “3” as a possible answer:

$$\begin{array}{rcll} x^3 & - & 6x^2 & + 11x - 6 = 0 \\ 3^3 & - & (6 \times 3^2) & + (11 \times 3) - 6 = 0 \\ (3 \times 3 \times 3) & - & (6 \times 3 \times 3) & + (11 \times 3) - 6 = 0 \\ 27 & - & 54 & + 33 - 6 = 0 \\ & & 0 & = 0 \end{array}$$

- Substituting “2” as a possible answer:

$$\begin{array}{rcll} x^3 & - & 6x^2 & + 11x - 6 = 0 \\ 2^3 & - & (6 \times 2^2) & + 11 \times 2 - 6 = 0 \\ (2 \times 2 \times 2) & - & (6 \times 2 \times 2) & + (11 \times 2) - 6 = 0 \\ 8 & - & 24 & + 22 - 6 = 0 \\ & & 0 & = 0 \end{array}$$

- Replacing x with “1” also results in a correct solution:

$$\begin{array}{rcll} x^3 & - & 6x^2 & + 11x - 6 = 0 \\ 1^3 & - & (6 \times 1^2) & + (11 \times 1) - 6 = 0 \\ (1 \times 1 \times 1) & - & (6 \times 1 \times 1) & + (11 \times 1) - 6 = 0 \\ 1 & - & 6 & + 11 - 6 = 0 \\ & & 0 & = 0 \end{array}$$

Practice Problems B

How many solutions can you identify for each of the following equations?

- | | |
|-----------------------|---------------------------------|
| 1. $4 + x = 10$ | 4. $3 - 4x + x^2 = 0$ |
| 2. $x - 3 = 6$ | 5. $x^3 - 11x^2 + 34x - 24 = 0$ |
| 3. $x^2 - 5x + 6 = 0$ | |

Listed below are some possible solutions to the equations in Practice Problems B. Substitute each of the possible answers to see which ones produce correct solutions.

- | | |
|---------------|------------------|
| 1. 4, 6, 8 | 4. 1, 5, 3, 7 |
| 2. 9, 7, 5 | 5. 1, 2, 3, 4, 6 |
| 3. 5, 4, 3, 2 | |

A good gift may offer alternatives which we must consider if we want to receive the fullness of the gift.

3 A true solution requires a diligent search that is consistent with mathematical principles.

As equations become more and more complex, it becomes harder and harder to find the correct solutions. In fact, some equations look so formidable that they appear to be unsolvable. Yet, a mathematician who believes that the solution does exist will diligently apply the proper principles, believing that in time, after perhaps hundreds of steps, a solution will be found.

A “simple” problem

$$\begin{aligned} \int \sec x \, dx &= \int \frac{dx}{\cos x} \\ \int \frac{2 \, dz}{1+z^2} \cdot \frac{1+z^2}{1-z^2} &= \int \frac{2 \, dz}{1-z^2} \\ \int \frac{2 \, dz}{1-z^2} &= \int \frac{dz}{1-z} + \int \frac{dz}{1+z} = -\ln |1-z| + \ln |1+z| + C \\ &= \ln \left| \frac{1+z}{1-z} \right| + C \\ &= \ln \left| \frac{1 + \tan(x/2)}{1 - \tan(x/2)} \right| + C \\ &= \ln \left| \frac{\tan(\pi/4) + \tan(x/2)}{1 - \tan(\pi/4) \tan(x/2)} \right| + C \\ &= \ln \left| \tan \left(\frac{\pi}{4} + \frac{x}{2} \right) \right| + C \\ \int \sec x \, dx &= \ln \left| \tan \left(\frac{\pi}{4} + \frac{x}{2} \right) \right| + C \end{aligned}$$

Advanced math courses teach the principles which enable people to solve complex equations and build confidence that solutions do, in fact, exist for even the most difficult problems. Failure to apply the proper principles leads to errors which produce incorrect answers and frustration.

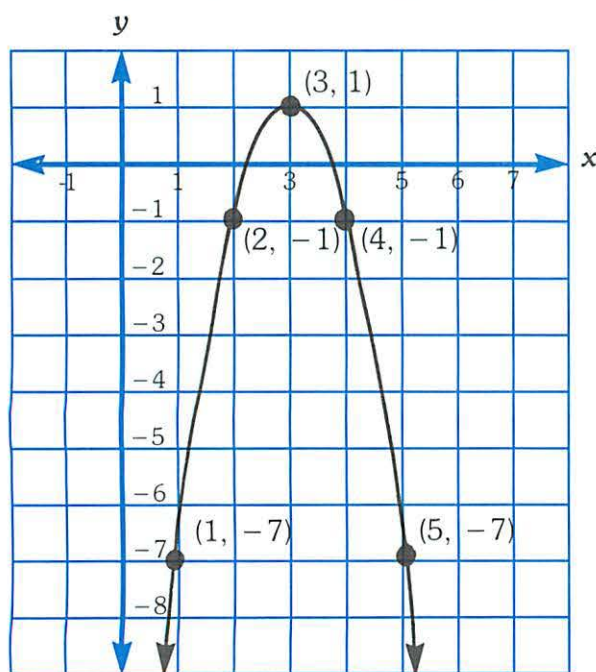
Consider the problem of a deacon board chairman who desired to maximize a gift which was given to his church for a new church building. The algebraic equation he used to calculate the size of the new building took the form of a quadratic equation. A quadratic equation is defined as an equation of the second degree having the form $ax^2 + bx + c = 0$.

Someone not understanding the principles of how to solve a quadratic equation might give up without ever trying. However, knowing the proper principles gave the chairman confidence to pursue a solution.

For example, he knew that the solution produced when a quadratic equation is graphed forms what is called a *parabola* (puh-RAA-buh-luh). He also knew that a mathematical step called *completing the square* should allow him to determine the exact dimensions of the parabola. Those who do not understand the principle of completing the square might think he was foolish. They may not be able to see how applying the principle will move him any closer to a solution.

In many instances simple belief that a solution exists is a requirement for solving a problem.

Graph for $y = -2(x - 3)^2 + 1$



The algebraic expression $-2(x - 3)^2 + 1$ has a highest point (vertex) at 1 when x equals 3, as seen on a graph.

In other instances, algebraic equations merely need to be simplified before a solution becomes apparent. Consider, for example, the equation:

$$3x^2y^3 - 3x^2y + x - 6 - 3(x^2y^3 - x^2y) = 0$$

The problem looks very complex; however, when the proper principles are applied in the proper order, the answer becomes obvious.

The first step is to multiply $3(x^2y^3 - x^2y)$ so the parentheses can be removed.

$$3x^2y^3 - 3x^2y + x - 6 - 3x^2y^3 + 3x^2y = 0$$

[removing the ()]

The next step is to combine like terms. Notice that x^2y^3 appears twice in the equation. In fact, these terms actually cancel each other out.

$$\cancel{3x^2y^3} - 3x^2y + x - 6 - \cancel{3x^2y^3} + 3x^2y = 0$$

That leaves only:

$$- 3x^2y + x - 6 + 3x^2y = 0$$

Notice that the term x^2y also appears twice, and these terms also cancel each other out.

That leaves only:

$$x - 6 = 0$$

Finally, the last step is to balance both sides of the equation. By adding six to both sides, we get:

$$x - 6 + 6 = 0 + 6$$

$$x = 6$$

Not all of the solutions to difficult mathematical equations are obtained this easily, but if a solution does exist, it can be found by understanding and diligently applying the proper mathematical principles.

Principles of algebra, such as the commutative principle, the associative principle, and the distributive principle, must be applied faithfully if a mathematician hopes to solve an equation.

Practice Problems C

The following problems are ordered from the "easiest" to the "hardest." All of the equations have solutions, although some of them may require application of principles which you may not know. Find as many of the solutions as you can.

- | | |
|--------------------|-------------------------|
| 1. $1 + 3 = x$ | 6. $x + y = 7$ |
| 2. $2 + x = 7$ | $x - y = 1$ |
| 3. $x + 4 = 12$ | 7. $1.9x + 3.2 = 12.7$ |
| 4. $x - 23 = 16$ | 8. $x^2 - 9 = 0$ |
| 5. $3(x - 6) = 24$ | 9. $x^2 - 6x + 8 = 0$ |
| | 10. $5x^2 + 3x - 2 = 0$ |

A good gift must be consistent with God's design and sought after diligently.

4 A true solution must not be limited by our own understanding.



When the nation of Israel was trapped between the Red Sea and Pharaoh, they had a need. As the sea parted, they received the gift and walked across, even though they did not understand it.

Normally mathematicians work with “real” numbers. The term **real** is a mathematical term used to describe a particular set of numbers. The name **real** has little to do with the reality or existence of a particular number. It merely names a set of numbers. In fact, the set of real numbers is made up of many other numbers, such as **natural** numbers, **whole** numbers, **integers**, **rational** numbers, and **irrational** numbers.

NOTE: Research the mathematical definitions of the above terms.

However, mathematicians also work with other numbers called **imaginary** and **complex** numbers. These terms are once again merely names used to describe a set of numbers. The name does not imply that the numbers are either pretend or complicated. In fact, they are very useful.

Surprisingly, many solutions to algebraic equations fall into the set of imaginary and complex numbers. This does not mean that a solution does not exist. It means that the solution is outside the realm of everyday experience.

For example, consider this equation:

$$x^2 + 1 = 0$$

Because the equation has a second-degree term, x^2 , there should be two solutions. However, if we balance the equation by subtracting 1 from both sides of the equation, we get:

$$\begin{array}{rcl} x^2 + 1 - 1 & = & 0 - 1 \\ x^2 & = & -1 \end{array}$$

In algebra there is a principle which states that a negative number times a negative number equals a **positive** number. But no number times itself can ever equal a **negative** number!

To resolve this problem, mathematicians have defined a special number called an **imaginary number**. They represent it with the letter **i**. By definition, **i** is the name given to the square root of -1 . Other ways of saying the same thing are:

$$\begin{array}{l} i \times i = -1, \text{ or} \\ i^2 = -1, \text{ or} \end{array}$$

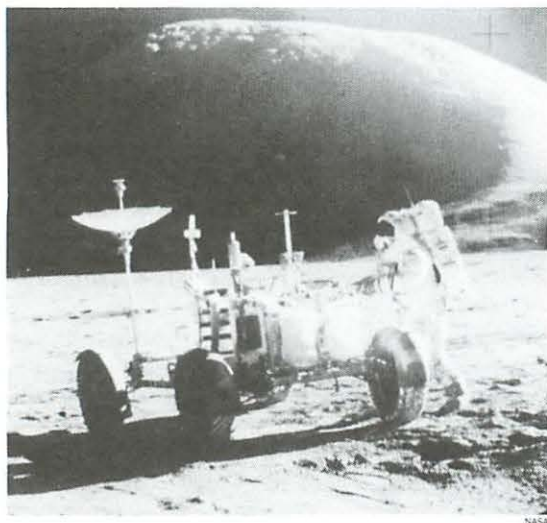
$$i = \sqrt{-1} \quad [\text{read "the square root of negative one"}]$$

Mathematicians use **i** like any other number. For example, if they must solve an equation such as $x^2 = -4$, they treat -4 as the product of 4, a real number, and -1 , an imaginary number. They rewrite the equation as $x^2 = (4)(-1)$. The square root of 4 is 2 and the square root of -1 is **i**, therefore, $x = 2i$. In other words, the square root of -4 is $2i$.

Complex numbers are merely numbers that contain both real and imaginary terms side by side. The expressions $3 + 2i$ or $7 - 5i$ are complex numbers. They can be added, subtracted, multiplied, and divided according to the proper principles.

Imaginary numbers are difficult to understand because they are outside our normal experience. It is easy to count two apples or measure three cups of flour, but what quantity represents i apples or i cups of flour?

This concept seems incomprehensible and yet, the same principles of algebra which apply to real numbers apply just as certainly to all imaginary and complex numbers. The only difference is that “imaginary” solutions are beyond our experience and understanding.



Mathematicians have found that imaginary numbers are especially useful in calculating the position of satellites and space probes. The Apollo missions that landed on the moon, for example, read their coordinates using imaginary numbers.

The fact that a good gift is beyond our understanding and experience in no way diminishes the value of the gift.

Project 1

Study the life of Joseph as an illustration of good gifts. What good gifts were demonstrated in the following events in Joseph’s experience? Discuss how these gifts relate to the goodness of our Heavenly Father in our own lives.

GIFTS

1. Joseph’s coat
2. Joseph’s dream
3. Joseph’s slavery
4. Joseph’s prosperity
5. Joseph’s prison term
6. Joseph’s interpretation
7. Joseph’s reputation
8. Joseph’s brothers

VERSES

- Genesis 37:1–3
 Genesis 37:5–11
 Genesis 37:18–28
 Genesis 39:1–5
 Genesis 39:21–23
 Genesis 40:12–23
 Genesis 41:39–52
 Genesis 45:1–11



JOSEPH

“But as for you, ye thought evil against me; but God meant it unto good, to bring to pass, as it is this day, to save much people alive” (Genesis 50:20).

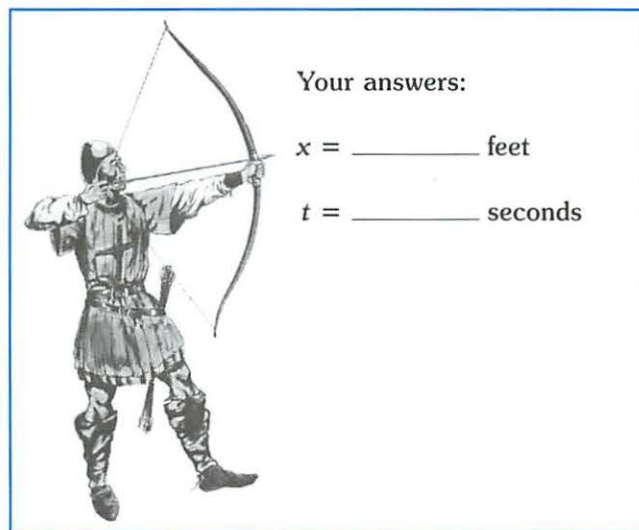
Project 2

An archer, determining to shoot an arrow as far as possible, discovered that aiming halfway between horizontal and vertical (45 degrees) produced the longest shot. Find out how far the archer could shoot if the following equation described the flight of the arrow at that angle.

$$x = 141t$$

$$0 = 192t - 16t^2$$

In these two equations x is the distance (in feet) the arrow flies, and t is the time (in seconds) it remains aloft. To find a solution, a mathematician must find the maximum value of t and substitute its value in the first equation to find x .



Date completed _____ Evaluation _____



LAW RESOURCE

HOW DOES A PETITION TO A COURT OF LAW ILLUSTRATE THREE LEVELS OF PERSISTENT SUPPLICATION?



This federal judge is hearing an immigration case. What factors will influence him either to grant or deny the petition?

"Not again," thought the judge as he entered his courtroom one morning to begin hearing cases. "This woman just keeps coming back."

The woman was a widow who claimed that a local businessman had cheated her out of some property shortly after her husband's death. The amount of money involved was quite small, but because of her limited income it was extremely important to her.

She had presented her petition to the court several times already, but each time it had been dismissed on some legal technicality. The judge was not concerned that justice had not been done, nor was he intimidated by the merchant's threats. He simply did not care about the widow and was very irritated at having to deal with her case again.

The widow came forward and made her plea quietly and respectfully, reminding the judge that she was asking not for damages or interest, only that her property be given back. As he listened impatiently, he decided that he wanted this matter settled once and for all.

- What do you think was the judge's ruling that day, and why?
 - ☐ A. He granted her petition because he felt a moral obligation to be fair.
 - ☐ B. He dismissed the case because there were no grounds for the suit.
 - ☒ C. He ruled in her favor so she would stop bothering him.
 - ☐ D. He refused her petition because he did not want to upset the businessman.
- What truth was Jesus trying to teach His disciples when He told them a similar story?
 - ☐ A. You cannot have justice without fairness.
 - ☒ B. Pray always and do not give up.
 - ☐ C. God will always protect widows who pray.
 - ☐ D. Repeating a request in prayer is improper praying.
- Read Luke 18:1–8 to see if you chose the best answer to each question.

As this parable indicates, there are many parallels between what goes on in a courtroom and what happens when we pray. Of the four types of prayer, supplication is the one which is most like presenting a petition to a court of law. (See I Timothy 2:1, and review *Wisdom Booklet* 31, pages 1507–1510.)

PETITION: A written application or request addressed to a court or other official body, asking for exercise of authority to correct some wrong or to grant permission to do something which requires judicial sanction.

SUPPLICATION: An urgent and earnest plea for God's help in personal needs. The term comes from the Latin word *supplicare*, which is made up of *sub*, meaning "under," and *plicare*, meaning "to fold or kneel down."

Supplication and petitioning the court both take place on three levels:

On the first level primarily the **emotions** and desires are operating. The person in need urgently wants God or the judge to respond to his request.



The second level involves the **mind**. The petitioner gives mental assent to the fact that God or the government is capable of meeting his need. Finally, the volitional level is reached when the supplicant chooses with his **will** to believe that the problem is being solved and to act accordingly.

A petition should be pursued on all three levels in order to be most effective.

The proper preparation and presentation of a petition is generally beyond what the average citizen can manage successfully, with the exception of simple cases like those tried in small claims courts. In most situations, then, it is wise for the plaintiff to retain an attorney.



This judge is holding small claims court in his chambers. Small claims court sessions are conducted more informally because they involve disputes over small amounts of money—usually \$1,000 or less. Often the litigants are not allowed to have attorneys to represent them.

In our legal system, the opportunity of being represented in court by someone trained in law is a fundamental constitutional right. Although it is possible for a person to present his case *pro se* (literally “for self,” meaning “without a lawyer”), such petitions are often unsuccessful because of inadequate preparation and/or faulty knowledge.

Asking begins at the level of an emotional response.

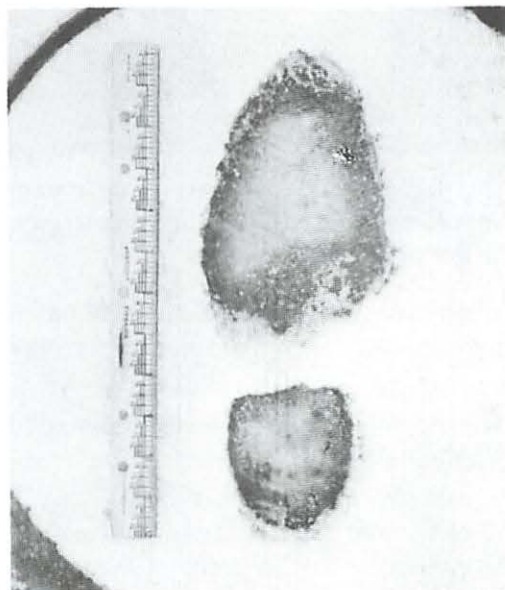
When someone has been injured or wronged, the initial reaction is naturally an emotional one. A person will often threaten to sue someone simply because of anger or hurt feelings. In fact, without emotions to spur people on, most lawsuits would never be filed, but destructive and selfish emotions cannot serve as the basis for a successful petition.

To ask effectively, one must learn to want what the judge wants.

1 A legal petition should have a clear-cut basis both in the law and in the facts.

The first thing a person should do before initiating a lawsuit is to discover whether or not there is a firm legal foundation for the action. This must be determined by examining both the factual aspects of the situation and what the law says about it.

The factual elements are called **evidence** and include either documents (such as contracts, letters, guarantees, business records, or statements by witnesses) or physical objects (such as a defective machine part, a photograph taken at the scene of an accident, or a weapon). A potential plaintiff needs to find out what evidence exists and evaluate how well it supports his side of the controversy.



Evidence in criminal cases tends to be of the physical type, such as this footprint. In civil cases it is more often documents and correspondence.

The petition must present these facts, but only the ones that are relevant to the case because of their legal significance. One commentator says: “. . . A grasp of the substantive law applicable to the particular fact situation is essentially alike in the acceptance of a suit, the drafting of the petition in it, and its successful prosecution. From a practical standpoint, a full acquaintance with the facts themselves is no more important.”

The legal significance of the facts depends on two things: **statutes** (laws which have been enacted by legislative bodies to govern such situations) and **precedents** (decisions which have been handed down by the courts in similar cases). Again, the person contemplating a suit should carefully assess the validity of his case in the eyes of the law.

Failure to evaluate accurately the soundness of the legal basis of a claim may result not only in shame but also in great expense. A suit found to be frivolous (having no legal merit) will be dismissed without a trial. The embarrassed plaintiff may well be liable for more than his own legal expenses—many states have laws that allow a judge to order such a plaintiff to pay the defendant's attorney fees and court costs.

Another possible consequence is that the opposition may file a countersuit or counterclaim. This happens when a defendant, who has (or feels that he has) a more valid claim than the plaintiff, is not content to drop the matter or settle out of court. The original suit galvanizes him into taking action he would otherwise not have taken.

2 *A petition may not be effective if it grows out of a desire for vengeance rather than justice.*

Strictly speaking, the court is not supposed to be concerned with the motives of a petitioner. He may be bringing suit with a proud, greedy, or vengeful motive, but as long as his case has a basis in law and in fact, the judge will hear it.



The ideal impartiality for which a judge should strive is symbolized by the blindfold on the statue of Justice.

However, in the course of a trial a plaintiff's motives will usually become apparent. Judges, even

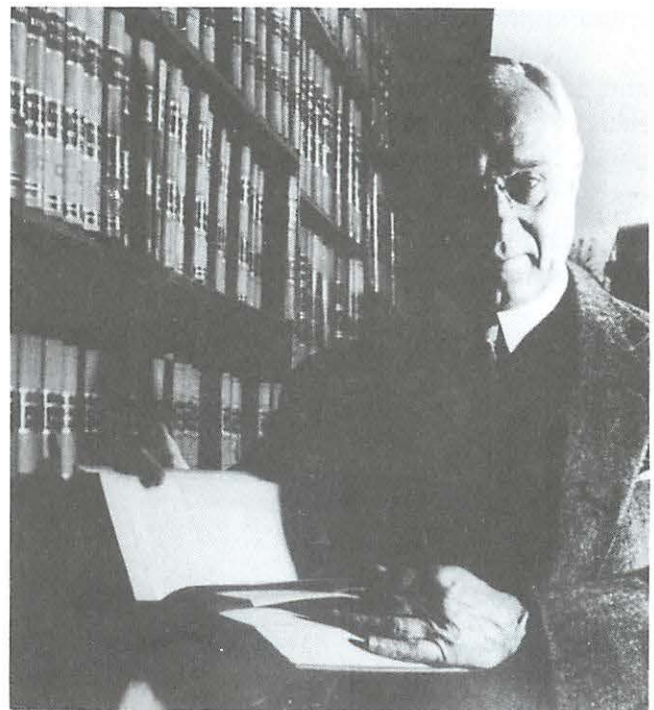
though they strive to be impartial, are human and prone to be less than perfectly objective. The motivations they perceive in a petitioner undoubtedly play a part in their rulings.

If a petitioner's wrong motives begin to influence his actions to a significant degree, the court can deal with that person by using its **power of contempt**. Every court has the inherent authority to punish someone for **contempt of court** (any act that is intended to mock, delay, or otherwise keep the court from administering justice).

Contempt of court is of two types. **Direct contempts** are things which are done in the presence of the judge to interrupt the orderly flow of proceedings in the courtroom. Violent behavior or abusive language would fall into this category.

Constructive contempts are actions taking place elsewhere which have the effect of obstructing or defeating the court's administration of justice. Usually this type of contempt is committed when a person refuses to obey a decree or injunction issued by the court.

In cases of contempt, the judge may impose a fine or imprisonment.



Supreme Court Justice Felix Frankfurter has said that a judge must not be "...swayed by sympathy nor warped by prejudice nor moved by any kind of influence save alone the overwhelming passion to do that which is just."

Ideally a judge's goal is not to see that the selfish desires of any one person are satisfied but that justice is done in the application of the law to a particular situation.

The most effective petition will be one which appeals to the judge's sense of justice and has a firm basis in the law.

Seeking takes place when the intellect is activated along with the emotions.

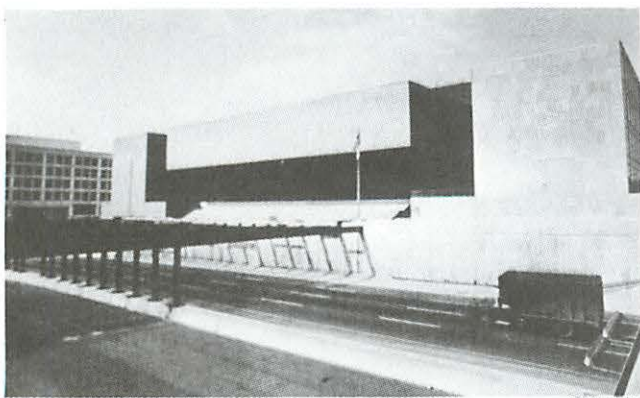
An effective petition requires not only a strong desire for justice as its basis but also diligent mental effort in its formulation. Filing a lawsuit involves careful attention to details in the drafting and processing of legal documents containing the **pleadings** (the formal allegations by the plaintiff of his claim).

To seek properly, one must try to think as the judge thinks.

3 A petition should be addressed to the court which has jurisdiction.

Because a petition is a request for the exercise of power, it must be addressed to the proper **tribunal** (the court of justice which has jurisdiction over the matter in question). Some courts have authority over only a specific geographical area, such as a county or state. (See *Wisdom Booklet 7*, pages 255–256, to review the jurisdiction of federal and state courts.)

The jurisdiction of other courts depends on the types of cases they may consider.



This building in Washington, D. C. houses the offices of the U. S. Tax Court. The tax court's jurisdiction is based on the type of cases it may hear rather than geographical boundaries. Thus, the court holds trials in various locations around the country.

The U. S. Court of Military Appeals, for example, deals with a specialized category of cases. Appellate courts cannot hear original suits—only appeals (cases already decided by lower courts). If the court petitioned does not have the authority to decide the issue presented, the judge will reject the petition.

4 A petition may not be accepted if it fails to follow the form required by the court.

In the past under the common law, pleadings had to be constructed with extreme care because the slightest discrepancy between the allegations made and the evidence submitted would cause the whole petition to be discarded. However, under the Federal Rules of Civil Procedure, which are also followed by most state courts, pleadings can now be amended rather freely in order to avoid this problem (called **variance**).

Even so, a lawyer will often consult a book of forms in drawing up a petition. These legal form books give the standard format and wording for various types of pleadings. However, an effective petition is seldom an exact replica of one of these examples because every case involves a unique set of facts and relationships.

Clarity is much more important than adherence to a model. A petition should be stated in the most understandable terms possible. Some attorneys have a tendency to rely heavily on legal jargon, specialized vocabulary and phraseology that is often unintelligible to laymen.

Such language does nothing to enhance the effectiveness of a petition and should be avoided. Unfamiliar terminology and unnecessary complexity will only be a hindrance, especially when the petition will be read to a jury.

Similarly, a petition should be specific. The part of the pleading in which the plaintiff seeks payment of damages or redress of grievances by some other means is called the **prayer for relief**. It is essential to the petition and is usually presented in two parts.

The **special prayer** makes a specific request of the court, often stated in terms of the amount of money the defendant should be required to pay the plaintiff. This is followed by a **general prayer** in which the court is asked to grant any other relief to which the plaintiff may be entitled.

Finally, by law a petition must be concise. The rules used by the federal courts demand “a short and plain statement of the claim.” The facts must be fully stated, but it is just as essential to exclude irrelevant and unnecessary material. “Some pleaders seem to imagine that by useless repetition and long, meaningless statements they give great strength and legal form to their productions. Just the reverse is true, and every pleading filed should be a model of concise, terse, and accurate expression.”

5 *A petition should be filed during a specified time period.*

In going to court a person should be aware of the importance of proper timing. The petitioner must enter the courtroom at the time designated by the judge. The schedules and procedures of the court must be followed.

Also, a suit must be brought before the passing of time renders the petition invalid under the **statute of limitations**, which is the legislative act that sets the time period within which a plaintiff may bring a lawsuit. No matter how good a person’s case is, if he waits too long, he will lose his right to seek redress from the court.

The actual length of time varies from state to state and according to the reason for the suit. In a negligence case, for example, the plaintiff may have as long as seven years. Malpractice suits typically must be initiated within a much shorter period of time, whereas parties in a contract dispute may have from six to twelve years to file.



If the innocent party involved in this accident wants to recover damages, he must bring his claims to the proper parties before the statute of limitations expires.

Knocking must involve the will as well as the mind and emotions.

Neither the emotional impetus which initiates a legal action nor the mental exertion that formalizes it is likely to reach the goal unless accompanied by the strength of will it takes to see the case through the trial. The petition must actually be presented to the judge with the right attitude and appropriate expectations.

To knock successfully on the door of justice, the petitioner must choose to follow the ways of the court rather than respond according to his own emotions or thoughts.

6 *A petition should be presented respectfully and confidently.*

Once a suit finally comes to trial, the attitude of the plaintiff (or his attorney) toward the judge can influence the verdict. Simply knowing and observing courtroom etiquette (addressing the judge as “Your Honor,” for example) communicates respect.

A balance is necessary, however. The petitioner should not be afraid of the judge or behave in an obsequious manner in the courtroom.

Some judges are more scrupulous than others in enforcing the rules of decorum. It is a good idea for the lawyer and his client to be familiar beforehand with how a particular judge prefers to run his courtroom.

One federal judge had a rigid rule that anyone addressing the court must rise. Once a young lawyer from out of town who was defending a case in that court had not been warned about the judge’s rule. The beginning of the trial went something like this:

Lawyer (seated at the attorneys’ table): Your Honor, before I make my opening statement I wonder if we could. . . .

Judge (leaning forward): I’m having a little trouble hearing you, counsel.

Lawyer (a little louder): Your Honor, before we get into. . . .



Judge: I still can't hear you.

Lawyer (raising his voice): Your Honor! I said that I would like to. . . .

Judge (more firmly): You're still not being heard, counsel!

Lawyer (shouting): *Your Honor!* . . .

During this exchange the opposing attorney, who was sitting just across the aisle, kept whispering to the young man to stand up, but he ignored this advice. Finally, with a very red face he got to his feet, and the judge sat back in his chair and smiled, satisfied that he had taught the young attorney an unforgettable lesson in courtroom decorum.

Another powerful example of how attitude can affect the outcome of a petition in court is shown in the lives of one couple who had begun home educating their children. Charged with criminal violation of the compulsory school attendance laws of their state, they were scheduled to appear in the court of a judge who had a reputation for being very strict.

This judge, who held the opinion that all home-schoolers were rebellious, selfish, and disrespectful, had already made up her mind from what she knew about the case that the couple was guilty of breaking the law and should be punished.

On the day of the trial, the courtroom was packed. The judge arrived in a defensive mood, ready, in her words, to "put these people in their place." Yet, as the opening arguments were presented, she sensed a sincere respect for authority on the part of the couple and their friends in the audience. Suddenly she had a whole new interest in the case.

As the trial continued, the judge was deeply impressed by the couple's conviction and the quality of the instruction they were giving their children. In the end she concluded that any law which prohibited this type of education must be unconstitutional. (The state legislature did, in fact, later change the law.)

Not only did the judge rule in favor of the parents in that case, but on their recommendation she later attended a Seminar in Basic Youth Conflicts with her husband. Within a year they had enrolled their own family in the ATIA program.

The judge wrote, "I just give all the glory to God for all these sequences of events which have brought about so many changes in my life and the lives of my family. The attitudes and appeals which

were before me that day a little more than a year ago were a powerful testimony to me and continue even now to be."



How might the outcome have been different if that couple had not purposed to have a proper attitude toward authority when they came before the judge?

7 A petition may not be granted unless the petitioner is persistent.

A great deal more is involved in any lawsuit than just filing a few documents, appearing in court to argue the case, and receiving the verdict from the judge or jury. In fact, there is a virtually endless variety of strategies the opponent can use to delay and complicate the case.

Before a petition comes up for a hearing, the parties normally engage in **discovery**. This is the process of obtaining facts and information from the other side in order to prepare for trial. One method of doing this is to take **depositions** (oral testimonies of witnesses, given under oath and recorded by a court reporter). The transcript of a deposition can be used as evidence in the trial.

Another method is **interrogatories** (a series of written questions about the case which the opponent or a witness must answer under oath). Answering interrogatories and giving depositions can be extremely time-consuming and costly. Lawyers have been known to use these methods of gathering evidence as maneuvers to intimidate or frustrate the other party in hopes that he will drop the suit.

A variety of pretrial motions can also be used. The plaintiff must be careful in how he responds to

these or the case may never make it to trial. An example of this would be a motion for **summary judgment**. This is a request to the judge to go ahead and make a decision without a trial because there are no factual disputes which need to be settled.

In similar fashion a case is not closed when the judge pronounces a verdict at the end of the trial. The losing side can still initiate several different kinds of motions which can keep a petitioner from receiving the relief he sought. A **remittur**, for example, is a motion which asks the judge to reduce the amount of damages awarded to a victim. A defendant who has been found liable may also bring a motion for reversal of the verdict or for a new trial.

The plaintiff must respond to these motions and be prepared to answer the arguments. There is also the possibility that his opponent will appeal to a higher court. All of this is quite expensive, time-consuming, and frustrating, but without perseverance even a very good case may be lost.



Just as a marathon runner will never reach the finish line without perseverance, a petitioner must persist in his pursuit of justice until the case is officially closed. Paul said: "Know ye not that they which run in a race run all, but one receiveth the prize? So run, that ye may obtain. And every man that striveth for the mastery is temperate in all things. Now they do it to obtain a corruptible crown; but we an incorruptible. I therefore so run, not as uncertainly . . ." (I Corinthians 9:24-26).

PROJECT 1

Discover the three levels of supplication in the Psalms. Often the psalmist's prayer progresses from asking (emotions) to seeking (thoughts) and finally to knocking (commitments).

PROJECT 2

Many of the Proverbs give wisdom concerning legal disputes and going to court. Find at least one verse in Proverbs to explain each of the seven characteristics of an effective petition.

PROJECT 3

Review the Resource, and find the Scripture verses listed below, using them to complete the chart on the next page.

First, fill in the left-hand column by placing each of the main points about petitioning the court in the appropriate box.

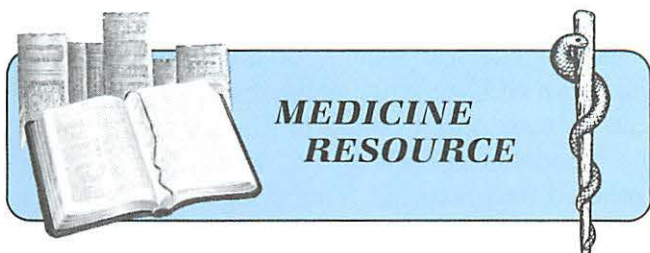
Next, in studying the verses, discover principles of supplication which are parallel to the seven aspects of an effective petition. Put your insights into concise phrases, and write them in the corresponding boxes in the right-hand column.

Be sure to note the Scripture references for each insight on the chart. (**Hint:** There are two references for each point, but you may find others of your own.)

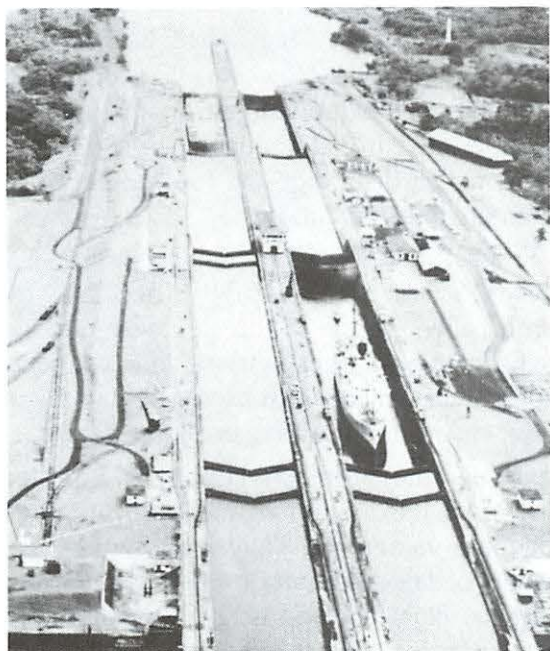
- | | |
|---------------------|-------------------|
| • Psalm 63:1 | • John 15:7 |
| • Psalm 86:7 | • Romans 8:32 |
| • Proverbs 28:9 | • Ephesians 6:18 |
| • Ecclesiastes 5:2 | • Philippians 4:6 |
| • Isaiah 50:9 | • James 1:6-7 |
| • Jeremiah 29:11-13 | • James 4:1-4 |
| • Matthew 6:7 | • I John 3:22 |

Date completed _____ Evaluation _____

	PETITION TO THE COURT	SUPPLICATION TO THE LORD	SCRIPTURE
	A petitioner needs an attorney to represent him.	A Christian needs the Lord Jesus Christ to intercede for him.	Romans 8:26-27 John 14:13
THE EMOTIONAL LEVEL	Ask on a sound basis.		
	A legal petition should have a clear-cut basis both in the law and in the facts.	based on scripture	Proverbs 28:9 John 15:7
	Ask with an acceptable motive.		James 4:1-4
	A petition may not be effective if it grows out of a desire for vengeance rather than justice.	we don't get what we want, cause we misuse them.	1 John 3:22
THE INTELLECTUAL LEVEL	Seek the right source of help.		Is. 50:9
	A petition should be addressed to the court which has jurisdiction.	Jesus will help	Romans 8:32
	Seek in a suitable manner.		Ecc 5:2
	A petition may not be accepted if it is not required by the court.	don't talk too much - utter hastily but we can petition	Matthew 6:7
	Seek it at the appropriate time.		Psalms 65:1
	A petition should be filed during a specified time period.	in a time of need - day of trouble	Psalms 66:7
THE VOLITIONAL LEVEL	Knock with the proper attitude.		Phil. 4:6
	A petition should be presented respectfully and confidently.	pray without anxiety and have thanksgiving don't doubt have good attitude	James 1:6-7
	Knock with the right expectations.		Jeremiah 29:11-13
	A petition may not be granted unless the petitioner is persistent.	we know that we can trust him we wait for his answer	Eph. 6:18



HOW DOES THE GALLBLADDER ILLUSTRATE GOD'S DESIGN FOR CHANNELS OF GOOD GIFTS?



The Panama Canal Company

The locks of a canal illustrate the function of the gallbladder. Both the gallbladder and the canal locks expand and contract in order to facilitate the passage of vital resources.

The gallbladder is simply a pouch. Yet, it is a perfect example of an empty vessel through which good gifts flow. The gallbladder does not produce the good gifts, nor does it direct their flow. It merely stretches and contracts to accommodate and pass on whatever it receives.

What the gallbladder receives is a fluid called *bile*. Bile is a yellow-green liquid produced by the liver and collected by the gallbladder. However, bile does not remain in the gallbladder for very long. In fact, if its passage becomes blocked, severe and painful consequences result.

When physicians remove a gallbladder, they remove an important member of the body. They must be careful to reconnect the ducts which carry bile from the liver to the small intestine so the bile can continue to flow even in the absence of its storage vessel.

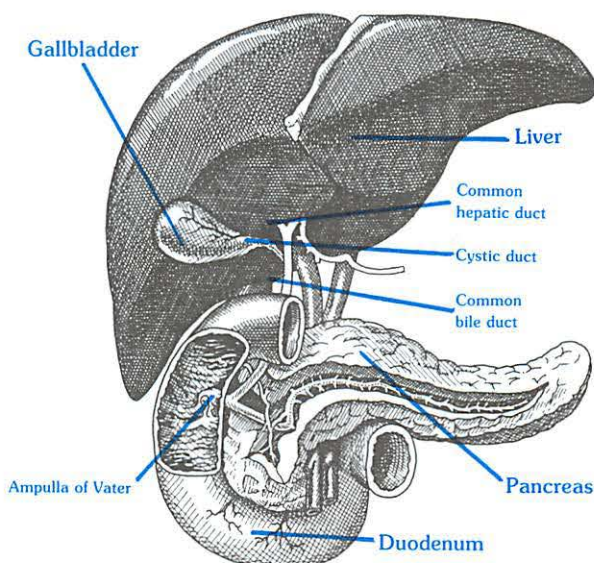
The term *gall* refers to natural poisons such as hemlock and snake venom as well as bile. Because of the bitter taste of these substances, gall is usually associated with travail and stress. In many instances the association is more than merely symbolic.

For example, stress can actually produce a bitter taste as a result of physiological changes within the body which alter the normal acidity (pH 6.35–6.85) of the mouth. Metallic ions secreted by the tongue during periods of great stress change the pH of a person's mouth to one that is slightly alkaline (greater than 7.0). This change creates the characteristic bitter taste that often accompanies stress.

The most bitter-tasting substance in the human body is bile. While bile is loathsome to taste or to see, it fulfills vital roles within our bodies. Without it, we could not survive.

1 The gallbladder conserves and concentrates what it receives to serve the body more effectively.

The gallbladder is a small, green, pear-shaped pouch located just beneath the right lobe of the liver. Bile flows continuously from the liver at the rate of about 25–30 ml per hour. When bile is not needed for digestion, it backs up in the common bile duct, which normally empties into the duodenum. As the bile backs up, it fills the gallbladder, stretching it like a water balloon under pressure.



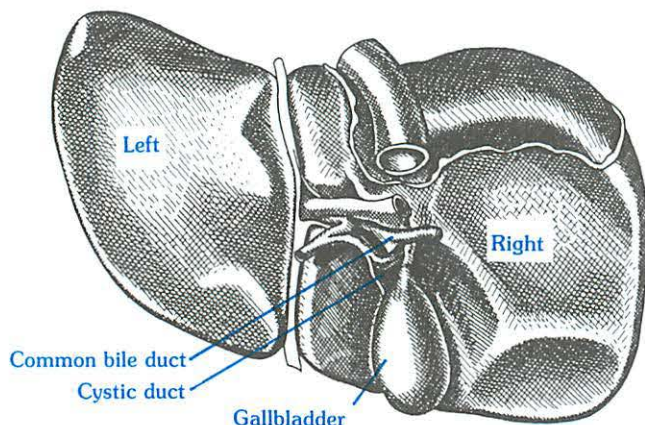
At its largest, the gallbladder is only about the size of a small apple. Nestled under the liver, it plays an important role in the digestion of fats and in the elimination of waste products.

The *common hepatic duct* collects and transports bile from the liver. It is joined by the *cystic duct* of the gallbladder to form the *common bile duct*. The common bile duct passes down behind the duodenum, where it connects to the main pancreatic duct, which carries digestive juices from the pancreas. Eventually the common bile duct empties into the duodenum at a point called the *ampulla of Vater* (am-PYOO-luh, VAY-ter).

In one respect, the gallbladder is only a vessel through which essential elements flow. However, the gallbladder also concentrates bile by absorbing water, sodium, chloride, and a number of other electrolytes into its own cell walls. This causes the essential ingredients of bile such as bile salts, cholesterol, and bilirubin to accumulate in the gallbladder. In fact, the gallbladder is so efficient at concentrating bile that it can reduce its contents to less than a tenth of its original volume.

By concentrating bile, the gallbladder is capable of storing a twelve-hour supply. During digestion, a smooth (involuntary) muscle located in the wall of the gallbladder squeezes the concentrated bile into the common bile duct so it can fulfill its appointed purposes.

A VIEW OF THE UNDERSIDE OF THE LIVER



Because the liver manufactures up to 700 ml of bile a day, and the average gallbladder holds only about 40–70 ml, under normal circumstances the gallbladder would fill up too quickly to be of much use. However, by concentrating the bile into a thick, sticky substance, the average gallbladder can store more than enough bile for a large meal. In fact, it can store almost a full day's output from the liver.

In addition to concentrating bile, the gallbladder is part of the *enterohepatic circulation*—a system that recovers and “recycles” used bile. Bile is not lost to the body when it flows into the small

intestine. The last section of the small intestine, the *ileum* (ILL-ee-um), reabsorbs most of the bile salts as they pass through it. These are carried in the bloodstream back to the liver, where they are gathered and recycled. This system is so efficient that the same bile often passes through the gallbladder two or more times during the digestion of a single meal.

2 The gallbladder neutralizes caustic substances to protect the body.

Bile has a pH of between 7.6 and 8.6. This makes it quite bitter. However, its alkaline nature helps to protect the duodenum from the acidic fluids which flow into it from the stomach. Bile does this by neutralizing partially digested food as soon as the food enters the small intestine.

Digestive fluids in the stomach may have a pH as low as 2. This extreme acidity is necessary for an enzyme called *pepsin* to break down and digest proteins. However, pepsin has no effect on fats and carbohydrates—these must be digested in the more alkaline environment of the small intestine.


While the stomach is carefully protected against acids, the duodenum and small intestines are much more vulnerable. They are designed for the digestion of fats and carbohydrates. If the acidity of partially digested food is not neutralized immediately upon leaving the stomach, the person experiences indigestion, and the excess acid begins to erode the lining of the duodenum, causing duodenal ulcers.

BEEMAN'S THE ORIGINAL

Pepsin Chewing Gum.

A Delicious and Lasting Confection.

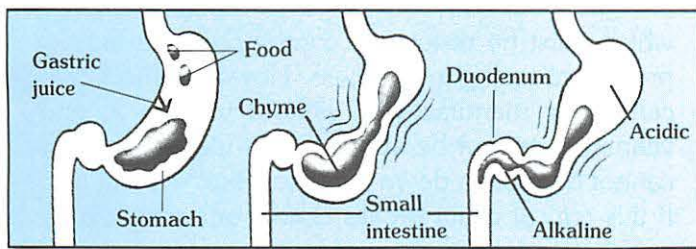
CURES INDIGESTION



and sea-sickness. Put up in 1d. & 2½d. packages. If you cannot obtain it of dealers, send stamps for sample package, adding 1d. extra to cover postage, to

THE BEEMAN CHEMICAL CO.,

The first Beeman's™ chewing gum was an attempt to cure indigestion resulting from too much stomach acid.



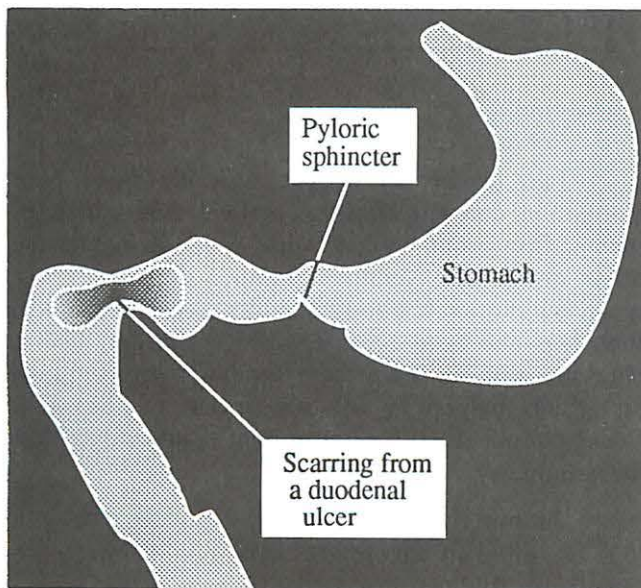
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Partially digested food is called **chyme (KIME)**. Chyme includes proteins, carbohydrates, and fats. Proteins must be digested in an acidic environment, while carbohydrates and fats are best broken down in an alkaline environment.

Duodenal ulcers typically result from either too much acid or too little bile. These ulcers usually appear in the first half-inch of the duodenum. This is the point where the strongly acidic chyme is most likely to have not yet been neutralized.

In chronic cases the outlet of the stomach can become so scarred from continual erosion that it completely obstructs the flow of food from the stomach to the duodenum. This leads to vomiting, malnutrition, and a painfully bloated stomach.

If an ulcer penetrates the wall of the duodenum and the chyme leaks into the abdominal cavity, the patient usually turns deathly pale, has excruciating abdominal pain, and may die in a matter of hours.



The pyloric sphincter normally opens and closes the entrance to the duodenum and small intestine. A duodenal ulcer, however, may create so much scarring that it blocks the flow of chyme into the small intestine.

3 The gallbladder increases the potential energy of the body.

As bile begins to mix with the chyme entering the small intestine, most of the fat from a meal is still unusable. It remains in large globules that are too big to be absorbed through the intestine's lining. Bile helps to break down these complex fat molecules into smaller units of usable energy.

Special ingredients in bile, **bile salts**, work much like household detergents to emulsify fat globules. They actually decrease the surface tension of the fat globules and allow the mechanical agitation of the intestinal tract to break them apart. Bile salts arrange themselves into tiny, hollow bubbles. These bubbles, called **micelles**, draw individual fat molecules into their centers, surround them, and break their chemical bonds.



During the digestion of a meal high in fat (containing, for example, red meat, pastries, ice cream, cheese, or salad dressings), the gallbladder squeezes out all of its bile in less than an hour. Meals with less fat cause the gallbladder to empty much more slowly.

The result of this emulsification is a suspension of fat molecules that are hundreds of times smaller than when they were consumed. They are now small enough to be absorbed through the intestinal walls and into the bloodstream, and then converted into energy.

Once fat molecules have been emulsified by bile and absorbed into the bloodstream, they travel to the liver, where they are converted into even smaller components called **fatty acids** and **glycerol** (GLIH-suh-rawl). Fatty acids and glycerol represent an energy source which provides twice the energy of

the same weight of protein or carbohydrate. That is, one gram of fat yields nine calories, while the same amount of protein or carbohydrate yields only four calories.

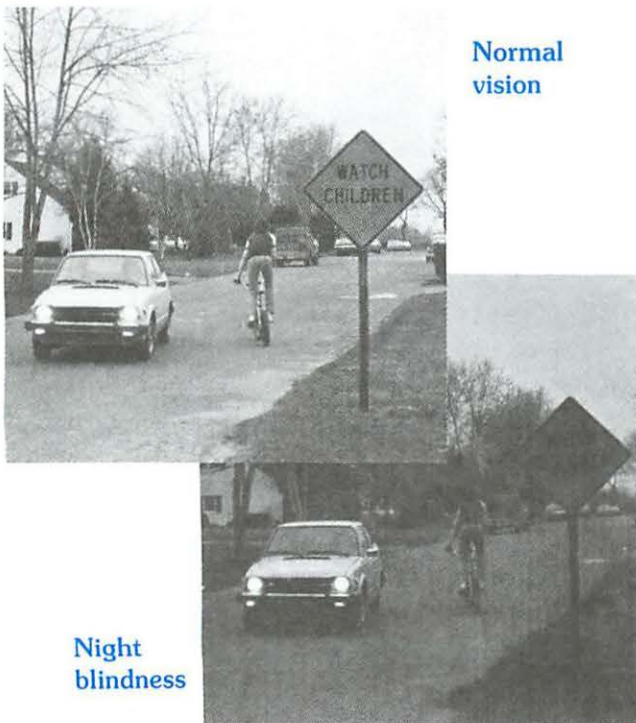
4 The gallbladder increases the growth of the body.

Vitamins such as C, B₂, B₆, B₁₂, and niacin are soluble in water and need no assistance in being absorbed into the bloodstream. However, vitamins A, D, E, and K are not water soluble; they dissolve only in fats.

In the absence of fat, these vitamins pass right through the body without being of benefit at all. That means that low-fat diets are also likely to be vitamin-deficient diets. Even if the vitamins are present, they cannot be absorbed without fat. Because fats cannot be broken down without bile, a lack of bile creates vitamin deficiencies that can seriously inhibit proper body functions.

For example, vitamin A is necessary for the health and vigor of the skin. A deficiency leads to dry, inelastic skin and brittle hair. Infections of the ears, nose, and throat may also increase dramatically, and a person may have considerable difficulty maintaining an adequate body weight. The lack of vitamin A also causes an inability of the eyes to adapt to low-light situations. We refer to this condition as *night blindness*.

VITAMIN A PROMOTES GOOD EYESIGHT.

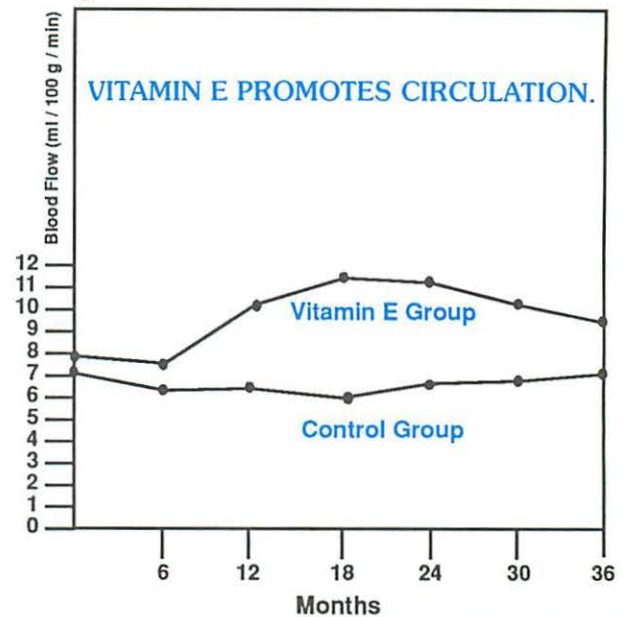


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We depend on special cells called *rods* to see at night. Rods contain a chemical called *rhodopsin*, which must be re-formed continuously during the process of seeing in darkness. However, rhodopsin cannot be manufactured without vitamin A, and vitamin A cannot be absorbed without fat, and fat cannot be broken down for absorption without bile. If this critical chain breaks down, our eyes will be unable to adapt to changes in light.

A lack of vitamin D restricts the absorption and use of calcium. This deficiency leads to rickets in children and osteomalacia in adults—especially in older women.

A lack of vitamin E results in anemia and may contribute to sterility. Vitamin E also helps to maintain the integrity of cell membranes, promotes the healing of injured tissues, and helps to prevent scarring.



Two groups of people suffering from poor circulation and leg cramps received differing treatments. One group took vitamin E supplements; the other group (the “control group”) did not. Those receiving vitamin E almost doubled the circulation in their legs and once again enjoyed cramp-free walks. However, without the presence of bile to emulsify the fat which helped in the absorption of the additional vitamin E, their investment would have been for naught.

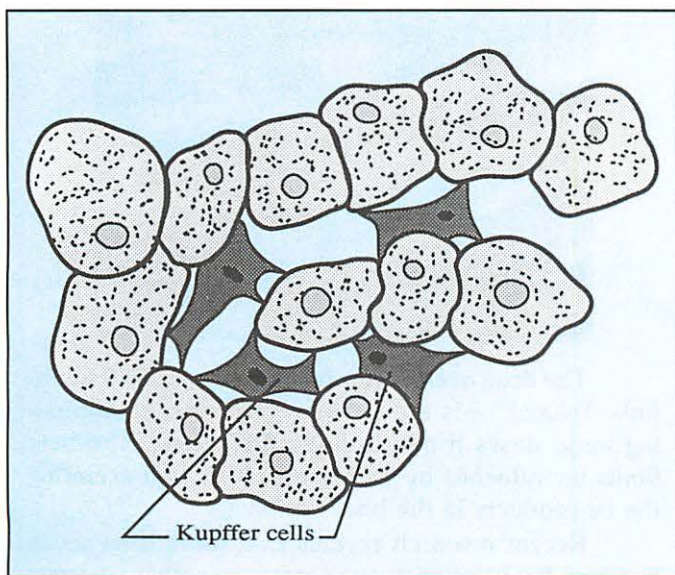
Vitamin K is important in the clotting of blood. It is essential in the manufacture of *prothrombin* (pro-THROM-bin) and several other factors which prevent uncontrolled bleeding. Once again, the chain of events leading to the absorption and use of vitamin K requires the presence of bile, which in turn is greatly enhanced by the presence and proper functioning of the gallbladder.

5 The gallbladder helps to remove defilement from the body.

In addition to aiding in digestion, bile from the gallbladder also plays an important excretory role. This is especially important for the removal of *bilirubin* (BILL-ee-roo-bin). Bilirubin is a reddish-yellow pigment which comes from the breakdown of worn-out red blood cells. Red blood cells last only about four months, and then they simply wear out. Their “threadbare” cell membranes rupture, spilling hemoglobin into the bloodstream.

Normally, hemoglobin is a vital messenger, carrying life-giving oxygen to every cell in the body. However, when hemoglobin spills out of its appointed quarters, it can become a dangerous enemy, so protective scavenger cells in the liver and spleen called *reticuloendothelial* (reh-TIH-kyoo-low-endoe-THEE-lee-uhl) cells “vacuum up” the hemoglobin and begin to recycle it.

These cells separate the hemoglobin into molecules of *heme* and *globin*. The iron molecule is removed from the heme and reused, and the remainder of the heme is converted into bilirubin, which is released back into the bloodstream. Within a few hours the liver captures the free-floating bilirubin, processes it, and sends it to the gallbladder in the bile. The remaining globin (protein portion) is also reused.



Kupffer cells are reticuloendothelial cells which line the liver. These cells capture bilirubin, conjugate it (combine it with another substance), and prepare it for excretion by way of the bile.

Bilirubin gives bile its color. When bilirubin moves along the digestive tract and reaches the large intestine, bacterial enzymes change it into a sub-

stance called *urobilinogen* (your-oh-bill-INN-oh-jen). Bilirubin's characteristic yellow color becomes so concentrated in the process that it turns brown, giving fecal matter its color.

The normal blood concentration of bilirubin averages about 0.5 mg per 100 ml. However, if anything prevents its removal from the blood, its concentration can rise to as high as 40 mg per 100 ml. Accumulation of bilirubin to this level can cause brain damage—especially in newborn babies.

An increased amount of bilirubin in the blood also turns the skin and eyes yellow. Physicians call this condition *jaundice* (JAWN-diss). The word comes from the French word *jaune* (ZHONE), which means “yellow.”

Jaundice reveals that something is wrong with the body. In some cases it means that red blood cells are dying more rapidly than they should. In other cases it means that the liver is not adequately removing bilirubin from the blood. In still other instances it means that there is an obstruction near the gallbladder that is blocking the flow of bile.



Jaundice occurs in a large percentage of newborn babies. It is usually the result of the large number of red blood cells newborns normally have, and the fact that most newborns' livers are immature at birth and unable to process the additional load. (Before the baby was born, all of his bilirubin crossed the placenta into his mother's circulation, and her liver processed it.)

When bilirubin builds up in an infant's bloodstream, the child turns yellow. Normally this condition corrects itself in a week to ten days as the liver matures and is able to process the extra bilirubin and eliminate it in the bile.

6 The gallbladder helps to limit harmful influences in the body.

The words *endogenous* and *exogenous* come from three Greek roots: *endo* means “within,” *exo* means “outside,” and *gen* means “to produce.” Endogenous drugs are ones that are produced within a person’s body. These include such things as hormones and enzymes.

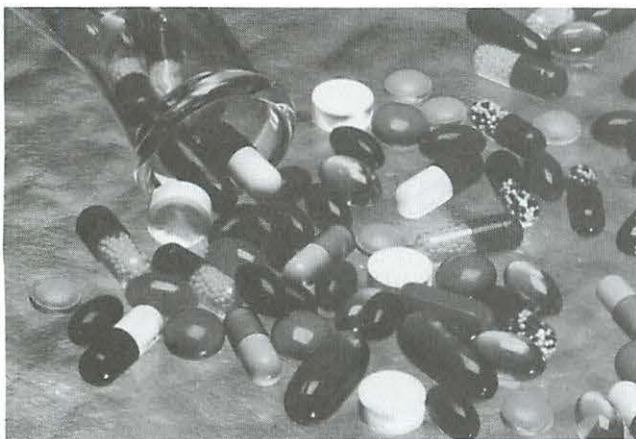
Exogenous drugs are those which originate outside the body. These include prescription drugs, alcohol, aspirin, food additives, and industrial chemicals.

If left untreated, both endogenous and exogenous drugs would continue to influence the body for as long as they circulated. In many cases their continued influence could do more harm than good. Fortunately, the liver metabolizes these drugs and limits their influence.

Hormones, for example, are inactivated and broken down in the liver almost as fast as they are produced. This prevents them from building up in the bloodstream so that we do not “overdose” on our own hormones. Once a hormone is “spent,” the liver converts it to a soluble substance for excretion through the kidney in the form of urine or through the gallbladder in the form of bile.

Even vital hormones such as *aldosterone* (al-DAH-stuh-rone) become toxic when the liver is damaged and cannot remove them. Aldosterone influences salt and water balance in the body. If its influence is not limited by the liver, body tissues begin to swell painfully.

Men suffering from liver disease tend to accumulate estrogen—a female hormone normally present in men in only very small amounts.



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One of the major tasks of the liver is to “turn off” biologically active substances so they lose their influence. Liver failure allows the influence of both endogenous and exogenous drugs to continue.

The liver also deactivates prescription drugs such as sulfonamides, chloramphenicol, and tetracycline. If the liver fails to remove drugs and medications such as these from the body, they may accumulate sufficiently to create a toxic overdose. However, when it functions properly, the liver breaks down the drugs and excretes them through the gallbladder in the form of bile.

Ethanol from beer, wine, or spirits is another exogenous drug which the liver metabolizes in order to limit its influence. The liver attempts to remove alcohol from a person’s system as quickly as possible in order to prevent brain damage. However, large amounts of ethanol over a long period of time can strain the liver to the point of *cirrhosis* (sir-OH-siss). The word *cirrhosis* literally means “orange condition” and refers to the color of a severely damaged liver. Continued drug abuse can put so much stress on a liver that it may cease to function altogether—a life-threatening condition called *hepatic coma*.

While the liver does all the work in removing these substances, the gallbladder serves as an empty vessel to collect and properly dispose of the waste products.



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The drug *acetaminophen* (uh-see-tuh-MIH-nuh-fin)—Tylenol™—is a painkiller. However, in continuing large doses it can become dangerous. The liver limits its influence by breaking it down and excreting the by-products in the bile.

Recent research reveals that more than seven hundred liquid medicines contain excessive amounts of alcohol. Some cough syrups, teething preparations, and decongestants for children have alcohol concentrations as high as 68 percent.

7 The gallbladder functions in harmony with the rest of the body.

The arrival of chyme in the duodenum sets into motion a chain of events which maintains

harmony within the body. The actions of the stomach must be shut down, and the work of the intestines must be turned on. Any disharmony or dysfunction here leads to indigestion, ulcers, and a waste of good food.

Stretch receptors in the wall of the duodenum alert the body that food is leaving the stomach and entering the small intestine. Acid receptors act to confirm a change in pH as partially digested protein irritates the walls of the duodenum. These receptors stimulate several intestinal hormones which “turn off” gastric (stomach) secretions and “turn on” the gallbladder and pancreas. These hormones include *secretin* (seh-KREE-tin) and *cholecystokinin* (KOLE-uh-siss-tuh-KIE-nin).

Secretin controls the pancreas and is released into the blood by the lining of the small intestine.

Cholecystokinin controls the gallbladder. It is also secreted from the intestinal lining in response to food—especially fat. When cholecystokinin reaches the gallbladder by way of the blood, the gallbladder contracts, squeezing concentrated bile into the common bile duct. The more fat in the chyme, the harder the gallbladder contracts.

Cholecystokinin also causes the sphincter muscles which seal off the end of the common bile duct to relax. This allows bile to squirt into the duodenum with each contraction of the gallbladder.

Both secretin and cholecystokinin have a limiting effect on the stomach. They turn off the

production of acid in the stomach and slow down its churning action. Without these two hormones to maintain harmony between the stomach and the small intestine, excess stomach acid would eventually eat a hole in the lining of the duodenum.

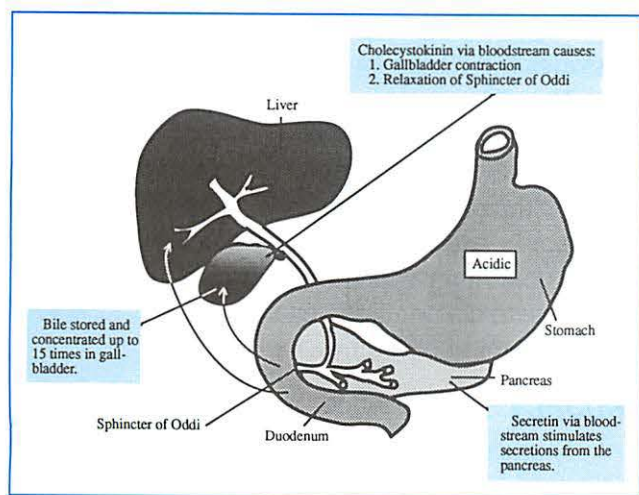
The presence of food in the small intestine also triggers a nerve reflex which travels all the way to the base of the brain before it returns to the stomach. This impulse slows down the stomach and simultaneously speeds up the working of the small intestine. When everything goes smoothly, there is a harmonious transfer of activity from the one to the other.

8 The gallbladder warns of imbalance in the body.

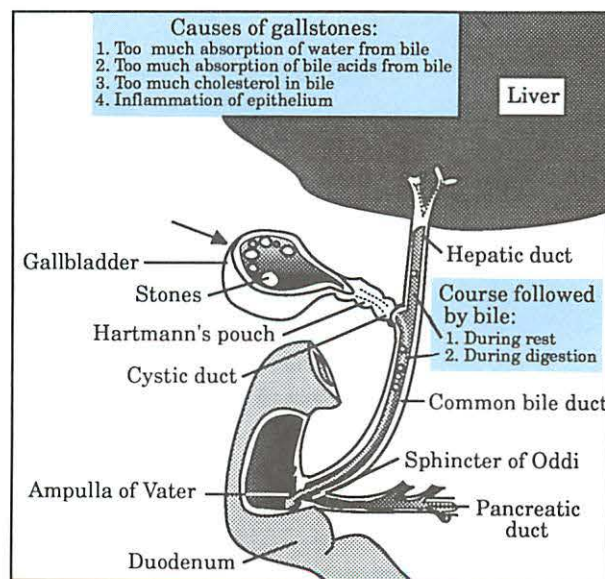
An excruciating pain radiating from the right shoulder or the lower back may be the first warning of gallstones. Gallstones form in the gallbladder when the relative concentrations of bile salts, lecithin, and cholesterol become unbalanced.

Cholesterol is insoluble in water. However, bile salts and lecithin combine with the cholesterol to make it soluble in bile. As the gallbladder concentrates bile, all three components are concentrated at the same rate. This process keeps the cholesterol in solution and prevents gallstones.

However, if there is too little bile salt, too little lecithin, or too much cholesterol, the bile may become supersaturated with cholesterol. This imbalance causes the cholesterol to precipitate out of solution, forming a solid stone. If the imbalance continues, layer after layer of cholesterol will build up, and the stone(s) will grow larger and larger.



The sphincter of Oddi is the circular muscle that seals off the common bile duct at the point where it enters the duodenum. (The opening itself is called the ampulla of Vater.) Dr. Oddi was a nineteenth-century Italian physician who named the muscle after himself, and Mr. Vater was an eighteenth-century German medical researcher.



Gallstones often become stuck at a point called *Hartmann's pouch*. This neck-like structure at the opening of the gallbladder can stretch and contract. If it contracts when a stone is present, it can produce a painful "gallbladder attack." Normally, such an attack ends naturally when the stone slips back into the larger main section of the gallbladder.

Some gallstones become so large that a single stone may almost fill the gallbladder. Other stones form as small crystals along the inner surface of the gallbladder. Occasionally, stones the size of a grain of sand develop in large numbers.

Sometimes gallstones do not have many symptoms. An imbalance in cholesterol can go on for years until one or more stones spill out of the gallbladder. If a stone is small enough to pass all the way to the duodenum, it may not even be noticed. However, if a stone is large, there can be severe consequences.

In some instances a gallbladder full of stones may actually rupture. This is a life-threatening situation and needs immediate attention. In other situations a stone may merely obstruct the flow of bile until it works its way out of the bile duct.

The pain of a gallbladder attack, called *biliary colic*, is often so intense that it prompts many patients to have an immediate *cholecystectomy* (KOLE-luh-sis-TECK-tuh-mee) (surgical removal of the gallbladder). This term comes from the Greek roots *chole*, meaning "bile," *kystis*, meaning "bladder," and *ektome*, meaning "a cutting out."

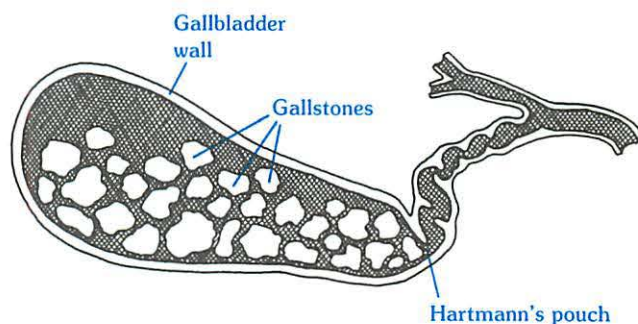


A cholecystectomy rules out the reoccurrence of gallstones, but it also precludes the gallbladder's concentrating effect on bile.

Another surgical procedure is called a *cholecystotomy* (KOLE-luh-siss-TAH-tuh-mee). It comes from the Greek root *tomeo*, meaning "to cut," and

refers to cutting open the gallbladder, removing the gallstone(s), and then sewing it back up.

Neither procedure, however, guarantees success. In fact, the number of patients who continue to have abdominal pain, indigestion, and flatulence is approximately equal to the number who experience relief from these symptoms.



Gallstones are not visible by X ray because they contain very little calcium. To identify gallstones, physicians must inject a dye that concentrates in the gallbladder. Gallstones then appear as bubbles in the dye. Physicians have recently been able to detect gallstones with ultrasound. Echoes from the stones show up well in contrast to the bile.

Verified results are being reported of a non-surgical way to remove gallstones. The method involves combining the juice of twelve lemons with a pint of pure olive oil and drinking small amounts every fifteen minutes until it is gone. One woman used this method and passed over two hundred gallstones the next morning.

However, the most effective way to deal with gallstones is to eliminate their cause. The primary cause of gallstones is bitterness (thus, the Scriptural phrase, "the gall of bitterness"). Another contributing factor is failure to have a high-fiber diet, especially wheat fiber, which is rich in lecithin. Lecithin allows bile to dissolve greater amounts of cholesterol without forming gallstones.

PROJECT 1

Study Acts 8:18–24 to determine how bitterness could upset the balance in the gallbladder and form gallstones.

PROJECT 2

Relate the work of the gallbladder to the functions of a successful father.

Date completed _____ Evaluation _____