



WISDOM QUIZ

Matthew 7:16–20

*“Ye shall know them by their fruits. . . .
A good tree cannot bring forth evil fruit. . . .
By their fruits ye shall know them.”*



How well do you understand the concept of fruit inspection?

True/False

- 1** Many Christians will accept false prophets because of their good works. ☒ ☐

(Read Luke 6:43–45.)

- Good deeds are to be distinguished from good fruit. A false prophet can carry out what others would consider good deeds. However, the source and motive of these deeds is evil. In God’s sight, the good works of false prophets are as filthy rags. (See Isaiah 64:6.)

God does not recognize the “good works” of the unsaved. ☐ ☒
(See Acts 10:4, 43–48.)

- 2** It is easy to detect the evil fruit of false prophets. ☐ ☒
(Read Colossians 2:8.)

- A discerning Christian will evaluate the fruit by its source. If the source is Satan, the fruit will be evil no matter how it appears on the surface. The destructive fruit of false prophets may appear to be good, but it contains seeds of false philosophies, which will bring increased destruction in the lives of those who receive it.

The fruit of false prophets is like malignant cancer. ☒ ☐
(See II Timothy 2:15–18.)

- 3** God expects us to study false religions in order to recognize false prophets. ☐ ☒

(Read Romans 16:19.)

- God makes it clear that we will be able to thoroughly identify a false prophet by the fruits of his life and ministry. Therefore, we do not need to expose ourselves to the danger of his deceptive philosophies.

False prophets understand the Scriptures but choose to misinterpret them. ☐ ☒
(See II Peter 3:16.)

- 4** Because a false prophet is evil, his life is shortened. ☐ ☒
(Read Psalm 73:1–12.)

- Many false prophets live to an old age. Fruitbearing comes at the end of a season, and their fruit is what will be tested. The seeds and the fruit often live beyond the false prophet and increase in corruption and destruction.

False prophets are bold about coming into the Church. ☒ ☐
(See Jude 4 and Matthew 13:24–30.)

Total Correct 7

Channels Only

MARY E. MAXWELL

ADA R. GIBBS



1. How I praise Thee, pre-cious Sav - ior, That Thy love laid hold of me;
2. Emp-tied that Thou shouldst fill me, A clean ves - sel in Thy hand;
3. Wit-ness-ing Thy pow'r to save me, Set - ting free from self and sin;
4. Je - sus, fill now with Thy Spir - it Hearts that full sur-ren-der know;



Thou hast saved and cleansed and filled me That I might Thy chan-nel be.
With no pow'r but as Thou giv - est Gra-cious-ly with each com-mand.
Thou who bought-est to pos-sess me, In Thy full-ness, Lord, come in.
That the streams of liv-ing wa-ter From our in - ner man may flow.

WISDOM WORKSHEET ON MATTHEW 7:16-20



*"Ye shall know them by
their fruits. Do men gather
grapes of thorns, or figs
of thistles?"*

*Even so every good tree
bringeth forth good fruit; but
a corrupt tree bringeth
forth evil fruit.*

*A good tree cannot bring
forth evil fruit, neither can
a corrupt tree bring
forth good fruit.*

*Every tree that bringeth not
forth good fruit is hewn down,
and cast into the fire.*

*Wherefore by their fruits
ye shall know them."*



H. Armstrong Roberts

On the third day of Creation, God created all plant life: grasses, herbs, and trees. "... The earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind..." (Genesis 1:12).

Plants were not the product of "nature" but a miracle of creation by our omnipotent God. Trees came before their seed, and their fruit was produced fully developed.

Trees are perennials—they grow year after year without being replanted—whereas herbs must be replanted every year. Jesus was talking about trees and fruit rather than herbs and vegetables.

Linguistics

Languages,
Grammar, Vocabulary,
Communication



KNOW

Greek: ἐπιγινώσκω
(eh-pih-gih-NO-skoe)

DEFINITION: To recognize something; to become fully acquainted with; to clearly understand; to know accurately.

FRUITS

Greek: καρπός (kar-POSS)

DEFINITION: The visible expression of power working inwardly and invisibly, the character of the fruit being evidence of that which produced it.

Do Resource A.

GOOD [TREE]

Greek: ἀγαθός (ah-gah-THOSS)

DEFINITION: Excellent in itself and in its effects in any respect.

BRING FORTH

Greek: ποιέω (poy-EH-oh)

DEFINITION: To make; to produce. An expression of the nature of something as expressed by actions.

GOOD [FRUIT]

Greek: καλός (kah-LOSS)

DEFINITION: Beautiful; valuable; excellent; choice; precious; useful; suitable; commendable. Excellent in nature and therefore well adapted for use.

CORRUPT [TREE]

Greek: σαπρός (sah-PROSS)

DEFINITION: Rotten; worthless; useless; causing fruit to spoil; no longer fit for use.

EVIL [FRUIT]

Greek: πονηρός (paw-nay-ROSS)

DEFINITION: Hurtful. That which has degenerated from its original form; diseased; culpable; harmful; malignant (deadly).

HEWN DOWN

Greek: ἐκκόπτω (ehk-KAWP-toe)

DEFINITION: ἐκ, "out of," and κόπτω, "to cut by a blow." To cut down or out.

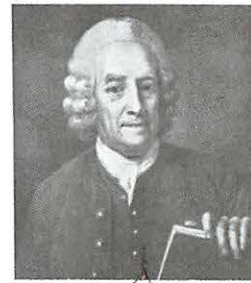
Do Resource B.

History

Archaeology,
Geography, Prophecy,
Music, Art, Literature



How do the good deeds of Emanuel Swedenborg and Johnny Appleseed emphasize the need to test fruit?



Emanuel Swedenborg
1688-1772

Emanuel Swedenborg was an eminent scientist in seven different fields. He designed a flying machine, a submarine, a mechanical car, a fire extinguisher, and a machine gun.

When he was fifty-six years old, he turned from his Lutheran upbringing to pursue direct contact with the spirit world. The result was a philosophy of a man-made world utopia.

Johnny Appleseed was a follower of Mr. Swedenborg's thinking. He was legendary for his works of planting apple seeds. The good works of both men obscured their false teachings.



Johnny Appleseed
1774-1845

How did the philosophy of Hegel produce ravenous wolves?



Georg W. F. Hegel
1770-1831

The false theology of Hegel became the basis for Adolf Hitler's atrocities. *Adolf* means "wolf," and *Hitler* means "leader of common people." He covered evil fruit with good deeds.

Do Resource C.

Science

Chemistry, Biology,
Astronomy, Geology,
Physics, Mathematics



Why did God relate grapes and figs to thorns and thistles?

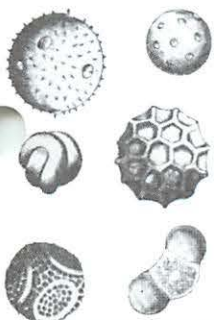


One of the many varieties of thistles

A certain type of thornbush in the Middle East is the *tree heath*. Its white, globe-shaped flowers resemble grapes but are destructive to crops.

Thistles have seed balls that look like figs but threaten the farmer's work.

How does raising fruit illustrate principles of rearing children?



Various types of pollen grains

Cross-pollination introduces genetic information from neighboring trees and changes the makeup of the next generation of seeds. This is similar to peer socialization.

Self-pollination leads to poor fruit to the first, second, and third generations. The same is true for children who isolate themselves from family and friends.

Engrafting produces the best fruit, as do families engrafted in Christ by salvation.

Do Resource D.

How is an angel mushroom like a false prophet?



Angel mushroom

The name *angel* is hardly a warning for this harmless-looking but deadliest of all mushrooms.

There is no known remedy for its fatal poison.

Do Resource E.

Law

Government,
Economics, Logic



How does gambling relate to the nature of a false prophet?

Just as a corrupt tree cannot bring forth good fruit, so gambling cannot produce good results. The motivations of gambling are the love of money, which is the root of all evil, and the desire to get rich quick, which God identifies as an "evil eye."



Gambling includes bingo, lotteries, and other games of chance.

Gambling is taking a risk in an unpredictable event with the motive of gaining money without labor.

Gambling not only spawns crime but also removes the will to be diligent in labor. Gambling is particularly damaging to the poor who take precious resources and squander them on the illusion of resolving financial problems.

Even those who "win" face the predictable greed and bitterness of human nature by family and friends who demand their share.

Do Resource F.

How do elements of fraud compare to methods of a false prophet?

Those who perpetrate frauds appeal to the weakness of human nature in the same way that false prophets prey upon weaker Christians.

Both swindlers and false prophets appeal to the greed of their victims as they give them the "bait" of secret desires, the "hook" of true statements, the "plant" of documentation, and the "bite" to act quickly.



Ill-gotten gain and false teaching both contain a curse.

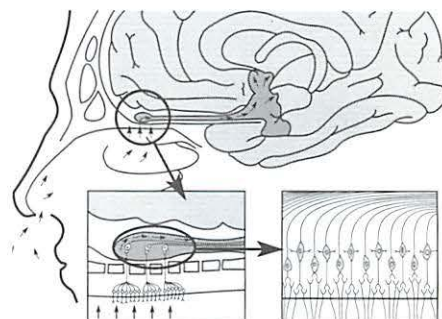
Medicine

Health,
Nutrition, Behavior,
Counseling



How does the nose's ability to identify spoiled food illustrate the way we are to test false prophets?

Food that is unfit for consumption can often be detected before it is eaten, just as the teaching of a false prophet can be tested before it is received.



The odor-detecting olfactory nerve receptors are located at the top of the nasal passages and connected to the brain.

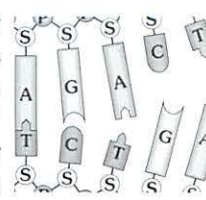
Spoiled food releases gas molecules which have an unpleasant odor. By sniffing the food before tasting it, we draw molecules into the nasal passage and over a mucous membrane covered with thousands of hair-like projections called *cilia*.

These cilia are directly connected to nerves, which, in turn, are connected to the brain. When the brain detects spoiled food, it signals the body to reject it.

How does ribonucleic acid illustrate the genetic nature of evil fruit?

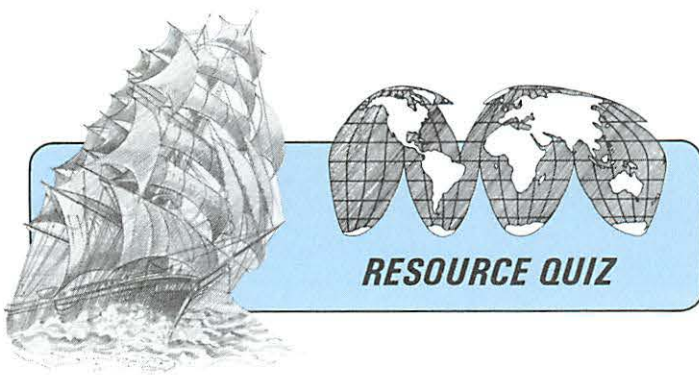
Each cell in our bodies manufactures its own specific proteins according to the detailed instructions of the DNA "blueprint."

The messenger that translates DNA's coded information is *ribonucleic acid* (RNA). Any error will produce damage in the body.



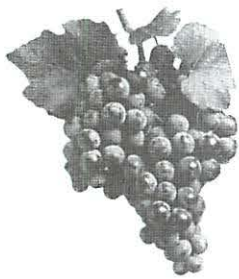
DNA ladder

Do Resource G.



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

WHAT IS A FALSE PROPHET'S NATURE?



- How do we rightly divide God's Word?.....2767
- What is the best Bible commentary?.....2768
- How do parallel passages reveal the nature of false prophets?.....2769
- What fruit should we see in false prophets?..2770

HOW DO WE TEST A FALSE PROPHET?



- What is God's test for false prophets?2771
- How does a factious Christian differ from a false prophet?2772
- How does a factious Christian differ from a fearless reformer?2773
- How should we treat false prophets?2778

WHAT "WOLF" DEVoured MILLIONS?



- What doctrinal error corrupted Hegel?2779
- What philosophy spoiled Karl Marx?2780
- How were Stalin and Lenin influenced by false prophets?.....2781
- How did Adolf Hitler bear the fruit of Hegel's teachings?2782

WHAT IS GOOD FRUIT?



- What are the basic tests of good fruit?.....2785
- How does cross-pollination change fruit?....2787
- What are the secrets of effective grafting? ...2788
- Why do smaller trees bear more fruit?2791
- What hinders fruitfulness in trees?2793

HOW CAN YOU BUY THE BEST FRUIT?



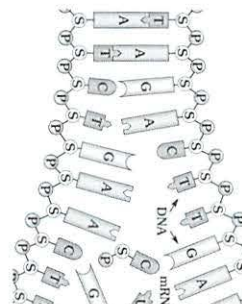
- What factors determine good fruit?.....2795
- Can you tell wax from natural bloom?2804
- Why is a size 80 orange bigger than a 125?.....2808
- Are large or small oranges a better value?...2809
- What spiritual insights are taught by fruit?2810

HOW ARE ROOTS OF GAMBLING EVIL?

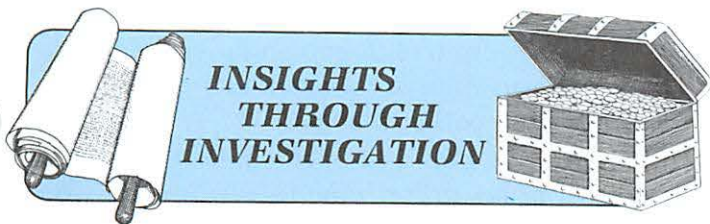


- How does gambling defy God's command? 2811
- Why did Thomas Jefferson support gambling?.....2811
- Why were lotteries outlawed in America?...2813
- What crimes come with gambling?.....2814
- How can a gambler recover his money?2814

HOW DOES RNA REPRODUCE FRUIT?

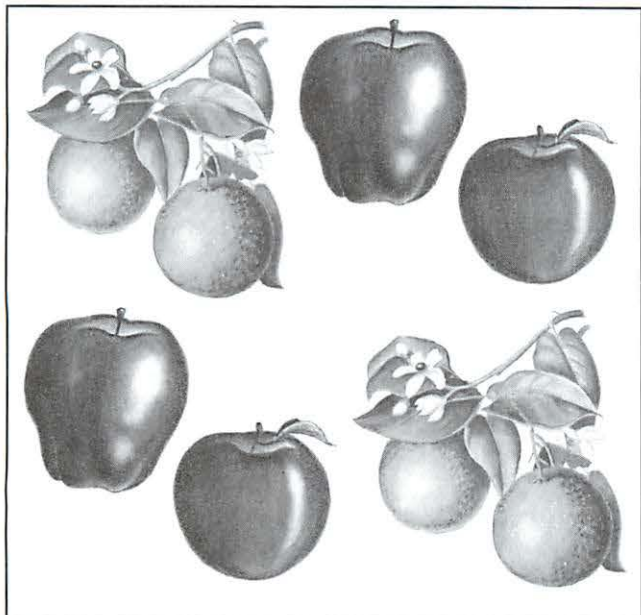


- How is DNA like a blueprint?2815
- How do genetic defects occur?2820
- Why do some diseases seem to "practice" racial discrimination?.....2821
- How can genes affect diet?2822



INSIGHTS THROUGH INVESTIGATION

HOW DOES COMPARING SCRIPTURE WITH SCRIPTURE CLARIFY THE NATURE OF A FALSE PROPHET?



The familiar phrase of comparing apples with apples and oranges with oranges is especially true when comparing Scripture with Scripture.

Every Christian is instructed to show himself approved to God. He is to be a workman who is not ashamed because he rightly divides the Word of Truth. (See II Timothy 2:15.)

Rightly Dividing Truth

The words “rightly divide” are English translations of the Greek word ὀρθοτομέω (or-thaw-taw-MEH-oh).

ὀρθός (or-THOSS) means “straight.” It is from this word that we get the terms *orthopedics* (“straight feet”) and *orthodontics* (“straight teeth”). τέμνω (TEHM-no) means “to cut.” The cutting refers to one sharp stroke rather than cutting by hacking.

The term *rightly dividing* means to make a fine, precise division between the truths of Scripture so the passage can be properly understood.

Rightly Dividing Matthew 7:15–20

The casual reading of this passage could result in many confusing questions.

Προσέχετε δὲ But beware	ἀπὸ of	τῶν the	ψευδοπροφητῶν, false prophets,
οἵτινες who	ἔρχονται come	πρὸς to	ὑμᾶς ἐν ἐνδύμασιν you in raiment
προβάτων, of sheep,	ἔσωθεν δέ but within	εἰσιν are	λύκοι ἄρπαγες. wolves rapacious.
ἀπὸ By	τῶν καρπῶν αὐτῶν their fruits	ἐπιγνώσεσθε ye shall know	αὐτούς. them.
μήτι Do they gather	συλλέγουσιν from	ἀπὸ ἀκανθῶν thorns	σταφυλὴν, a bunch of grapes,
ἢ or	ἀπὸ τριβόλων from thistles	σῦκα; figs?	οὕτως πᾶν δένδρον So every tree
ἀγαθὸν good	καρπούς fruits	καλοὺς good	ποιεῖ, τὸ δὲ σαπρὸν produces, but the corrupt
δένδρον tree	καρπούς fruits	πονηροὺς bad	ποιεῖ. produces.
οὐ Cannot	δύναται a tree	δένδρον good	ἀγαθὸν καρπούς fruits
πονηροὺς evil	ποιεῖν, produce,	οὐδὲ nor	δένδρον σαπρὸν καρπούς a tree corrupt fruits
καλοὺς good	ποιεῖν. produce.	πᾶν Every	δένδρον μὴ ποιοῦν tree not producing
καρπὸν fruit	καλὸν good	ἐκκόπτεται is cut down	καὶ εἰς πῦρ and into fire
βάλλεται. is cast.	ἄραγε Then surely	ἀπὸ by	τῶν καρπῶν αὐτῶν their fruits
ἐπιγνώσεσθε ye shall know	αὐτούς. them.		

Questions About This Passage That Will Be Answered When It Is Rightly Divided

- Does this passage teach that a Christian cannot sin (“bring forth evil fruit”)?

Such a teaching would contradict I John 1:8–10, “If we say that we have no sin, we deceive ourselves, and the truth is not in us. . . .”

- **Does this passage mean that a non-Christian cannot do anything good (“neither can a corrupt tree bring forth good fruit”)?**

How then would this thought compare with the good works which Cornelius performed before he became a Christian?

The Lord said of the works of Cornelius, “. . . Thy prayers and thine alms are come up for a memorial before God” (Acts 10:4).

- **Does this passage say that a Christian who does not bring forth good fruit will be cut down and cast into hell (“is hewn down and cast into the fire”)?**

This interpretation would be contrary to the clear teaching of I Corinthians 3:15, “If any man’s work shall be burned, he shall suffer loss: but he himself shall be saved; yet so as by fire.”

- **Do the trees in this passage refer to people or to works?**
- **Does the fruit refer to our works or works that God carries out through us?**

Comparing Scripture With Scripture

The best commentary on the Bible is the Bible. When a passage in one part of the Bible brings up difficult questions, passages in other parts of the Bible should be searched out in order to bring additional understanding to the text.

As we study related sections of Scripture and pray for wisdom, the Spirit of God will guide us to the truth of the passage.

The following four sections of Scripture all refer to fruit and trees. As we analyze each one of them, another factor becomes apparent which clarifies the passage in Matthew 7.

Parallel Passage 1

“For a good tree bringeth not forth corrupt fruit; neither doth a corrupt tree bring forth good fruit.

“For every tree is known by its own fruit. For of thorns men do not gather figs, nor of a bramble bush gather they grapes.

“A good man out of the good treasure of his heart bringeth forth that which is good; and an evil man out of the evil treasure of his heart bringeth forth that which is evil: for of the abundance of the heart his mouth speaketh.

“And why call ye me, Lord, Lord, and do not the things which I say?” (Luke 6:43–46)

Parallel Passage 2

“Wherefore I say unto you, All manner of sin and blasphemy shall be forgiven unto men: but the blasphemy against the Holy Ghost shall not be forgiven unto men.

“And whosoever speaketh a word against the Son of man, it shall be forgiven him: but whosoever speaketh against the Holy Ghost; it shall not be forgiven him, neither in this world, neither in the world to come.

“Either make the tree good, and his fruit good; or else make the tree corrupt, and his fruit corrupt: for the tree is known by his fruit.

“O generation of vipers, how can ye, being evil, speak good things? for out of the abundance of the heart the mouth speaketh” (Matthew 12:31–34).

Parallel Passage 3

“Abide in me, and I in you. As the branch cannot bear fruit of itself, except it abide in the vine; no more can ye, except ye abide in me.

“I am the vine, ye are the branches: He that abideth in me, and I in him, the same bringeth forth much fruit: for without me ye can do nothing.

“If a man abide not in me, he is cast forth as a branch, and is withered; and men gather them, and cast them into the fire, and they are burned” (John 15:4–6).

Parallel Passage 4

“Out of the same mouth proceedeth blessing and cursing. My brethren, these things ought not so to be.

"Doth a fountain send forth at the same place sweet water and bitter? Can the fig tree, my brethren, bear olive berries? Either a vine, figs?"

"So can no fountain both yield salt water and fresh" (James 3:10–12).

General Observations

- Each passage contains the primary theme of Matthew 7:15–20. However, various other words and ideas are combined with them.
- The third passage answers the question of whether the fruit refers to what we do for God or what God does through us, ". . . *for without me you can do nothing.*"
- The first and second passages both contain the phrase "*tree is known by its own [or his] fruit.*" The third and fourth sections do not contain this phrase.
- The first two passages contain the statement "*of the abundance of the heart his [or the] mouth speaketh.*"

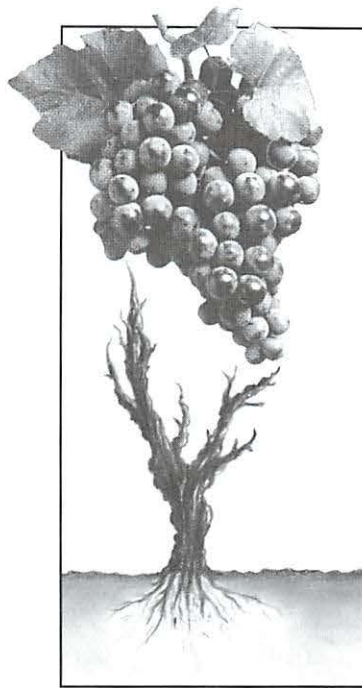
Specific Observations

- Passages one and two clearly refer to non-Christians, and passages three and four are referring to Christians. Several words in the passages confirm this observation.

Words in Passages 1 and 2 Describing Non-Christians

- Figs and grapes are from a different species of plants than brambles and thorns. Similarly, sheep and wolves are different species of animals, and Christians are compared to sheep, never to wolves.
- The phrase that a sin should not be forgiven in the world to come would identify the plight of a non-Christian, because the blood of Christ cleanses away all the sin of a Christian.
- The word *viper* was used by Christ to refer to unbelieving Pharisees who opposed His work and were of their father, the devil.

Words in Passages 3 and 4 Describing Christians



The branch grows out of the vine and is an integral part of it. To remove the entire branch would be to destroy the vine.

- The branches of a vine describe a union which cannot be separated. The branch grows out of the vine and is a part of it, and the point at which the vine ends and the branch begins is within the heart of the vine.

Only a *part* of the branch, therefore, could be cut off and cast into the fire. The base of the branch continues to be a living part of the vine but bears no fruit.

This truth is further explained in I Corinthians 3. All the fruit of a Christian may be burned up, but he himself will still be saved because he is still a part of the vine.

- The words *my brethren* in the fourth passage clearly show that the passage is referring to Christians.
- Grape vines and fig trees are both fruit-bearing plants. Thistles and brambles are in a different classification.

How These Passages Clarify the Nature of a False Prophet

Based on these passages, a false prophet is a non-Christian—he has never known life in Christ. All his good works are as filthy rags because they are accomplished by him and not by the power of Christ in him.

These are the ones who will come to Christ at the judgment, saying, ". . . Lord, Lord, have we not prophesied in thy name? . . ."

Christ will condemn them as those who "*work iniquity,*" stating, ". . . *I never knew you: depart from me . . .*" (Matthew 7:22–23).

Because the “treasures” in the heart of a non-Christian are corrupt and evil, his words will be false as he seeks to teach others the truth.

The only fruit that a non-Christian can produce which is acceptable to God are the fruits of repentance of which John the Baptist spoke. These are the good works in the life of Cornelius which opened the door for his salvation.

Even these fruits are not of ourselves, because God gives us the desire and power to repent and be saved. (See Ephesians 2:8–9.)

How the Nature of a False Prophet Determines the Fruit for Which We Should Look

Many false prophets do things that are applauded by the world as good works. They also appear to be sincere.

Based on these outward evidences, it would be very difficult to identify such teachers as false prophets. “. . . By good words and fair speeches [they] deceive the hearts of the simple” (Romans 16:18).

Therefore, the fruit that a wise Christian should look for in a leader is the fruit of salvation.

If he is truly a Christian but is teaching doctrinal error, he should be reproved, rebuked, and exhorted by those in leadership or taken aside by other Christians and shown the way more perfectly, as Aquila and Priscilla did for Apollos. (See Acts 18:24–28.)

If one who presents error is not a Christian, his message should be rejected. The false prophets whom Jesus described are ravenous wolves whose purpose is to devour Christians, not to be taught by them.

How to Discern the Fruit of a False Prophet

We can see the outward actions of a person and listen to his words, but we cannot see his heart. Neither are we to judge another person. How then can we detect the fruits of salvation?

The answer is found in I John 4:1–3. The Spirit of God will confirm with your spirit the spirit of the prophet. We are to “. . . believe not every spirit, but try the spirits whether they are of God: because many false prophets are gone out into the world.”

This passage goes on to explain how to try the spirit in order to know whether it is of God.

“. . . Every spirit that confesseth that Jesus Christ is come in the flesh is of God: And every spirit that confesseth not that Jesus Christ is come in the flesh is not of God: and this is that spirit of antichrist. . . .”

The Spirit of God bears witness with our spirits that we are children of God. (See Romans 8:16.) It is in the spirit that we have fellowship with other Christians and are able to walk together in the light of God’s truth. (See I John 1:7.)

PROJECT



John the Baptist

When the Pharisees came out to hear John the Baptist, he rebuked them as vipers.

He also spoke of the axe being laid to the root of the trees and urged his hearers to bring forth fruits “meet for repentance.”

His ministry is described in Matthew 3:1–12 and is amplified by the words of Jesus in Matthew 7:15–20.

Study these parallel passages and also Jude 4, 12 to further confirm the fact that false prophets are not Christians.

“But when he saw many of the Pharisees and Sadducees come to his baptism, he said unto them, O generation of vipers, who hath warned you to flee from the wrath to come? Bring forth therefore fruits meet for repentance:

“And think not to say within yourselves, We have Abraham to our father: for I say unto you, that God is able of these stones to raise up children unto Abraham.

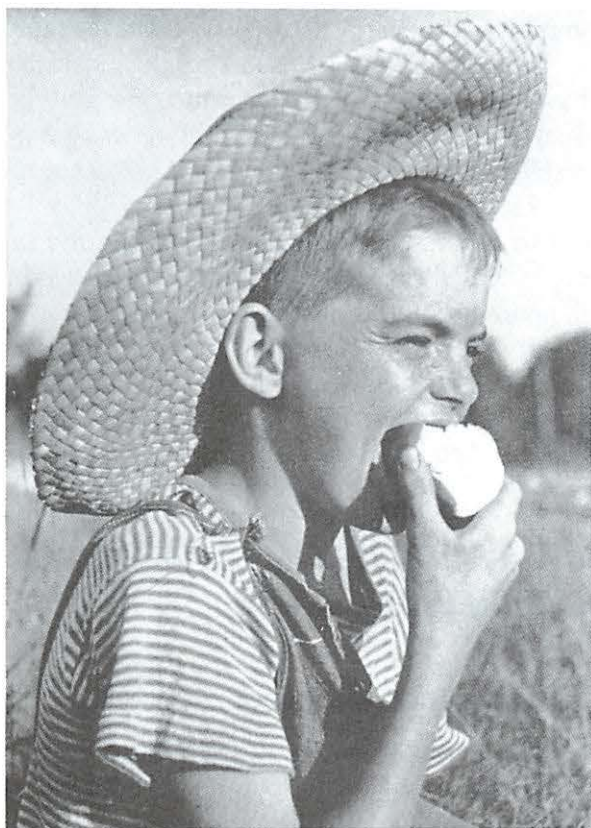
“And now also the axe is laid unto the root of the trees: therefore every tree which bringeth not forth good fruit is hewn down, and cast into the fire” (Matthew 3:7–10).

“For there are certain men crept in unawares, who were before of old ordained to this condemnation, ungodly men, turning the grace of our God into lasciviousness, and denying the only Lord God, and our Lord Jesus Christ . . . These are . . . trees whose fruit withereth, without fruit, twice dead, plucked up by the roots” (Jude 4, 12).

Date completed _____ Evaluation _____



HOW TO DISTINGUISH FALSE PROPHETS FROM FACTIOUS CHRISTIANS AND FALLEN BRETHREN



Black Star

The first bite of an apple will be a test of its quality. If it is spoiled, we will spit it out. If it is good, we will enjoy it for nourishment. Similarly, we are to test the words of those who teach Biblical truth. *“For the ear trieth words, as the mouth tasteth meat” (Job 34:3).*

God's Mandate to Test Prophets

As Christians, we are instructed by God not to believe every teacher of spiritual matters. We are to try the spirit of the teacher and the message to see whether or not it is of God. (See I John 4:1.)

We are also to test the fruit of a prophet to see whether it is good fruit or evil fruit. (See Matthew 7:20.)

Can You Detect a False Prophet?

- A new pastor came to a Bible-believing church and began preaching a series of messages. His teachings produced strife in the church and caused sharp division among the people.

The chairman of the board accused the new pastor of being a false prophet. He quoted James 3:16 to prove his point. *“For where envying and strife is, there is confusion and every evil work.”*

Was the chairman of the board correct in his conclusion? ☐ Yes ☒ No

- A pastor of a large church committed adultery with one of the women in the church. Before the sin became known, the pastor began preaching that there are times when divorce and remarriage are permissible. Some members who were alarmed at his new teaching learned of his immorality and accused him of being a false prophet by turning the grace of God into lasciviousness. (See Jude 4.)

Was the judgment of these members accurate? ☒ Yes ☐ No

- A forceful speaker claimed to be a traveling evangelist, but wherever he went, most of those who listened to him rejected his message. Finally his staff left him.

On the basis of these facts, would you suspect that he might be a false prophet? (See II Timothy 1:15 and 4:11.) ☐ Yes ☒ No

Key Terms to Define

In order to identify a false prophet accurately and avoid wrong judgment, we must know how to identify three types of people:

- 1 Factious Christians
- 2 Fallen Brethren
- 3 False Prophets

Scripture teaches us to respond differently to a fallen brother and to a factious Christian than to a false prophet.

We are to exhort a factious Christian, reprove a fallen brother, and reject a false prophet. If we treat everyone who violates Scriptural truth or Biblical moral standards as a false prophet, we will be guilty of being harsh and judgmental.

1 Factious Christians

A factious Christian is not a false prophet, but he can do much damage in the church.

A false prophet is generally a leader in a position of authority or influence, while a factious Christian is usually a member who persists in imposing his will on the leadership of the church.

A leader can be factious when he makes demands on the people rather than beseeching them as Paul did in the early Church. A wise Christian leads by instruction and example. A factious Christian leads by demands and argumentation.

Definition of a factious Christian:

A factious Christian is self-willed and impatient. He is stubborn, obstinate, headstrong, and ungovernable.

There are several words in the New Testament which describe a factious Christian:

- He is **carnal**. (See I Corinthians 3:3.)
- He is **unruly**. (See I Thessalonians 5:14.)
- He is **argumentative**. (See II Timothy 2:24.)
- He is **discordant**. (See Proverbs 6:16–19.)
- He is **divisive**. (See Romans 16:17.)

Each of these terms describes individuals who bring about disunity, animosity, and destruction by the imposition of their will upon the group.

A factious Christian does not understand how to make a proper appeal to those who are in authority and to trust the Lord to work through the authorities to correct a problem.

Instead he takes matters into his own hands and accuses anyone who opposes him of being against the truth.

A wise Christian will follow proper channels in pointing out inconsistencies or errors in doctrine or Christian living.

A factious Christian becomes consumed with the belief that he is correct on a particular matter and forces all those around him either to agree with him or to become his enemy. Soon the church is polarized around the issue, and attitudes flare which are more destructive to the cause of Christ than was the original issue.

Causes of a factious Christian:

A factious Christian usually has several levels of motivation. He has a keen awareness of what is right and what is wrong, and he is outwardly committed to being a champion of what is right.

Often a factious Christian has personal failures which he has not fully overcome. He may have achieved a surface victory, but the roots of the sin are still in place and provide constant temptation.

He may pride himself in surface victory and react to others who do not demonstrate the same victory. Yet the root problems which caused the defeat are ignored or justified.

It is for this reason that those who take up crusades against surface sins often fall into those same sins and give great occasion to the enemies of the Lord to blaspheme His name.

HOW A FACTIOUS CHRISTIAN CAUSES DIVISION IN THE CHURCH

• He becomes alarmed.

A factious Christian is sensitive to failures in the lives of others in the church, especially those who are in leadership positions.

If he has any bitterness over wrongs that were done to him, a factious Christian will be very sensitive to others who are wrongly treated and will take up an offense for them.

His defense will be particularly harsh because of guilt and frustration within himself over his own failures and because of the blame that he is using to balance his guilt.

• He displays reaction.

A factious Christian may react to a wrong in a variety of ways. He will usually express his displeasure to whoever is around him at the moment. Those who hear his initial reaction are usually the ones who carry reports of it to the

leadership, and their reports are often magnified or distorted.

These reports cause the leadership to react to the disgruntled Christian. The leaders are concerned about his attitudes and how they will adversely affect the rest of the church.

By the time the factious Christian reaches the leadership, they are already closed to his suggestions and are looking for ways to deal with him about his wrong attitudes.

- **He develops tenacity.**

When a factious Christian tries to explain his concerns to the leadership of the church or to other Christians in the church, he usually gets a cool reception from them. In an attempt to balance his overreaction, the leadership may challenge certain points he is making. They will also react to his attitudes.

Thus, he will conclude that they are not open to the truth and that they are persecuting him for his stand against evil. He is now convinced that he has a righteous cause which he must pursue for the sake of Christ.

- **He causes division.**

Armed with evidence of wrongdoing and Scripture which condemns that particular wrong, the factious Christian begins to gather other people around him who agree with him. Many of these people have their own hurts and grievances against the leadership.

The factious Christian will keep in touch with those who agree with him and will often form a group in order to make their demands heard by the leadership. The people are then divided, and a church split will soon occur.

The members lose confidence not only in their leadership but also in the power of God to work effectively in the lives of His people.

The tragedy of this sequence is that both sides believe they are right, and many weaker Christians in the church will take up offenses for one side or the other. In so doing, roots of bitterness spring up in them, and many in the church and community are defiled.



Three Lions

Richard Baxter lived during the seventeenth century in England. His strong preaching and writing on the holiness of God caused hostile reaction by the Church of England on one side and the Catholic Church on the other side. Was he a factious Christian, a false prophet, or a reformer?

HOW DO FACTIOUS CHRISTIANS DIFFER FROM FEARLESS REFORMERS?

The very nature of a reformation movement within the church involves Christians who recognize and speak out against teachings or policies which are contrary to Scripture.

Such individuals would certainly be called “factious” Christians by those who do not want the reform to occur.

John Knox challenged the teachings of the Church in Scotland; Martin Luther spoke out against the false doctrines and practices of the Church in Rome.

How do the motives and actions of factious Christians differ from these courageous reformers who challenged the religious errors of their day?

- **Factious Christians force their views on other Christians.**

It is the work of the Holy Spirit to convict Christians of things in their lives that are not right. Often one Christian will yield a new area in his life to the Lord and then try to do the work of the Holy Spirit by forcing other Christians to make the same commitment.

Factious Christians try to be the conscience of other Christians. In so doing, they cause reaction to themselves and hinder the work that the Holy Spirit could have done in the lives of those around them.

- **Factious Christians demand immediate change.**

The Holy Spirit may have taken months or even years to bring a Christian to a particular point of commitment. When this Christian expects others to make the same commitment without the benefit of the teaching and the prodding of the Holy Spirit, he becomes factious.

- **Factious Christians fight over traditions.**

Courageous reformers majored on key doctrines of the faith such as the inspiration of Scripture and the basic teachings of salvation.

Factious Christians focus on minor issues, such as the traditional order of the service, the type of hymnal used, the style of decor in the church building, or methods of carrying out the Lord's work.

It is proper to express opinions on these matters but then to let the Holy Spirit and the Scriptures do the work of convicting.

- **Factious Christians despise those who differ with them.**

Scripture instructs Christians to accept those with different views on questionable subjects and not to despise or judge them for not agreeing with every point.

When Christians despise and reject those who differ with their interpretation or application of Biblical instruction for the Christian life, they become factious.

A mature Christian will allow the Lord to work in the lives of those who do not accurately or fully apply the Scriptures on such matters as debt, remarriage, and family size.

- **Factious Christians refuse to leave a church in the right way.**

God uses the picture of a body to describe a local church. Each member is an individual cell

within the body. Every day, cells in our physical bodies leave and create no damage in doing so.

If, however, a group of cells that should leave the body collect in an unauthorized way, they become cancerous and do great damage throughout the whole body.

There are times when a Christian should leave a church. If he does it quietly and alone, he avoids the pattern of a factious Christian.

- **Factious Christians take truth out of balance.**

A factious person will usually emphasize one truth to the neglect of others. In so doing, he takes the truth out of balance.

Truth out of balance leads to heresy and causes polarization within the church. As sides are drawn up, division occurs among the people along with destructive attitudes of animosity.

The following sequence describes what usually takes place.

Sequence of Imbalance

Truth out of balance



Argumentation



Ill feeling



Cliques



Split

HOW TO RESPOND TO A FACTIOUS CHRISTIAN

A Christian who is factious is operating in the energy of the flesh and is grieving the Holy Spirit. If left to himself, he will continue to do

damage within the Body of Christ. Therefore, mature leaders in the church must quickly and wisely respond to him.

- **He is to be instructed.**

A factious Christian is often sincere in his efforts to correct things which he sees are wrong. He needs to be given wise instruction which will help him see not only the balance of Scriptural truths but also how damaging his factious spirit is within the Body of Christ.

Such instruction is to be given to him by one who is qualified to do it. This is the teaching of II Timothy 2:24–26: “. . . The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, **In meekness instructing those that oppose themselves;**

“If God peradventure will give them repentance to the acknowledging of the truth; And that they may recover themselves out of the snare of the devil, who are taken captive by him at his will.”

- **He is to be warned.**

If a factious Christian rejects the instruction that was given to him, he should be lovingly but firmly warned. He should be told that he is sowing discord among the brethren and that this is not only contrary to the teaching and spirit of Christ but an abomination to the Lord, according to Proverbs 6:16–19.

It should be brought to the attention of the factious Christian that because he has rejected the instruction of church leaders, he is guilty of being unruly and out from under the protection of God-given authority.

This warning is prescribed in I Thessalonians 5:14: *“Now we exhort you, brethren, **warn them that are unruly.** . . .”*

- **He is to be avoided.**

When a factious Christian rejects both instruction and warning, he is to be avoided, according to the instruction of Romans 16:17–18.

*“Now I beseech you, brethren, **mark them which cause divisions and offenses contrary to the doctrine which ye have learned; and avoid them.***

“For they that are such serve not our Lord Jesus Christ, but their own belly; and by good words and fair speeches deceive the hearts of the simple.”

If various cliques form within the church, we are not to identify with any one of them. Such identification would be a clear mark of carnality, according to I Corinthians 3:3–9: *“For ye are yet carnal: for whereas there is among you **envying, and strife, and divisions,** are ye not carnal, and walk as men? . . .”*

Why does God allow factious Christians to be in the church?

God has a purpose for factious Christians. They expose pride in those who are factious and reveal the spirituality of the leaders whom God uses to bring about reconciliation.

God reveals leadership in a church by allowing a wise, mature Christian to bring harmony between sincere Christians who are on opposite sides of a controversy.

“For there must be also heresies [factions] among you, that they which are approved may be made manifest among you” (I Corinthians 11:19).

HOW TO RECOGNIZE FACTIOUS CHRISTIANS

It is important to recognize the beginnings of factions and to be aware of the damage they can cause within a larger group.

Levels of Factions:

- **Cliques**

A clique is a narrow, exclusive group of people who are held together by an identity of common interests and ideas.

- **Seditions**

A sedition is a clique which encourages resistance to or rejection of God-given authority.

- **Schisms**

A schism is a seditious clique which formally separates from a church body after a period of

discord, disharmony, argumentation, and bitter wrangling.

2 Fallen Brethren

A fallen brother is a Christian who has been overtaken by a sin. He is not a false prophet and should not be rejected as one. Instead he should be restored by those who are spiritually mature.

HOW A CHRISTIAN FALLS

A Christian does not normally fall all at once. Usually a slow process of spiritual defeat takes place within a believer, so when a test comes, he is unable to withstand it.



A mighty oak tree can withstand violent storms unless the core of the tree has been eaten away by invading parasites.

- **A believer begins to fall when he entertains an evil thought.**

The battleground between God and Satan is the human mind. When a Christian allows an evil thought to stay in his mind, he provides “ground” for Satan to bring a temptation.

“Every man is tempted, when he is drawn away of his own lust, and enticed” (James 1:14).

- **Surrendered ground allows Satan to build strongholds.**

Sinful thoughts give Satan the freedom to construct a fortress of evil in the mind of the

believer. From this stronghold, Satan has a distinct advantage over the mind, will, and emotions of the Christian.

He can, in fact, take the Christian captive at his will. (See II Timothy 2:26.)

- **Strongholds bring defeat.**

Once he has control of the mind, will, and emotions of the believer, Satan can easily arrange a temptation which will overpower the Christian.

Unfortunately, many Christians repent of the sin but never reclaim the “ground” that was given to Satan or cast down the strongholds he has built. Consequently, they try to live a victorious Christian life but repeatedly experience defeat.

Symptoms of a fallen brother:

- He will judge others for the very things of which he himself is guilty.
- He will cut off fellowship with Godly Christians and identify with those who are experiencing similar defeats in their lives.
- He will react to Godly standards and disciplines by claiming that they are legalistic.
- He will enjoy darkness and demonstrate the symptoms of guilt.
- He will misinterpret or misapply Scripture in an attempt to justify his sin.

Types of fallen brethren:

There are six classifications of fallen brethren listed in I Corinthians 5:11.

“But now I have written unto you not to keep company, if any man that is called a brother be:

- *a fornicator*
- *covetous*
- *an idolater*
- *a railer*
- *a drunkard*
- *an extortioner;*

with such an one no not to eat.”

Because we are instructed not to eat with these types of fallen brethren, it is important to identify each one precisely.

• A Fornicator

A fornicator is one who commits immoral acts with another person. The word is generally used of illicit sexual relationships before marriage but can also include extramarital relationships.

The Greek word for “fornication” is πόρνος (POR-noss), from which we get the term *pornography*. A fornicator is also defined as a *whoremonger*. The word *monger* refers to one who trades in a commodity. Thus, a Christian who buys or sells pornography would be classified as a *whoremonger*.

• A Coveter

A covetous person is one who has an inordinate desire for wealth or possessions or for that which belongs to another person.

One who covets is guilty of breaking the Tenth Commandment, which states, “*Thou shalt not covet thy neighbour’s house, thou shalt not covet thy neighbour’s wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is thy neighbour’s*” (Exodus 20:17).

The Greek word for “covetousness” means “holding, yet desiring more; greedy of gain.”

A covetous person concentrates his priorities on material things and is willing to sacrifice relationships and principles to gain them.

• An Idolater

An idolater is one who expects from things or people what only God can give. Thus, covetousness is equated in Scripture with idolatry. (See Colossians 3:5.)

An idolater is also one who has things in his home or life which have been used in occult worship, such as statues of foreign gods. Paul points out that the statues are harmless in themselves but that demons are connected with them. (See I Corinthians 10:19–20.)

• A Railer

A railer is one who uses bitter, harsh, or abusive words in his dealings with others. Having an angry spirit, he slanders the name of a person and works at character assassination.

Peter warned not to return railing for railing, but rather blessing. Paul made the bold statement in I Corinthians 6:10 that railers would not enter the Kingdom of Heaven. (The Greek word translated “reviler” is the same one that is used for “railer” in I Corinthians 5:11.)

• A Drunkard

A drunkard is one who is addicted to intoxicating beverages. The Greek word literally means “tipsy” or “one who has lost control.”

Thus, anyone who uses substances which destroy his reasoning faculties would be in the class of a drunkard. When a person loses control of his mental faculties, he is prone to say and do things which are hurtful to himself and to others.

• An Extortioner

The Greek word for “extortioner” describes one who has a rapacious, ravening desire. An extortioner is one who seizes, plunders, or carries away by force through robbery or swindling.

An extortioner preys upon weaker people such as the widow and fatherless and, by calculated deception, takes away their belongings. God’s wrath is particularly harsh against such evil works.

HOW TO RESPOND TO A FALLEN BROTHER

• Pray for a spirit of repentance.

Scripture instructs us to pray “. . . with all perseverance and supplication for all saints” (Ephesians 6:18). We are all members of one Body, and when one member sins, it affects the entire Body.

• Try to restore him.

The Scriptural response to a fallen brother is presented in Galatians 6:1–2: “*Brethren, if a man be overtaken in a fault, ye which are spiritual, restore such an one in the spirit of meekness; considering thyself, lest thou also be tempted.*”

Restoration can be accomplished only by a mature Christian who himself is living in victory and can help the fallen brother identify and reclaim “ground” that was given to Satan.

• Avoid argumentation.

Sin is usually justified in the minds of those who commit it. Thus, because they have rationalized their sin, they will tend to argue with one who confronts them.

“. . . The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, In meekness instructing those who oppose themselves; if God peradventure will give them repentance to the acknowledging of

minds, it certainly could not be considered of any real or practical value.

From his early years, Hegel pursued the study of theology. Convinced that his son should become a clergyman, Hegel's father agreed to mortgage his property in order to have the necessary funds to support his son's education for the ministry.

Upon receiving his degree in 1793, however, Hegel decided that he did not want to enter the ministry and chose rather to seek ways to teach his destructive philosophy to others.

Hegel became known as the first to write a philosophy of religion. He came to believe that any religion is good as long as it promotes human morality. This is what he said in his *Popular Religion and Christianity*:

“. . . The aim and essence of all true religion, our religion included, is human morality. All means of propagating them, and all its obligations . . . have their worth and their sanctity appraised according to their close or distant connection.”

By mixing a polluted form of Christianity with the filth of his corrupt mind, Hegel proposed the idea of *philosophical evolution*. Philosophical evolution contends that man and the world in which he lives is getting better and better. The goal of philosophical evolution is to create a utopia. Years later, this false teaching became the basis for Charles Darwin's theory of evolution.

IN RELIGION . . .

Man creates a god after the likeness of his fallen human intellect. The end result of religion is that man becomes his own god and establishes his own rules of conduct.

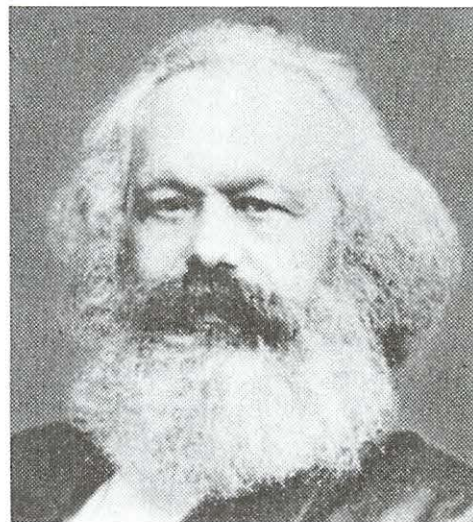
IN CHRISTIANITY . . .

God created man in His own perfect likeness. The end result of Christianity is that the unchangeable God is worshiped and His moral laws are obeyed.

Hegel believed that only the State could bring about this utopia. War, in his opinion, was essential for the preservation of society. In his view, war makes for “the ethical health of peoples corrupted by long periods of peace, as the blowing of the sea preserves the sea from the foulness which would be the result of a prolonged calm.”

2 How humanistic reasoning became the foundation for a world philosophy

The son of a wealthy lawyer and landlord, Karl Marx was spoiled from the time he was a child. As a young man, Karl went to school at the University of Bonn (Germany). Although he was a bright and enthusiastic student, his professors and classmates soon discovered Karl's primary interest was in having a “good time.”



Brown Bros.

Karl Marx
1818–1883

Karl's father learned of his foolish ways and attempted to force Karl to become a more serious student by transferring him to the University of Berlin. This move, however, did little to correct the poor study habits and rowdy behavior of his son.

Although Karl continued in his foolishness and ran up sizable debts, which his father paid for him, he did become interested in the study of law and seemed to enjoy attending the lectures.

One of Karl's favorite lecturers was Eduard Gans, professor of criminology. Professor Gans was a favorite disciple of Hegel, and the professor saw to it that Hegel's philosophies were flourishing, even after his death.

damage within the Body of Christ. Therefore, mature leaders in the church must quickly and wisely respond to him.

- **He is to be instructed.**

A factious Christian is often sincere in his efforts to correct things which he sees are wrong. He needs to be given wise instruction which will help him see not only the balance of Scriptural truths but also how damaging his factious spirit is within the Body of Christ.

Such instruction is to be given to him by one who is qualified to do it. This is the teaching of II Timothy 2:24-26: “. . . *The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, **In meekness instructing those that oppose themselves;***

“If God peradventure will give them repentance to the acknowledging of the truth; And that they may recover themselves out of the snare of the devil, who are taken captive by him at his will.”

- **He is to be warned.**

If a factious Christian rejects the instruction that was given to him, he should be lovingly but firmly warned. He should be told that he is sowing discord among the brethren and that this is not only contrary to the teaching and spirit of Christ but an abomination to the Lord, according to Proverbs 6:16-19.

It should be brought to the attention of the factious Christian that because he has rejected the instruction of church leaders, he is guilty of being unruly and out from under the protection of God-given authority.

This warning is prescribed in I Thessalonians 5:14: “*Now we exhort you, brethren, **warn them that are unruly.*** . . .”

- **He is to be avoided.**

When a factious Christian rejects both instruction and warning, he is to be avoided, according to the instruction of Romans 16:17-18.

*“Now I beseech you, brethren, **mark them which cause divisions and offenses contrary to the doctrine which ye have learned; and avoid them.***

“For they that are such serve not our Lord Jesus Christ, but their own belly; and by good words and fair speeches deceive the hearts of the simple.”

If various cliques form within the church, we are not to identify with any one of them. Such identification would be a clear mark of carnality, according to I Corinthians 3:3-9: “*For ye are yet carnal: for whereas there is among you **envying, and strife, and divisions,** are ye not carnal, and walk as men? . . .*”

Why does God allow factious Christians to be in the church?

God has a purpose for factious Christians. They expose pride in those who are factious and reveal the spirituality of the leaders whom God uses to bring about reconciliation.

God reveals leadership in a church by allowing a wise, mature Christian to bring harmony between sincere Christians who are on opposite sides of a controversy.

“For there must be also heresies [factions] among you, that they which are approved may be made manifest among you” (I Corinthians 11:19).

HOW TO RECOGNIZE FACTIOUS CHRISTIANS

It is important to recognize the beginnings of factions and to be aware of the damage they can cause within a larger group.

Levels of Factions:

- **Cliques**

A clique is a narrow, exclusive group of people who are held together by an identity of common interests and ideas.

- **Seditions**

A sedition is a clique which encourages resistance to or rejection of God-given authority.

- **Schisms**

A schism is a seditious clique which formally separates from a church body after a period of

discord, disharmony, argumentation, and bitter wrangling.

2 Fallen Brethren

A fallen brother is a Christian who has been overtaken by a sin. He is not a false prophet and should not be rejected as one. Instead he should be restored by those who are spiritually mature.

HOW A CHRISTIAN FALLS

A Christian does not normally fall all at once. Usually a slow process of spiritual defeat takes place within a believer, so when a test comes, he is unable to withstand it.



A mighty oak tree can withstand violent storms unless the core of the tree has been eaten away by invading parasites.

- **A believer begins to fall when he entertains an evil thought.**

The battleground between God and Satan is the human mind. When a Christian allows an evil thought to stay in his mind, he provides “ground” for Satan to bring a temptation.

“Every man is tempted, when he is drawn away of his own lust, and enticed” (James 1:14).

- **Surrendered ground allows Satan to build strongholds.**

Sinful thoughts give Satan the freedom to construct a fortress of evil in the mind of the

believer. From this stronghold, Satan has a distinct advantage over the mind, will, and emotions of the Christian.

He can, in fact, take the Christian captive at his will. (See II Timothy 2:26.)

- **Strongholds bring defeat.**

Once he has control of the mind, will, and emotions of the believer, Satan can easily arrange a temptation which will overpower the Christian.

Unfortunately, many Christians repent of the sin but never reclaim the “ground” that was given to Satan or cast down the strongholds he has built. Consequently, they try to live a victorious Christian life but repeatedly experience defeat.

Symptoms of a fallen brother:

- He will judge others for the very things of which he himself is guilty.
- He will cut off fellowship with Godly Christians and identify with those who are experiencing similar defeats in their lives.
- He will react to Godly standards and disciplines by claiming that they are legalistic.
- He will enjoy darkness and demonstrate the symptoms of guilt.
- He will misinterpret or misapply Scripture in an attempt to justify his sin.

Types of fallen brethren:

There are six classifications of fallen brethren listed in I Corinthians 5:11.

“But now I have written unto you not to keep company, if any man that is called a brother be:

- *a fornicator*
- *covetous*
- *an idolater*
- *a railer*
- *a drunkard*
- *an extortioner;*

with such an one no not to eat.”

Because we are instructed not to eat with these types of fallen brethren, it is important to identify each one precisely.

• A Fornicator

A fornicator is one who commits immoral acts with another person. The word is generally used of illicit sexual relationships before marriage but can also include extramarital relationships.

The Greek word for “fornication” is πόρνος (POR-noss), from which we get the term *pornography*. A fornicator is also defined as a *whoremonger*. The word *monger* refers to one who trades in a commodity. Thus, a Christian who buys or sells pornography would be classified as a *whoremonger*.

• A Coveter

A covetous person is one who has an inordinate desire for wealth or possessions or for that which belongs to another person.

One who covets is guilty of breaking the Tenth Commandment, which states, “*Thou shalt not covet thy neighbour’s house, thou shalt not covet thy neighbour’s wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is thy neighbour’s*” (Exodus 20:17).

The Greek word for “covetousness” means “holding, yet desiring more; greedy of gain.”

A covetous person concentrates his priorities on material things and is willing to sacrifice relationships and principles to gain them.

• An Idolater

An idolater is one who expects from things or people what only God can give. Thus, covetousness is equated in Scripture with idolatry. (See Colossians 3:5.)

An idolater is also one who has things in his home or life which have been used in occult worship, such as statues of foreign gods. Paul points out that the statues are harmless in themselves but that demons are connected with them. (See I Corinthians 10:19–20.)

• A Railer

A railer is one who uses bitter, harsh, or abusive words in his dealings with others. Having an angry spirit, he slanders the name of a person and works at character assassination.

Peter warned not to return railing for railing, but rather blessing. Paul made the bold statement in I Corinthians 6:10 that railers would not enter the Kingdom of Heaven. (The Greek word translated “reviler” is the same one that is used for “railer” in I Corinthians 5:11.)

• A Drunkard

A drunkard is one who is addicted to intoxicating beverages. The Greek word literally means “tipsy” or “one who has lost control.”

Thus, anyone who uses substances which destroy his reasoning faculties would be in the class of a drunkard. When a person loses control of his mental faculties, he is prone to say and do things which are hurtful to himself and to others.

• An Extortioner

The Greek word for “extortioner” describes one who has a rapacious, ravening desire. An extortioner is one who seizes, plunders, or carries away by force through robbery or swindling.

An extortioner preys upon weaker people such as the widow and fatherless and, by calculated deception, takes away their belongings. God’s wrath is particularly harsh against such evil works.

HOW TO RESPOND TO A FALLEN BROTHER

• Pray for a spirit of repentance.

Scripture instructs us to pray “. . . with all perseverance and supplication for all saints” (Ephesians 6:18). We are all members of one Body, and when one member sins, it affects the entire Body.

• Try to restore him.

The Scriptural response to a fallen brother is presented in Galatians 6:1–2: “*Brethren, if a man be overtaken in a fault, ye which are spiritual, restore such an one in the spirit of meekness; considering thyself, lest thou also be tempted.*”

Restoration can be accomplished only by a mature Christian who himself is living in victory and can help the fallen brother identify and reclaim “ground” that was given to Satan.

• Avoid argumentation.

Sin is usually justified in the minds of those who commit it. Thus, because they have rationalized their sin, they will tend to argue with one who confronts them.

“. . . The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, In meekness instructing those who oppose themselves; if God peradventure will give them repentance to the acknowledging of

minds, it certainly could not be considered of any real or practical value.

From his early years, Hegel pursued the study of theology. Convinced that his son should become a clergyman, Hegel's father agreed to mortgage his property in order to have the necessary funds to support his son's education for the ministry.

Upon receiving his degree in 1793, however, Hegel decided that he did not want to enter the ministry and chose rather to seek ways to teach his destructive philosophy to others.

Hegel became known as the first to write a philosophy of religion. He came to believe that any religion is good as long as it promotes human morality. This is what he said in his *Popular Religion and Christianity*:

“. . . The aim and essence of all true religion, our religion included, is human morality. All means of propagating them, and all its obligations . . . have their worth and their sanctity appraised according to their close or distant connection.”

By mixing a polluted form of Christianity with the filth of his corrupt mind, Hegel proposed the idea of *philosophical evolution*. Philosophical evolution contends that man and the world in which he lives is getting better and better. The goal of philosophical evolution is to create a utopia. Years later, this false teaching became the basis for Charles Darwin's theory of evolution.

IN RELIGION . . .

Man creates a god after the likeness of his fallen human intellect. The end result of religion is that man becomes his own god and establishes his own rules of conduct.

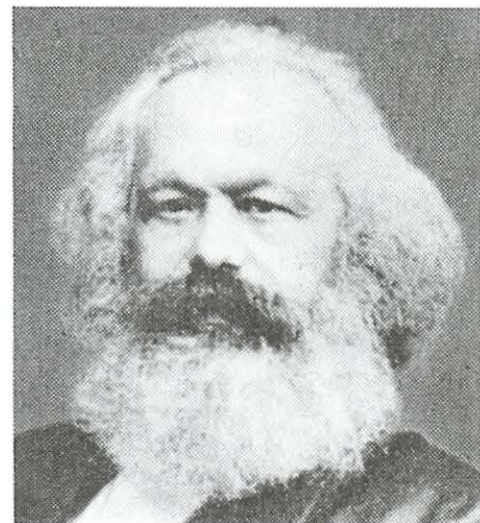
IN CHRISTIANITY . . .

God created man in His own perfect likeness. The end result of Christianity is that the unchangeable God is worshiped and His moral laws are obeyed.

Hegel believed that only the State could bring about this utopia. War, in his opinion, was essential for the preservation of society. In his view, war makes for “the ethical health of peoples corrupted by long periods of peace, as the blowing of the sea preserves the sea from the foulness which would be the result of a prolonged calm.”

2 How humanistic reasoning became the foundation for a world philosophy

The son of a wealthy lawyer and landlord, Karl Marx was spoiled from the time he was a child. As a young man, Karl went to school at the University of Bonn (Germany). Although he was a bright and enthusiastic student, his professors and classmates soon discovered Karl's primary interest was in having a “good time.”



Brown Bros.

Karl Marx
1818–1883

Karl's father learned of his foolish ways and attempted to force Karl to become a more serious student by transferring him to the University of Berlin. This move, however, did little to correct the poor study habits and rowdy behavior of his son.

Although Karl continued in his foolishness and ran up sizable debts, which his father paid for him, he did become interested in the study of law and seemed to enjoy attending the lectures.

One of Karl's favorite lecturers was Eduard Gans, professor of criminology. Professor Gans was a favorite disciple of Hegel, and the professor saw to it that Hegel's philosophies were flourishing, even after his death.

damage within the Body of Christ. Therefore, mature leaders in the church must quickly and wisely respond to him.

- **He is to be instructed.**

A factious Christian is often sincere in his efforts to correct things which he sees are wrong. He needs to be given wise instruction which will help him see not only the balance of Scriptural truths but also how damaging his factious spirit is within the Body of Christ.

Such instruction is to be given to him by one who is qualified to do it. This is the teaching of II Timothy 2:24-26: “. . . *The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, **In meekness instructing those that oppose themselves;***

“If God peradventure will give them repentance to the acknowledging of the truth; And that they may recover themselves out of the snare of the devil, who are taken captive by him at his will.”

- **He is to be warned.**

If a factious Christian rejects the instruction that was given to him, he should be lovingly but firmly warned. He should be told that he is sowing discord among the brethren and that this is not only contrary to the teaching and spirit of Christ but an abomination to the Lord, according to Proverbs 6:16-19.

It should be brought to the attention of the factious Christian that because he has rejected the instruction of church leaders, he is guilty of being unruly and out from under the protection of God-given authority.

This warning is prescribed in I Thessalonians 5:14: “*Now we exhort you, brethren, **warn them that are unruly.*** . . .”

- **He is to be avoided.**

When a factious Christian rejects both instruction and warning, he is to be avoided, according to the instruction of Romans 16:17-18.

*“Now I beseech you, brethren, **mark them which cause divisions and offenses contrary to the doctrine which ye have learned; and avoid them.***

“For they that are such serve not our Lord Jesus Christ, but their own belly; and by good words and fair speeches deceive the hearts of the simple.”

If various cliques form within the church, we are not to identify with any one of them. Such identification would be a clear mark of carnality, according to I Corinthians 3:3-9: “*For ye are yet carnal: for whereas there is among you **envying, and strife, and divisions, are ye not carnal, and walk as men?*** . . .”

Why does God allow factious Christians to be in the church?

God has a purpose for factious Christians. They expose pride in those who are factious and reveal the spirituality of the leaders whom God uses to bring about reconciliation.

God reveals leadership in a church by allowing a wise, mature Christian to bring harmony between sincere Christians who are on opposite sides of a controversy.

“For there must be also heresies [factions] among you, that they which are approved may be made manifest among you” (I Corinthians 11:19).

HOW TO RECOGNIZE FACTIOUS CHRISTIANS

It is important to recognize the beginnings of factions and to be aware of the damage they can cause within a larger group.

Levels of Factions:

- **Cliques**

A clique is a narrow, exclusive group of people who are held together by an identity of common interests and ideas.

- **Seditions**

A sedition is a clique which encourages resistance to or rejection of God-given authority.

- **Schisms**

A schism is a seditious clique which formally separates from a church body after a period of

discord, disharmony, argumentation, and bitter wrangling.

2 Fallen Brethren

A fallen brother is a Christian who has been overtaken by a sin. He is not a false prophet and should not be rejected as one. Instead he should be restored by those who are spiritually mature.

HOW A CHRISTIAN FALLS

A Christian does not normally fall all at once. Usually a slow process of spiritual defeat takes place within a believer, so when a test comes, he is unable to withstand it.



A mighty oak tree can withstand violent storms unless the core of the tree has been eaten away by invading parasites.

- **A believer begins to fall when he entertains an evil thought.**

The battleground between God and Satan is the human mind. When a Christian allows an evil thought to stay in his mind, he provides “ground” for Satan to bring a temptation.

“Every man is tempted, when he is drawn away of his own lust, and enticed” (James 1:14).

- **Surrendered ground allows Satan to build strongholds.**

Sinful thoughts give Satan the freedom to construct a fortress of evil in the mind of the

believer. From this stronghold, Satan has a distinct advantage over the mind, will, and emotions of the Christian.

He can, in fact, take the Christian captive at his will. (See II Timothy 2:26.)

- **Strongholds bring defeat.**

Once he has control of the mind, will, and emotions of the believer, Satan can easily arrange a temptation which will overpower the Christian.

Unfortunately, many Christians repent of the sin but never reclaim the “ground” that was given to Satan or cast down the strongholds he has built. Consequently, they try to live a victorious Christian life but repeatedly experience defeat.

Symptoms of a fallen brother:

- He will judge others for the very things of which he himself is guilty.
- He will cut off fellowship with Godly Christians and identify with those who are experiencing similar defeats in their lives.
- He will react to Godly standards and disciplines by claiming that they are legalistic.
- He will enjoy darkness and demonstrate the symptoms of guilt.
- He will misinterpret or misapply Scripture in an attempt to justify his sin.

Types of fallen brethren:

There are six classifications of fallen brethren listed in I Corinthians 5:11.

“But now I have written unto you not to keep company, if any man that is called a brother be:

- *a fornicator*
- *covetous*
- *an idolater*
- *a railer*
- *a drunkard*
- *an extortioner;*

with such an one no not to eat.”

Because we are instructed not to eat with these types of fallen brethren, it is important to identify each one precisely.

• A Fornicator

A fornicator is one who commits immoral acts with another person. The word is generally used of illicit sexual relationships before marriage but can also include extramarital relationships.

The Greek word for “fornication” is πόρνος (POR-noss), from which we get the term *pornography*. A fornicator is also defined as a *whore-monger*. The word *monger* refers to one who trades in a commodity. Thus, a Christian who buys or sells pornography would be classified as a *whoremonger*.

• A Coveter

A covetous person is one who has an inordinate desire for wealth or possessions or for that which belongs to another person.

One who covets is guilty of breaking the Tenth Commandment, which states, “*Thou shalt not covet thy neighbour’s house, thou shalt not covet thy neighbour’s wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is thy neighbour’s*” (Exodus 20:17).

The Greek word for “covetousness” means “holding, yet desiring more; greedy of gain.”

A covetous person concentrates his priorities on material things and is willing to sacrifice relationships and principles to gain them.

• An Idolater

An idolater is one who expects from things or people what only God can give. Thus, covetousness is equated in Scripture with idolatry. (See Colossians 3:5.)

An idolater is also one who has things in his home or life which have been used in occult worship, such as statues of foreign gods. Paul points out that the statues are harmless in themselves but that demons are connected with them. (See I Corinthians 10:19–20.)

• A Railer

A railer is one who uses bitter, harsh, or abusive words in his dealings with others. Having an angry spirit, he slanders the name of a person and works at character assassination.

Peter warned not to return railing for railing, but rather blessing. Paul made the bold statement in I Corinthians 6:10 that railers would not enter the Kingdom of Heaven. (The Greek word translated “reviler” is the same one that is used for “railer” in I Corinthians 5:11.)

• A Drunkard

A drunkard is one who is addicted to intoxicating beverages. The Greek word literally means “tipsy” or “one who has lost control.”

Thus, anyone who uses substances which destroy his reasoning faculties would be in the class of a drunkard. When a person loses control of his mental faculties, he is prone to say and do things which are hurtful to himself and to others.

• An Extortioner

The Greek word for “extortioner” describes one who has a rapacious, ravaging desire. An extortioner is one who seizes, plunders, or carries away by force through robbery or swindling.

An extortioner preys upon weaker people such as the widow and fatherless and, by calculated deception, takes away their belongings. God’s wrath is particularly harsh against such evil works.

HOW TO RESPOND TO A FALLEN BROTHER

• Pray for a spirit of repentance.

Scripture instructs us to pray “. . . with all perseverance and supplication for all saints” (Ephesians 6:18). We are all members of one Body, and when one member sins, it affects the entire Body.

• Try to restore him.

The Scriptural response to a fallen brother is presented in Galatians 6:1–2: “*Brethren, if a man be overtaken in a fault, ye which are spiritual, restore such an one in the spirit of meekness; considering thyself, lest thou also be tempted.*”

Restoration can be accomplished only by a mature Christian who himself is living in victory and can help the fallen brother identify and reclaim “ground” that was given to Satan.

• Avoid argumentation.

Sin is usually justified in the minds of those who commit it. Thus, because they have rationalized their sin, they will tend to argue with one who confronts them.

“*. . . The servant of the Lord must not strive; but be gentle unto all men, apt to teach, patient, In meekness instructing those who oppose themselves; if God peradventure will give them repentance to the acknowledging of*

the truth; And that they may recover themselves out of the snare of the devil, who are taken captive by him at his will" (II Timothy 2:24–26).

- **Separate those who reject instruction.**

The purpose of separation is to speed up the process of repentance by making the sinner feel shame for his sin. Paul demonstrated this procedure with the immoral man in the Corinthian church.

The instruction to separate an unrepentant fallen brother is given in I Corinthians 5:13: “. . . Put away from among yourselves that wicked person.”

- **Restore a repentant brother.**

The fact that Paul had to instruct the Christians to restore the repentant fallen brother is significant. The tendency of most Christians is to cut off and forget about those who sinned.

After separation, the fallen brother came to deep sorrow over his sin and was then restored to fellowship. (See II Corinthians 2:5–11.)

3 False Prophets

A false prophet must be recognized for who he is and what he intends to do. He usually is beyond the factious and fallen stage and has the single goal of gathering unsuspecting believers around him in order to influence them with false teaching.

His doctrinal error is usually the result of immorality which he has justified. His evil ways are powerfully detailed in II Peter 2, Titus 1, and Jude 4–16.

These passages identify three characteristics that are basic to false prophets:

- Rebellion against authority
- Covetousness and greed
- Immorality

The difference between factious Christians, fallen brethren, and false prophets is one of degrees and motives. The factious Christian tries to correct what he believes to be error. The fallen brother tries to justify his own error.

The false prophet is hardened against the truth. Therefore, he has been sent strong

delusion and has believed the lie. (See II Thessalonians 2:11.)

There is serious question as to whether the false prophet is even a Christian, based on such passages as Matthew 12:31–37 and the book of Jude.

HOW TO RESPOND TO A FALSE PROPHET

The following passages clearly warn that a false prophet should not be given any opportunity to teach his error.

- **Do not receive or encourage him.**

The Apostle John warned the early believers that “. . . many deceivers are entered into the world . . .” (II John 7). For the believers’ protection, they were instructed, “If there come any unto you, and bring not this doctrine, receive him not into your house, neither bid him God speed: For he that biddeth him God speed is partaker of his evil deeds” (II John 10–11).

This directive would rule out any contribution to a false teacher and his program.

- **Sharply rebuke him.**

If a deceiver succeeds in becoming a part of the church body and begins to spread his false teaching, he must be sharply rebuked by the leadership: “Whose mouths must be stopped, who subvert whole houses, teaching things which they ought not, for filthy lucre’s sake. . . . Wherefore rebuke them sharply . . .” (Titus 1:11, 13).

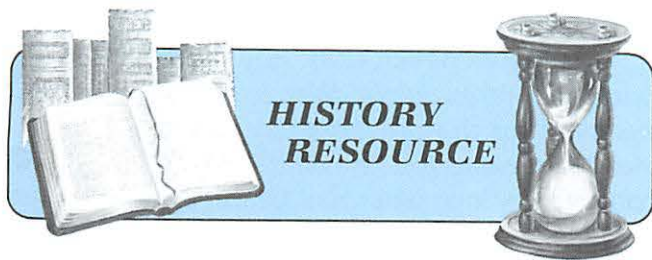
PROJECT

Many churches have experienced painful division within the church body. The members who have gone through such an event can usually recall the details with vivid clarity.

Do a study of a church split by interviewing members, and determine whether it was caused by a factious Christian, a fallen brother, or a false prophet.

Evaluate the steps which were taken to deal with the problem. See if the split could have been avoided if Biblical steps had been followed quickly. Discuss this project beforehand with the pastor for his approval.

Date completed _____ Evaluation _____



HOW A FALSE PROPHET UNLEASHED A "WOLF" WHO DEVoured MILLIONS OF PEOPLE



Bettmann Newsphotos/Wide World

Adolf means "wolf." In his youth, Adolf Hitler earned the nickname "Wolf" because of his defiance of authority. His ruthless appetite for power resulted in the deaths of more than sixteen million military men and the extermination of six million Jews and untold millions of other victims.

The second World War killed more people and caused more devastation than any other war in history. The actual number of people killed, wounded, or missing can only be estimated.

From September 1939, when Hitler attacked Poland, to September 1945, when the war ended, more than ten million Allied servicemen and nearly six million military men from the Axis powers died.

Additional millions of civilians were killed as fifty nations took part in this world-wide devastation.

After the war, gruesome accounts of torture and bloodshed exposed a mind that was twisted and distorted with one perverted objective: to develop a master race which would bring about a utopia devoid of God and the teachings of God's Word.

Actually, the story of Adolf Hitler has its roots in the false teaching of a theologian who lived many years earlier. It was the writings of Georg W. F. Hegel that sowed the seeds of destruction in the life of Adolf Hitler.

1 *How humanistic reasoning corrupted the mind of a seminary student*

The usual laughter and frivolity of the students in the university dormitory was replaced with the quiet rustle of lecture notes and the scratching of quill pens.

This night was different from most nights at the small German state school of theology.

The following day, final examinations would reveal how much information these students had assimilated during the previous months of teaching.



Bettmann Archive

**Georg W. F. Hegel
1770–1831**

The quietness of the evening was suddenly interrupted as the dormitory door burst open and a drunken student staggered clumsily down the hall and, with much racket, made his way to his room.

Without even looking up from his books, one of the students chided, "Oh, Hegel, you'll drink away what little intelligence you have."

The next day, however, this twenty-year-old student named Georg Wilhelm Friedrich Hegel somehow passed the exams and remained in the seminary to imbibe more liquor and humanistic philosophies.

One of the philosophers who had particular influence on young Hegel's mind was Immanuel Kant. Both Kant and Hegel viewed the world with their human intellect and believed that rational thinking was the highest goal in theology.

The famous words in Georg Hegel's *Philosophy of Law* express this idea: "Whatever is rational is real, and whatever is real is rational."

This subtle statement sounded harmless enough to the intellectuals of Hegel's day. Deifying their own intellects, they believed the lie that if they could not understand something with their

minds, it certainly could not be considered of any real or practical value.

From his early years, Hegel pursued the study of theology. Convinced that his son should become a clergyman, Hegel's father agreed to mortgage his property in order to have the necessary funds to support his son's education for the ministry.

Upon receiving his degree in 1793, however, Hegel decided that he did not want to enter the ministry and chose rather to seek ways to teach his destructive philosophy to others.

Hegel became known as the first to write a philosophy of religion. He came to believe that any religion is good as long as it promotes human morality. This is what he said in his *Popular Religion and Christianity*:

“ . . . The aim and essence of all true religion, our religion included, is human morality. All means of propagating them, and all its obligations . . . have their worth and their sanctity appraised according to their close or distant connection.”

By mixing a polluted form of Christianity with the filth of his corrupt mind, Hegel proposed the idea of *philosophical evolution*. Philosophical evolution contends that man and the world in which he lives is getting better and better. The goal of philosophical evolution is to create a utopia. Years later, this false teaching became the basis for Charles Darwin's theory of evolution.

IN RELIGION . . .

Man creates a god after the likeness of his fallen human intellect. The end result of religion is that man becomes his own god and establishes his own rules of conduct.

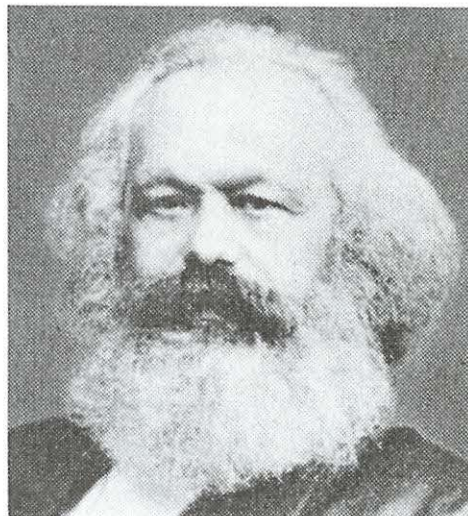
IN CHRISTIANITY . . .

God created man in His own perfect likeness. The end result of Christianity is that the unchangeable God is worshiped and His moral laws are obeyed.

Hegel believed that only the State could bring about this utopia. War, in his opinion, was essential for the preservation of society. In his view, war makes for “the ethical health of peoples corrupted by long periods of peace, as the blowing of the sea preserves the sea from the foulness which would be the result of a prolonged calm.”

2 How humanistic reasoning became the foundation for a world philosophy

The son of a wealthy lawyer and landlord, Karl Marx was spoiled from the time he was a child. As a young man, Karl went to school at the University of Bonn (Germany). Although he was a bright and enthusiastic student, his professors and classmates soon discovered Karl's primary interest was in having a “good time.”



Brown Bros.

Karl Marx
1818–1883

Karl's father learned of his foolish ways and attempted to force Karl to become a more serious student by transferring him to the University of Berlin. This move, however, did little to correct the poor study habits and rowdy behavior of his son.

Although Karl continued in his foolishness and ran up sizable debts, which his father paid for him, he did become interested in the study of law and seemed to enjoy attending the lectures.

One of Karl's favorite lecturers was Eduard Gans, professor of criminology. Professor Gans was a favorite disciple of Hegel, and the professor saw to it that Hegel's philosophies were flourishing, even after his death.

Karl's interest in the study of philosophy increased as he attended Professor Gans' lectures. This interest continued to the point that his father, although himself interested in philosophy, wrote Karl a letter warning him of the futility of focusing on philosophy.

Karl, however, disregarded his father's admonition, and instead for three weeks, day and night, did nothing but pore over and digest the writings of the false prophet G. W. F. Hegel.

At the end of that three-week period, the twenty-four-year-old student announced his conversion to what was known at the University of Berlin as Hegelianism. He then abandoned his study of law and became a member of the radical student organization known as the Young Hegelians.

These radical students not only followed the example of their hero by combining philosophy and religion, but they also became outspoken critics of Christianity and strongly denounced the government.

Heinrich Marx was alarmed that his son had taken this extreme turn and had abandoned his legal studies. He wrote his son letter after letter, pleading with Karl to come to reality, forsake the futureless pursuit of Hegelianism, and focus on a promising career.

Karl Marx again ignored the warnings and cautions of his father and set out to pursue Hegelianism in even greater depth.

About this time, Karl Marx met another young Hegelian whose name was Friedrich Engels. When they first met, Marx disliked Engels because he thought that Engels was a "rich capitalist."

To his amazement, Marx discovered that Engels had philosophical views almost identical to his own. He also discovered that Engels was willing to share his money to propagate these philosophical views. Thus, Marx and Engels became friends.

Engels was the only close friend that Marx had for the rest of his life. Together they coauthored the *Communist Manifesto*, in which they set forth goals for implementing Hegelian philosophies.

Constantly striving to establish Hegel's concept of utopia, Marx and Engels envisioned Socialism as a means to evolve the world into perfection and equality.

Their theories of Socialism focused on man's ability to raise himself to perfection. Their humanistic concepts completely left out God and instead raised man to the level of God.

Thus, their philosophy was built around "the lie" that Adam and Eve accepted when they disobeyed God—the idea that they could be equal with God. This fact is seen in the following poem that Karl Marx wrote about himself:

*Then I will wander godlike and victorious
Throughout the ruins of the world
And, giving my words an active force,
I will feel equal to the creator.*

Marx's life is a tragic illustration of one "who changed the truth of God into a lie, and worshipped and served the creature more than the Creator . . ." (Romans 1:25).

Karl Marx viewed the Jewish race as a hindrance to society. What is most significant is that Marx himself was at least partly Jewish and, in fact, came from a long line of rabbis. However, because he did not accept this God-given unchangeable feature of his heritage, he always referred to Jews in the third person.

One of Marx's friends said of him: "If his heart had matched his intellect, and if he possessed as much love as hate, I would have gone through fire for him," but "a most dangerous personal ambition has eaten away all good in him."

Marx neglected his responsibilities to his wife and children and spent his days studying economics and writing manuscripts. His irresponsibility is seen



Vladimir Lenin
1870–1924

in the fact that out of his six children, three died of starvation and two committed suicide.



Joseph Stalin
1879–1953

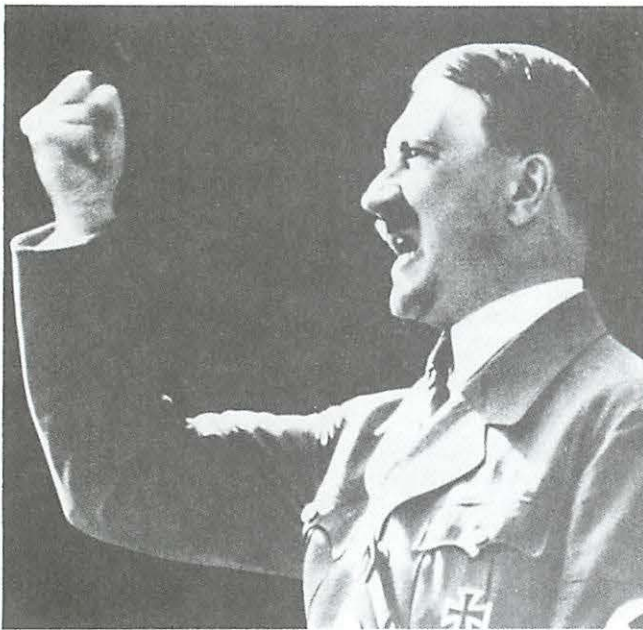
Vladimir Lenin and Joseph Stalin built their destructive empire upon the teachings of Marx—and the bodies of any who dared to oppose them.

Marx himself died a drunkard at the age of sixty-five. His funeral was attended by a handful of people.

In 1917, a Russian named Vladimir Lenin used the Marxist philosophy with its goals in overthrowing Czar Nicholas II (in the Bolshevik Revolution). Thus, as a result of Marx's false teachings, thousands of Russians were brutally persecuted and murdered.

However, the vile teaching did not end its destructive course with these atrocities. It was on the basis of Marx's philosophical goals that Joseph Stalin instigated one of the most brutal and bloody episodes in history.

3 *How humanistic reasoning resulted in the deaths of millions*



Frenzied rebellion to anything that resembled authority was characteristic of Hitler's entire life. He raised his fist in defiance of the God Who made him by systematically seeking to destroy any power greater than himself.

Because he adamantly refused to submit to the direction of his father, Adolf Hitler was nicknamed "Wolf" from his youth. Living up to his nickname, his entire life was marked by defiance to every authority.

Years after his father had suggested that he consider a vocation of service to others, he wrote: "I did not want to become a civil servant, no, and again no. All attempts on my father's part to

inspire me with love or pleasure in this profession by stories from his own life accomplished the exact opposite.

"I . . . grew sick to my stomach at the thought of sitting in an office, deprived of my liberty; ceasing to be master of my own time and being compelled to force the content of my whole life into paper forms that had to be filled out. . . .

"One day it became clear to me that I would become a painter, an artist. . . . My father was struck speechless.

" 'Painter? Artist?'

"He doubted my sanity, or perhaps he thought he had heard wrong or misunderstood me. But when he was clear on the subject, and particularly after he felt the seriousness of my intention, he opposed it with all the determination of his nature. . . .

" 'Artist! No! Never as long as I live!' . . . My father would never depart from his 'Never!' And I intensified my 'Nevertheless!' "

THE "FRUIT" OF FALSE PROPHETS

Georg Hegel (1770–1831)

He held to the belief that war is a great purifier and thus necessary in the preservation of a society.

Friedrich Nietzsche (1844–1900)

He believed that "to judge morality properly, it must be replaced by two concepts borrowed from zoology: the taming of a beast and the breeding of a specific species."

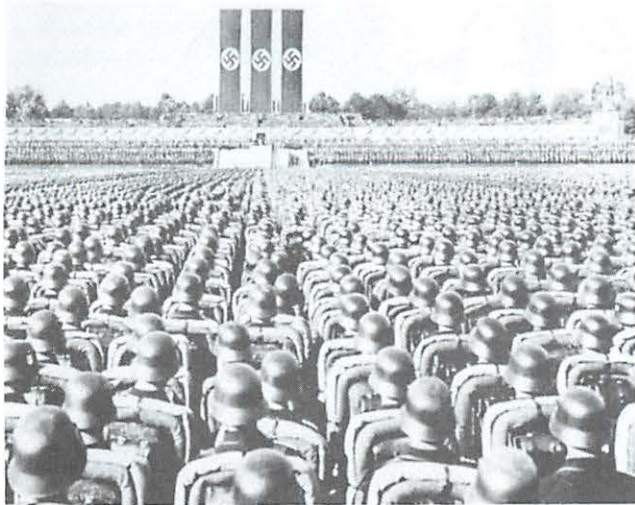
Adolf Hitler (1889–1945)

He carried out the false teachings of Hegel and Nietzsche by slaughtering six million Jews. He "justified" these atrocities as necessary steps for the coming utopia.

Of his school experiences, the rebel wrote, "When I recall my teachers at school, I realize that half of them were abnormal. . . . We pupils of old

Austria were brought to respect old people and women. But of our professors we had no mercy; they were our natural enemies. The majority of them were somewhat mentally deranged, and quite a few ended their days as . . . lunatics!

"I was in particular bad odor with the teachers. I showed not the slightest aptitude for foreign languages—though I might have, had not the teacher been a congenital idiot. I could not bear the sight of him."



Hitler used mass demonstrations of power to steal the confidence of the German people. In accordance with the despicable philosophy of Hegel and Marx, Hitler told the citizens of Germany, "Conquest is not only a right, but a duty."

The insubordination and rebellion to authority in this "Wolf's" life grew until, at the age of forty-four, he led two thousand men armed with machine guns and rifles in an attempt to take a number of public officials hostage and in this way overthrow the government.

For this treasonous act, Hitler was sentenced to five years in prison. However, because of public support, he was released after serving only nine months. During those nine months, two significant things happened.

First, he was exposed to the writings and philosophies of Georg Hegel, which influenced his goals and direction for his life.

The second result of his time in prison was a book which summarized his resistance to authority. He appropriately entitled his book *Mein Kampf* [My Struggle]. As a result of reading this book, many others also became discontent.

When he was released from prison, the philosophies of Hegel renewed Hitler's motivation to attempt to overthrow the government. This time, he was successful.

Thus, the drive of Adolf Hitler's life matched the meaning of his name. *Hitler* means "leader of the salt workers or common man." Hitler later gained Germany's allegiance and held the free world in terror with his bloody and pitiless reign.

Hegel's doctrines of rationalism and philosophical evolution ingrained into Adolf Hitler the one fatal belief necessary for him to initiate the Holocaust. He believed that the desired goal, a utopian society, justified whatever atrocities it took to reach it.

THE "FRUIT" OF FALSE PROPHETS

Georg Hegel (1770–1831)

He believed Christianity was a means to *understand* life but was not necessary for life.

Karl Marx (1818–1883)

He believed that Christianity and other religions are illusions and often harmful, but that one should be free to believe what he chooses.

Adolf Hitler (1889–1945)

He attempted to annihilate all religions that did not support his regime and the false philosophies it represented.

The preservation of the State, another Hegelian idea which he embraced, was Hitler's ultimate goal. He purposed to mold every aspect of society to it, including the family, education, and even the churches.

At the beginning of his dictatorship, Hitler did not oppose religion, as long as the Church did not pose a threat to the moral feelings which he was propagating to the Germans.

When the Church *did* become a threat, Hitler introduced a new type of religion which he termed "Positive Christianity." The propaganda of "Positive Christianity" had a thirty-point plan for the churches of Germany, including the following:

- “The National Reich Church of Germany categorically claims the exclusive right and the exclusive power to control all churches within the borders of the Reich: It declares these to be national churches of the German Reich. . . .
- “The National Church is determined to exterminate irrevocably . . . the strange and foreign Christian faiths imported in Germany. . . .
- “The National Church has no scribes, pastors, chaplains, or priests, but National Reich orators are to speak in them.
- “The National Church demands immediate cessation of the publishing and dissemination of the Bible in Germany.
- “The National Church declares that to it, and therefore to the German nation, it has been decided that the Fuhrer’s *Mein Kampf* is the greatest of all documents. It . . . not only contains the greatest but it embodies the purest and truest ethics for the present and future life of our nation.”

Hans Kerl, Minister for Church Affairs, stated in a speech, “The party stands on the basis of Positive Christianity, and Positive Christianity is National Socialism. . . . National Socialism is the doing of God’s will. . . . God’s will reveals itself in German blood. . . . Dr. Zoellner and Count Galen have tried to make clear to me that Christianity consists in faith in Christ as the Son of God. That makes me laugh.”

He continued, “No, Christianity is not dependent upon the Apostles’ Creed. . . . True Christianity is represented by the Party and especially by the Fuhrer to a real Christianity. . . . The Fuhrer is the herald of a new revelation.”

Today, our society and even Christians are following many of the false philosophies which have produced terror, bloodshed, and heathen immorality in the past. We have failed to remember that a corrupt tree always produces corrupt fruit and that a wolf in sheep’s clothing is still a wolf.

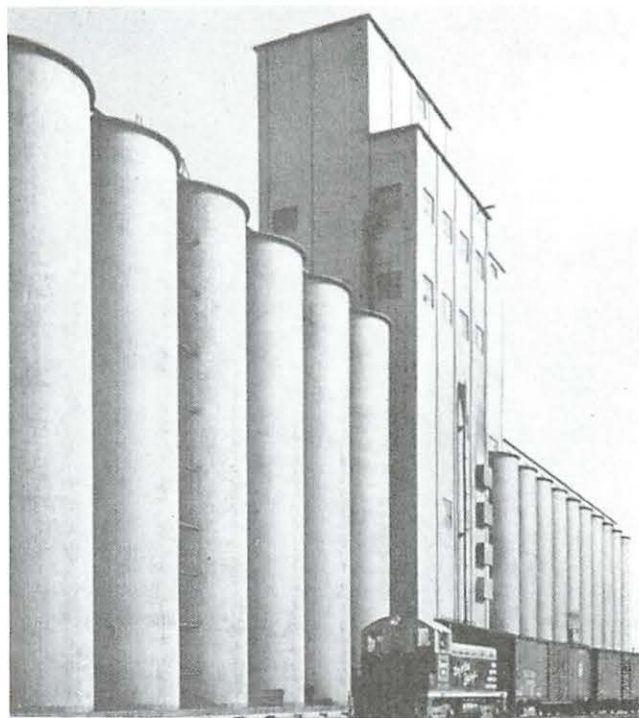
PROJECT 1

On October 15, 1990, a missionary in South Africa wrote the following report to some friends in America regarding a recent conference:

“The only flaw in the conference was an unscheduled talk Saturday night by two of our own ministers in which they urged the congregation to preach against oppression and for liberation. They ended by saying that we must include the books of Marx and Lenin in our teaching in the church.”

Had you been a missionary attending that conference, how would you have responded to these ministers? What could you say to convince the attendees that the writings of Marx and Lenin were those of false prophets and that their teachings are those of wolves in sheep’s clothing?

PROJECT 2

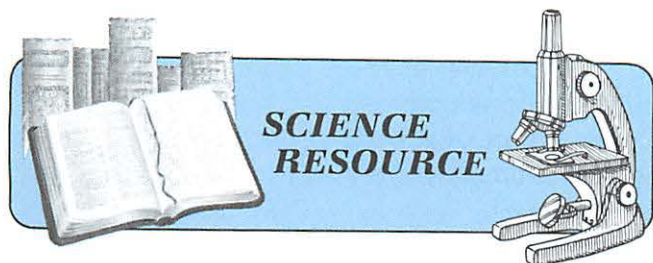


God’s Word assures us that every person *will* reap a harvest. (See Galatians 6:7–9.) False prophets reap the harvest of corruption which is promised them.

Discover how the following three principles of sowing and reaping apply to false prophets. Specifically examine the lives of Hegel, Marx, and Hitler from the perspective of these principles, and record your insights.

1. What we sow,
WE REAP IN LIKE KIND.
(See Galatians 6:7–8.)
2. What we sow,
WE REAP IN DUE SEASON.
(See Galatians 6:9.)
3. What we sow,
WE REAP IN MULTIPLIED FORM.
(See Mark 4:8.)

Date completed _____ Evaluation _____



SCIENCE RESOURCE

HOW DOES A GOOD FRUIT TREE BRING FORTH GOOD FRUIT?

WHAT IS GOOD FRUIT?



Tomatoes?



Blueberries?



Beans?



Cucumbers?



Pea Pods?



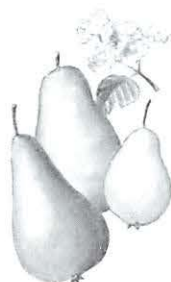
Peppers?



Chestnuts?



Cherries?



Pears?

Learning to recognize good fruit may be more difficult than it might seem. Is a tomato a fruit? What about a blueberry, a bean, a pepper, a pea pod, a cucumber, a pear, a cherry, or a chestnut? Some say they are *all* fruits. Others say only three of them are fruits.

The study of fruit is called *pomology*. This word is a combination of the Latin word *pomum*, meaning "fruit," and the Greek word *logos*, meaning "word" or "the study of."

Learn how a good tree brings forth good fruit and why a corrupt tree can bring forth only evil fruit.

"I am the vine, ye are the branches. He that abideth in me, and I in him, the same bringeth forth much fruit: for without me ye can do nothing. If a man abide not in me, he is cast forth as a branch, and is withered; and men gather them, and cast them into the fire, and they are burned" (John 15:5-6).

1 GOOD FRUIT TREES BRING FORTH SEEDS THAT BEAR FRUIT TO THE THIRD AND FOURTH GENERATIONS.

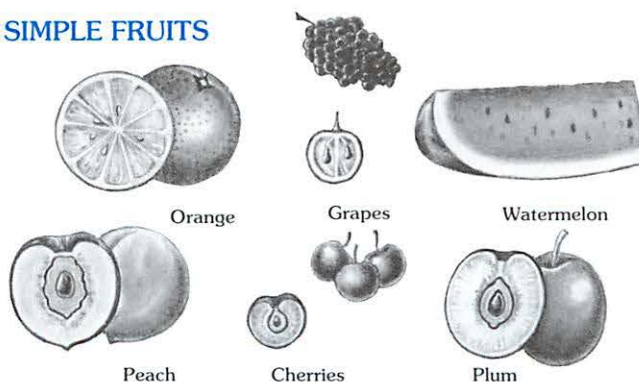
Horticulturists define a fruit as "the edible seed-bearing structure that is produced by a perennial." This limited definition eliminates tomatoes, beans, peppers, peas, cucumbers, and chestnuts from the list. They are mostly annuals, not perennials. That is to say that they grow anew from seeds each year.

Perennials are plants that live for more than two years without being replanted. Chestnuts are perennials, but the structure surrounding the seed is not fleshy in its appearance. Of the original list, horticulturists consider only blueberries, pears and cherries to be true fruits.

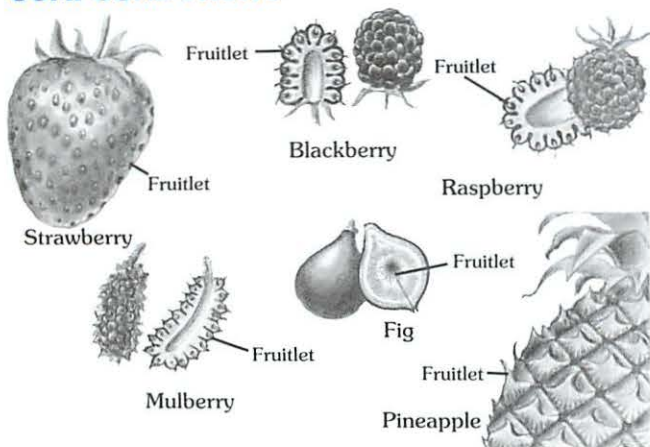
Botanists, on the other hand, take a different view of fruit. They define a fruit as "the seed-bearing structure which develops from any flowering plant." To a botanist, *everything* on this list is a fruit—even the tomato.

Botanists divide fruits into two main groups: simple and compound. Simple fruits usually produce just a few seeds. These include apples, blueberries, bananas, grapes, oranges, green peppers, apricots, cherries, peaches, and plums.

SIMPLE FRUITS



COMPOUND FRUITS

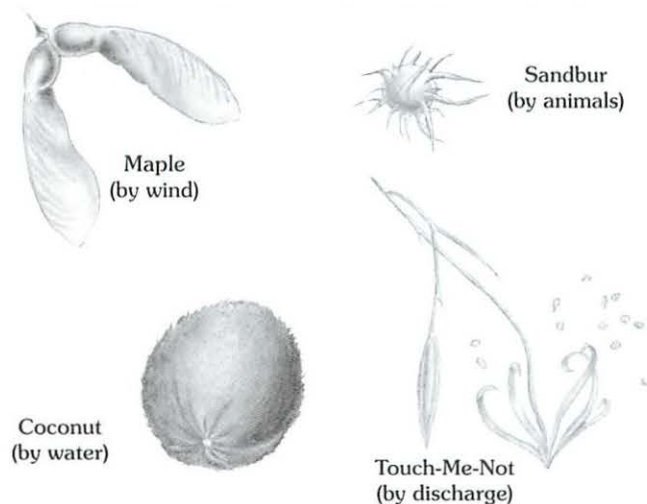


Each fruitlet in a compound fruit has its own seed inside. Clusters of these fruitlets form strawberries, blackberries, raspberries, figs, mulberries, and pineapples.

Compound fruits, however, may produce hundreds of seeds. Blackberries, raspberries, and strawberries are compound fruits, because they have many seeds which develop from a single flower.

Figs, mulberries, and pineapples are a special type of compound fruit in that they develop from clusters of individual flowers. The flowers bloom so closely on a single stem that they appear to form a single fruit.

FRUITS PROTECT AND DISPERSE SEEDS.



Some fruits produce sticky spines that attach seeds to passing animals or people. Other fruits surround seeds with fluffy coverings that carry them aloft with the wind. Still other fruits actually form "wings" so their seeds can "fly."

As puzzling as these definitions may be, all fruits have one common characteristic: Fruits are always a part of a plant's seed-bearing structure and are intimately involved with seed production and dispersal.

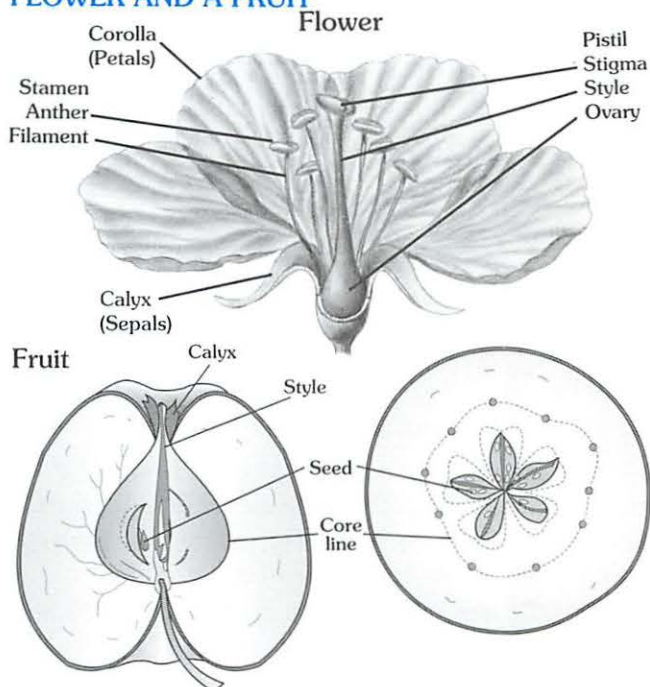
If a fruit tree does not bring forth succeeding generations of fruit-bearing plants, it is not a good fruit tree.

2 GOOD FRUIT TREES BEAR FRUIT AFTER THEIR OWN KIND.

Most plants reproduce seeds through the processes of pollination and fertilization. Pollination is simply the transfer of pollen from the male parts of a flower to the female parts. It sets the stage for fertilization, which is the union of the pollen grains with the seed cells of the flower. Without both pollination and fertilization, seeds do not develop, and fruit fails to mature.

However, when fruit trees are cross-pollinated with pollen from different trees, the seeds they produce may not be true to their own kind. Cross-pollination introduces extraneous genetic factors which may alter the quality of the fruit in the second and third generations.

CORRESPONDING PARTS OF A FLOWER AND A FRUIT



The ovary is the hollow structure near the base of the flower. It may hold one or more seeds. The ovary wall develops into a fruit as the seeds inside mature.

• **Cross-pollination alters fruit's character.**

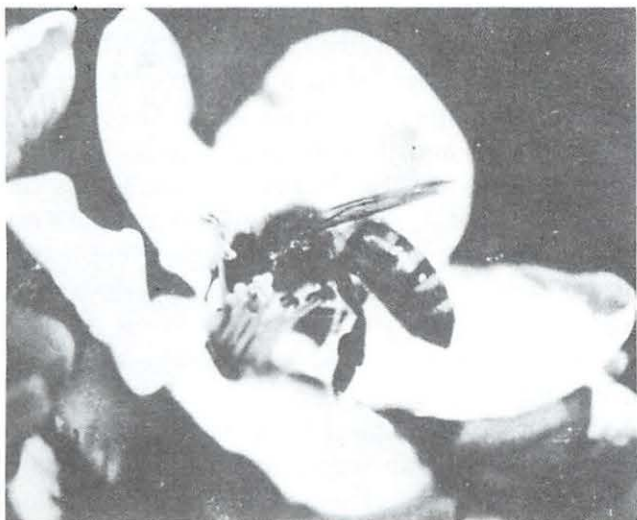
The flowers of apple trees, for example, consist of seven distinct parts. The male part of the flower is called the *stamen*. The word *stamen* comes from the Greek word *stemon* meaning "thread." Apple stamens look like short threads with small knobs on the end.

Botanists call the thread portion of the stamen the *filament* and the knob portion the *anther*. The anther produces pollen grains that will eventually pollinate other flowers.

The female part of the flower is called the *pistil*. Pistil comes from the Latin word *pestel*, which means "javelin." The pistils in most flowers jut out of the centers of the flowers like tiny javelins.

Botanists further subdivide the pistil into three parts. The *stigma* is a sticky area at the end of the pistil that receives and holds pollen from the anthers. The *style* is a long, slender tube that supports the stigma.

The *ovary* is a hollow structure at the base of the flower. It may be divided into one or more sections called *ovules*. The word *ovary* comes from the Latin word *ovum*, which means "egg." There are eggs inside the ovary of a flower that, when fertilized, will become seeds.



Modern Fruit Science, ©1983 Norman F. Childers

Bees are drawn to flowers by scent and by ultraviolet markings on the petals. These markings reveal where the flower's nectar is located. Nectar is a liquid produced by special glands called *nectaries* at the base of a flower. Bees suck up the nectar with their long tongues and store it for making honey.

The *corolla* (Latin for "small crown") of an apple flower consists of five petals. These brightly colored and sweetly scented leaves attract insects and birds to help carry pollen from the stamens to the pistil of the flower.

Beneath the petals is the *calyx*, or *sepals*. These special leaves are the protective covers that surround a flower while it is just a bud. As the flower blooms, the sepals unfold to expose the parts that are curled up inside.

Fertilization begins as the pollen grains germinate, forming long, slender tubes that work their way down the style and eventually penetrate the ovary. Germ cells then move through each tube into the ovary and fertilize the seeds inside it.

Cross-pollination takes place as honeybees move from flower to flower in search of nectar. As bees brush against a flower's anthers, pollen from one tree collects on their bodies. As they crawl across another tree's flower, the pollen grains brush off onto its stigma and stick to its surface.

This act of cross-pollination alters the genetic make-up of the next generation of seeds by introducing genetic information from neighboring trees. While cross-pollination produces good fruit in the first generation, the seeds of that fruit are not quite the same as its parents.

When planted, these seeds produce fruit that is different in color, taste, size, or sweetness. The fruit of the second generation is often puny, and shriveled, lacking flavor and appeal. The third generation may be even worse.

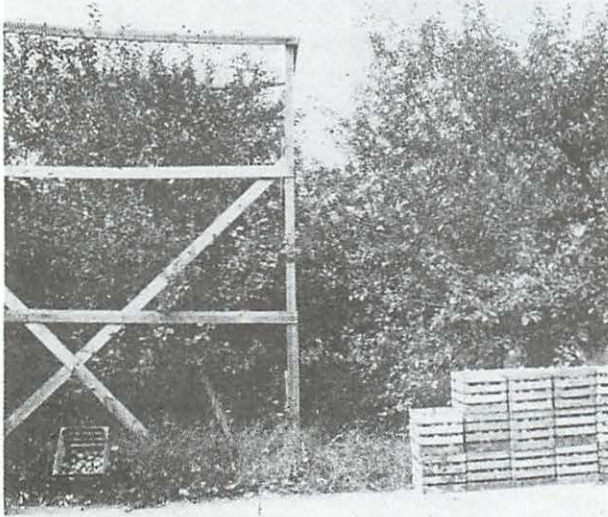


Wild fruit trees are noted for their poor fruit. Generations of cross-pollination with other trees renders them less than the best.

- **Self-pollination leaves a tree completely unfruitful.**

While cross-pollination leads to poor fruit in the second and third generations, self-pollination is even worse. Fruit trees that receive pollen from their own flowers often fail to produce fruit even in the first generation.

APPLE TREES ARE "SELF-UNFRUITFUL."



Modern Fruit Science, ©1983 Norman F. Childers

Apple growers must plant several varieties of apples in an orchard to prevent self-pollination. A self-pollinated apple tree may produce only a half-bushel of fruit.

- **Good trees require grafting to assure a true reproduction of their fruit.**

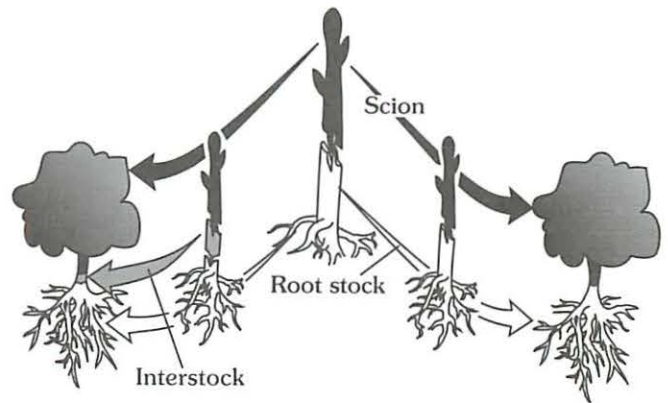
Planting fruit trees from seeds is risky business. Hybrid seeds do not normally bear fruit true to their variety. In fact, even the seeds from carefully cross-pollinated trees cannot assure a true reproduction of their parents' fruit. Grafting, on the other hand, produces an exact clone of the parent. It is the only means that fruit growers can use to predict the vigor, resistance, color, and quality of a young tree's fruit.

Virtually all the apple trees sold by nurseries today are grafted. Grafting involves joining together different plant parts in order to take advantage of each member's most valuable characteristics.

The part of a graft that provides the root system is called the *stock*. The piece that eventually bears fruit is called the *scion* (SIGH-un). Occasionally horticulturists may also graft a third member called an *interstock* between the stock and the scion.

The scion determines the kind and quality of fruit an apple tree produces, while the stock nourishes the tree and affects its size and productivity. Interstocks generally limit the growth of a tree and thus yield highly productive dwarf trees. In general, grafting produces hardier, disease-resistant trees that can survive poorer soils and lower temperatures than can nongrafted trees.

GRAFTING UNITES SEPARATE MEMBERS INTO ONE TREE.



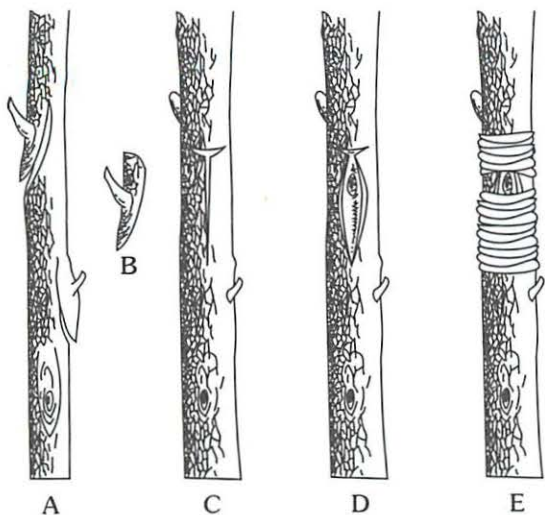
Quince root stocks are often used for grafting apple trees. Quince is an attractive shrub that is very similar in structure to an apple tree. Because quince roots are exceptionally hardy, they help protect trees from cold weather.

Of the many different techniques used to graft members together, budding is the most important commercial method. Nurseries usually do their budding at a time when the stock is growing well and its bark peels easily. The first step requires a short horizontal cut across the stock. This cut should penetrate the bark, but not extend into the wood itself. A second cut begins at the center of the first cut and runs downward for about an inch and a half. This forms a "T" in the bark of the stock that will receive a single bud from another tree.

Nurserymen select buds from the vigorous, fresh growth of an apple tree whose fruit they want to reproduce. They call these growths *bud sticks*. First they trim the leaves off, leaving only a bit of the stem for a handle to hold the tiny bud. Buds are then removed from the bud stick by cutting under the bud and bending it away from the bud stick. A shallow cut is then made about a quarter of an inch above the bud in order to complete the separation.

The fresh bud is then inserted into the T-shaped cut and tied in place with a rubber band. The following spring, after the bud has started to grow, workers cut off the old stock just above the grafted bud's new growth. The new growth becomes the tree that will bear fruit. The old growth of the root stock is simply thrown away. Any new growths that sprout below the grafted bud must also be removed periodically. They represent sprouts from the stock that will not bear quality fruit.

BUD GRAFTING



Most fruit trees originate from a single bud that is grafted onto a hardy root stock.

Other types of grafting include whip grafts, splices, saddle grafts, wedge grafts, side grafts, tongue, cleft, and veneer grafts, bark grafts, bridge grafts, and inarching. Each type of graft has its own specific purpose and application. To be successful, however, grafts must unite the cambium layers that lie just beneath the inner bark.

The *cambium* is a tree's growth center. It forms a cylinder around the trunk that produces new wood as it grows toward the center and new bark as it grows toward the outside.

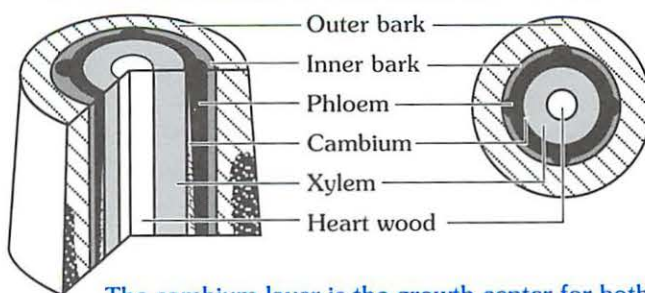
The union between the two cambium surfaces forms as callus tissue heals the wounds made by the grafting cuts. The resulting callus interlocks the two cambium layers to form a continuous connection. As the interlocking layers grow, they bind the two members together into a single tree with a single circulatory system.

• Grafting fails when there is no complete union between the "branch" and "vine."

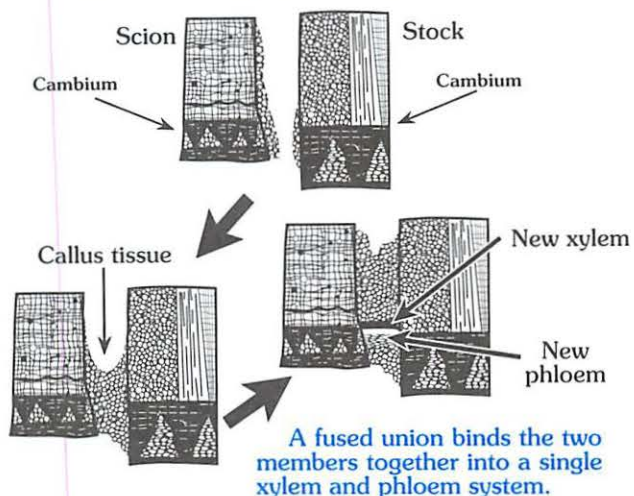
Most grafts "take" successfully without complications. However, some grafts fail. These failures are usually the result of a lack of moisture. While a graft is healing it is particularly susceptible to drying out. Drying destroys the delicate callus tissue that binds the two members together.

Without active callus cells the cambium cannot form a living, growing connection between the stock and the scion. To prevent drying, gardeners seal most graft joints with tape or coat them with a special wax.

UNION BETWEEN "BRANCH" AND "VINE"



The cambium layer is the growth center for both the xylem and the phloem layers. The xylem (ZY-lem) layer carries water from the roots to the leaves. The phloem (FLOW-um) layer carries food manufactured by the leaves to the other parts of the tree.



Other factors that cause a graft to fail are viruses that spread from one member to the other. If the virus infects the scion, the tree usually lives but fails to bear fruit. However, if the virus infects the root stock, the whole tree dies.

Cold temperatures also limit the success of many grafts. Callus formation usually works best at about 80–85°F. If a completed graft is not stored under warm, moist conditions, the callus forms too slowly to unite the two members.

Rather than binding the stock and scion together, the wound heals between the two members—separating them forever.

Because fruit trees have no antibodies to reject transplanted buds, any two compatible members can be grafted together. That makes it possible for a single fruit tree to produce several different types of fruit. All that is required is to graft buds from several different varieties onto the same stock. As each bud grows, it bears its own kind of fruit, which is identical to that of its “forefathers.”

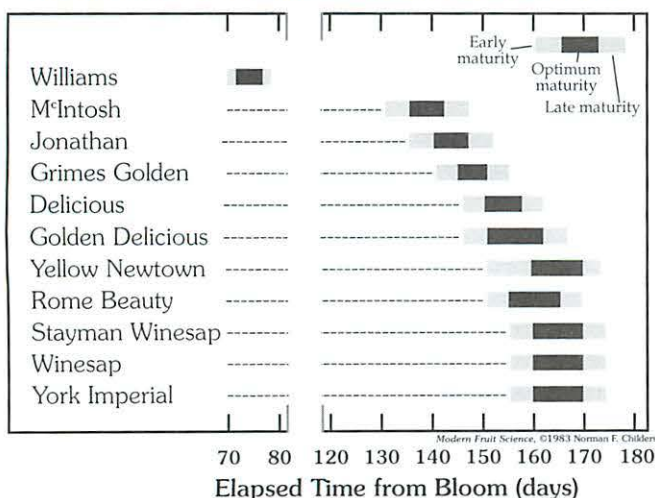
3 GOOD TREES BEAR FRUIT ACCORDING TO THEIR APPOINTED SEASONS.

Apple trees are known as *temperate fruit trees* because they require a season of cold weather with temperatures below 45°F in order to bear fruit. Without a season of cold followed by rising spring temperatures, apple trees fail to mature and bloom.

Subtropical fruits such as oranges, grapefruit, dates, figs, and olives also require seasons to regulate their growth and can tolerate an occasional light frost. Even tropical fruit such as bananas, pineapples, papayas, and mangoes are not completely independent of seasons.

Apples also require a definite season to develop and ripen. Normally most varieties take from 145 to 150 days. However, the exact times often vary, depending upon the kind of apple tree.

APPLE TREES BEAR FRUIT IN DUE SEASON.



Each variety of apple has its own season. Some varieties bear fruit earlier than others, but every variety remains true to its own season.

Fruit raisers number the days till harvest from the moment petals first fall off the apple blossoms in the spring. They count on the fact that, though temperatures and weather conditions may vary, their fruit will ripen at about the same time each fall. They can predict within five to fifteen days when their crop will be at its best.

As the harvest approaches, fruit growers look for a slight change in the “ground” color of their fruit. For an apple, the “ground” color is its green background. With most varieties of apples, the day the ground color begins to turn yellow is the day that the fruit is ready for harvest.

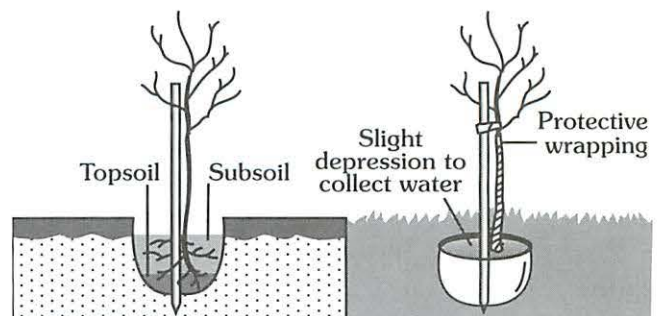
Unfortunately, some apples turn completely red before they are ready for picking. They have no ground color to monitor. Instead, growers measure the firmness of these apples as an indication of their readiness.

Others rely on the ease with which the fruit pulls off the tree. They understand that when a fruit is ripe, a callus layer forms where the fruit stem joins the branch. This thickened barrier cuts off the supply of nourishment to the apple and loosens the tree’s hold on it. Eventually, if the apple is not picked, it falls to the ground to disperse its seeds.

If fruit is picked before its time, it tends to be small, poorly colored, sour, tough, starchy, off-flavor, and susceptible to diseases during storage. Likewise, fruit that is allowed to overripen tends to be mealy and tasteless. Fruit that is beyond its prime does not store well and develops conditions such as *water core* and *soft scald*.

Water core is a translucent, watery area of flesh that significantly reduces the quality of the fruit. *Soft scald* is a blister-like appearance that discolors both the surface and flesh of a fruit.

WHEN IS THE BEST SEASON TO PLANT A FRUIT TREE?



The best season to transplant an apple tree is in the early spring when it is two years old and less than five feet tall. Transplanting trees while they are young allows their limbs to be trained to carry heavy loads of fruit without breaking.

4 GOOD TREES BEAR MORE FRUIT WHEN THEY ARE SMALLER IN STATURE.

Bigger is not always better. Especially when it comes to fruit trees, bigger usually means less fruit per acre. Fruit growers know that larger trees which direct their energy into growing branches and a heavy canopy of leaves bear substantially less fruit than trees of smaller stature. They know that smaller trees direct their energy into bearing fruit rather than building themselves up.

Horticulturists refer to small fruit trees as *dwarfs*. Dwarf fruit trees not only yield more fruit per acre, they also bear fruit at a younger age, have a better quality and color of fruit, require less fertilizer, are more resistant to disease, and have less labor costs.

To grow a dwarf fruit tree, nurserymen graft a root stock or an interstock that restricts vegetative growth. The amount of dwarfing is directly proportional to the length of the graft they use. Longer interstocks produce the most dramatic effects. They restrict the growth of limbs and branches so that an adult tree may stand only six to eight feet high while still allowing the tree to bear its potential of full-sized fruit.

Standard vs. Dwarf Tree



Horticultural Science, Jules Janick, ©1972 W.H. Freeman and Company

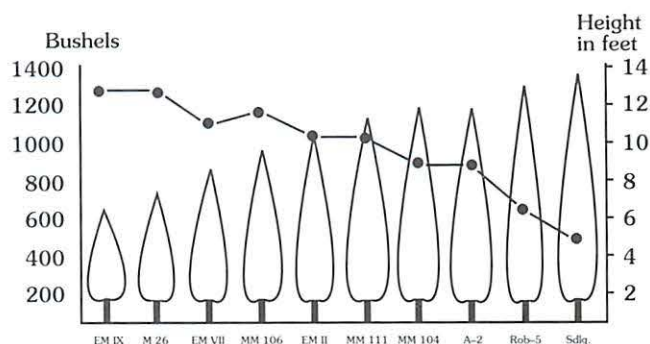
Both these trees are seven years old. The tree on the right, however, is a dwarf. It is laden with apples because its energy and resources are directed into producing fruit rather than limbs. Growers inserted a special dwarfing interstock between the scion and root stock when they grafted the tree.

Interstocks and root stocks work like valves to restrict the flow of nutrients up and down the trunk of a fruit tree. Leaves and

branches require nutrients that are absorbed through the tree's root system and then lifted up the trunk through the xylem. Carbohydrates and sugars flow down the trunk from the leaves to the roots through the phloem.

While restrictive root stocks and interstocks hinder the flow of raw materials up and down a tree, they do not block the flow of the raw materials from leaves to fruit. Since fruit depends on raw materials manufactured in a tree's leaves and not its roots, the size and quality of fruit on a dwarf tree are not affected by dwarfing.

Fruit growers have also discovered that bending a tree's limbs has much the same effect. Bending a branch restricts the flow of nutrients back and forth between leaves and roots. As a result, carbohydrates and sugars build up on the leafy side of a branch, the side farthest away from the trunk. Likewise, minerals and hormones from the roots build up on the near side of the bend, the side closest to the trunk. The restricted flow stimulates increased fruit production and decreased vegetative growth on the limb.



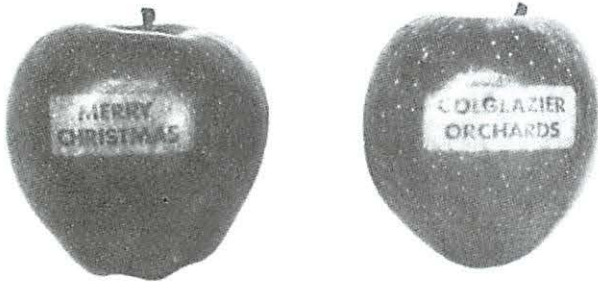
The various dwarfing root stocks and interstocks listed across the bottom of the chart produce trees of different sizes. The smallest trees yield thirteen hundred bushels of fruit per acre while the largest trees produce only about five hundred. Fertilizing a fruit tree may also result in less fruit. Fertilizers encourage the growth of leaves, branches, and roots, without a corresponding increase in fruit.

Ringing a tree with deep cuts that interrupt sap flow is another way of stimulating a fruit tree to temporarily produce more fruit. Eventually, however, the cuts heal, and sap flow returns to its full rate. Cutting away a ring of bark, turning it upside down and grafting it back in the same spot has the same effect.

The xylem and phloem “tubes” are designed for one-way flow only. When they are reversed, they temporarily block the flow of sap up and down the trunk. This retards vegetative growth without affecting the formation of fruit.

• *Pruning limits a tree's stature.*

Pruning is another mechanical way of dwarfing the growth of a tree. Without pruning, a tree's branches grow in many different directions and tend to bear more leaves than fruit. Leaves block sunlight from falling on the inner branches of a tree and limit the number of flowers that bloom.



Purdue University

Light intensity also influences the formation of pigments in the skin of an apple. Growers labeled these apples with tape to show the effects of light. The covered areas remained pale, while the areas exposed to light turned deep red.

Proper pruning opens up the tree to admit more light to the lower branches. This increases both flower formation and opportunities for cross-pollination. The net result is more quality fruit.

Light pruning usually increases fruit production by 10 percent or more. Heavy pruning, on the other hand, actually results in less fruit, but the fruit that does ripen is almost always of exceptional quality.

• *Maturing trees require the most pruning.*

One of the hardest things to do when transplanting a young fruit tree is to prune up to half of its vigorous new growth. When nursery-men dig up a young tree in preparation for market they inevitably lose about half of its roots.

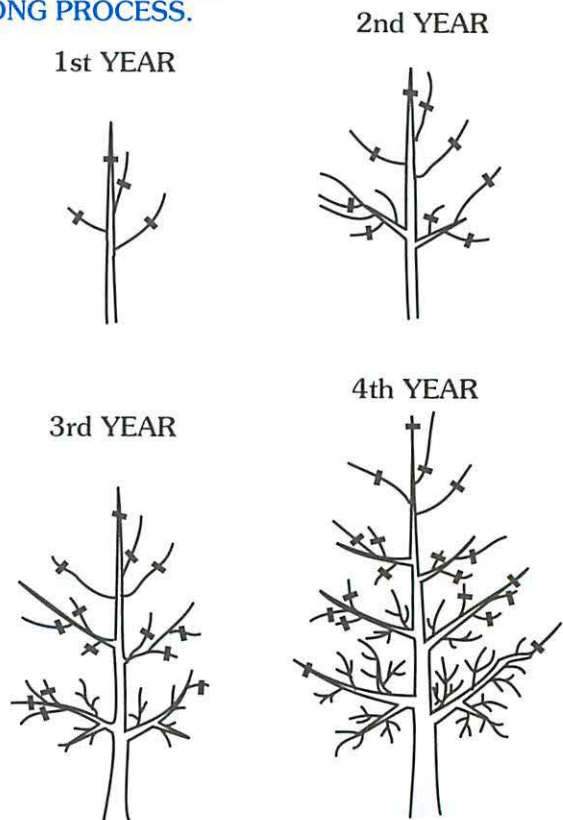
Without a full complement of roots it cannot supply enough food for its leaves. By cutting back an equal amount of growth from the branches, the grower brings the young tree back into balance.

The first year, a grower must remove all competing shoots and cut back the terminal shoot. The second year, it is important to select and prune the main lateral branches. Lateral branches that have no purpose must be removed. The third year, pruning should spread the branches and change any forked terminals to single shoots.

The fourth and subsequent years, pruning must persistently cut back the tips of branches so the tree concentrates its resources into fruit rather than limbs. As a tree grows older it actually requires more pruning. In fact, the total number of cuts increases from four to twenty.

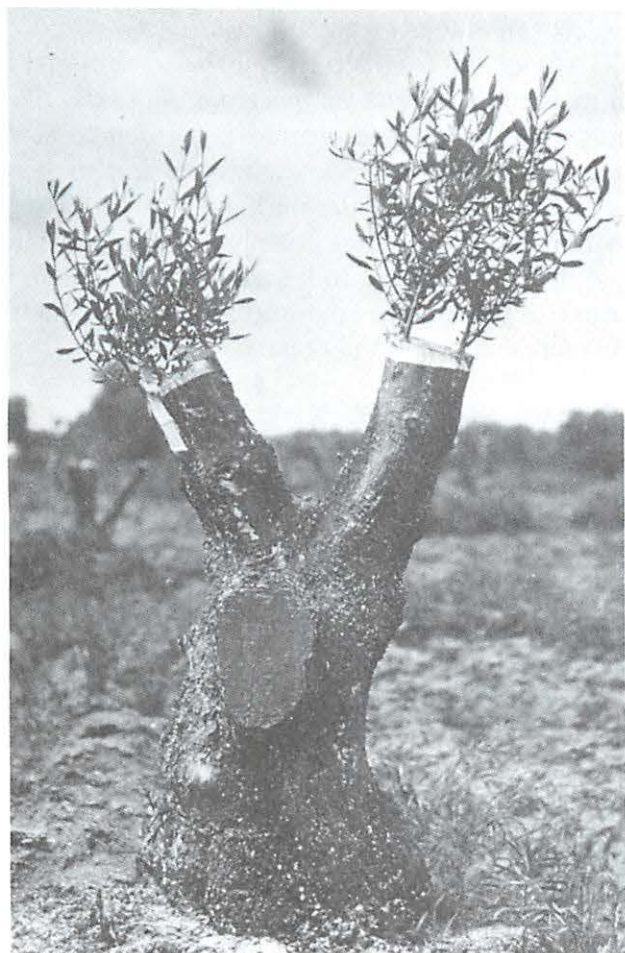
Because it requires several years for a good tree to produce fruit, growers occasionally rework an established tree. Rather than cut a tree down and start from scratch, they cut away only the non-productive branches of a tree and graft fresh scions in their place.

PRUNING IS A LIFE- LONG PROCESS.



Proper pruning is a never-ending process that begins the very day a tree is first transplanted.

Growers call this *top working*. Top working employs a cleft graft which attaches long slender sprouts to the old stubs. This reduces the vegetative growth of the tree, while at the same time renewing its ability to bear fruit.



U.S.D.A.

Top working is a radical process that brings new life to an unproductive tree. Fruit growers prune away all of a tree's limbs so they can graft fresh new sprouts to its trunk. Like the olive tree pictured here, the grafted branches bear fruit much sooner than a tree starting from scratch.

5 GOOD TREES PRODUCE THE BEST QUALITY FRUIT WHEN MEDIOCRE FRUIT IS THINNED AWAY.

Bearing fruit is a process that requires much of a tree's resources and energy. Unfortunately, when water and nutrients are limited, competition between trees can leave them vulnerable to diseases, insects, and drought. Under a heavy load of maturing fruit, a tree's roots, leaves, and

branches simply do not get fed. To minimize competition, growers carefully monitor the number of trees they plant per acre. They know that the success of their orchard depends on raising the highest density of fruit possible without overtaxing either the land or the trees.



Modern Fruit Science, ©1983 Norman F. Childers

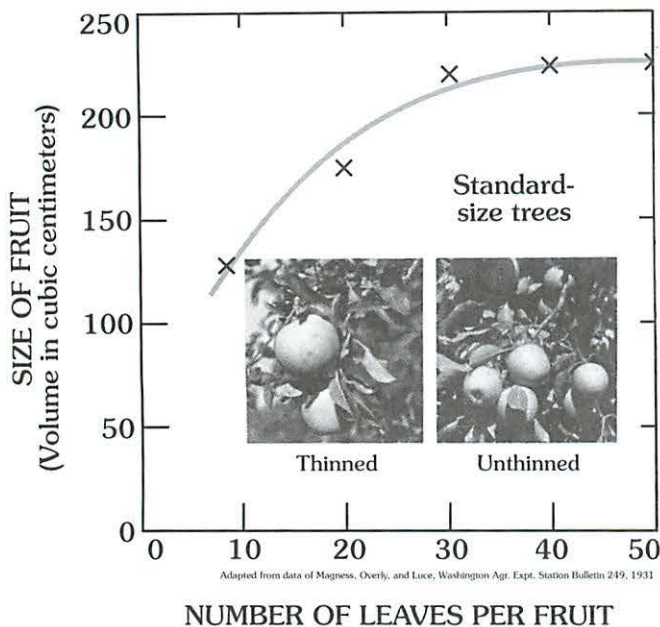
High-density orchards of dwarf apple trees attempt to make the most efficient use of limited resources. However, potential overcrowding can severely reduce a crop and encourage the spread of fungi as leaves constantly rub against one another.

When growers plant fruit trees too far apart, there is little or no competition, but they waste productive land. Planting more trees produces an immediate increase in fruit per acre. However, planting trees too close together causes competition, and the yield decreases and mediocre fruit begins to appear.

The key to a successful orchard is to maintain a balance between stewardship of the land and the production of quality fruit. Most growers elect to maintain this balance by planting trees relatively close together and thinning out the mediocre fruit when it is about one-third grown.

In order to protect their trees from stress, fruit growers thin early, before a tree reaches a point of exhaustion. They cut away the excess fruit until it is uniformly distributed and separated by at least two inches.

A thinned tree produces the same weight of fruit as an unthinned tree. The thinned tree simply concentrates its resources into fewer pieces of fruit of greater size and quality. As an added benefit there are more leaves per fruit. This increases the concentration of fruit sugars, improves the flavor, and brightens the color.



Growers carefully monitor what they call the **leaf-to-fruit ratio**. As a general rule of thumb, standard-size fruit trees require thirty to forty leaves for every piece of fruit. Dwarf trees require only about ten leaves per fruit. However, both dwarf and standard apple trees benefit from increasing the leaf-to-fruit ratio by thinning immature fruit.

In cases where growers fail to thin their crops, the competition for nutrients can retard the development of the next year's flower buds. That means that there will be no flowers the following spring. No flowers means no fruit.

Once this pattern starts, it is difficult to stop. In an "off" bearing year an abundance of buds forms in the absence of fruit. The next spring there is excessive flowering and a bumper crop of apples.

Unfortunately, the crop may be so large that the fruit is of poor quality, and the heavily loaded trees may be burdened down with well over a ton of fruit. Limbs break, the trees exhaust themselves, and the cycle repeats the following year.

6 **EVEN GOOD TREES MUST BE HARVESTED CAREFULLY TO PREVENT SPOILAGE.**

Because fruit bruises more easily than most other crops, it must be handled with extreme care. While a few orchards are picked by machine, most fruit must still be picked by hand. Even then, fruit pickers must take every precaution to handle the fruit as delicately as eggs.

Proper handling requires pickers to start with the lower branches first and gradually move higher into the tree's top. This prevents the ladder from banging against fruit before it is picked. Pickers must be careful not to pull the stem off a piece of fruit as they pick it. Torn stems leave a hole through which diseases and insects can enter.

Once the fruit is picked, growers must get it to market or storage as quickly as possible. The fruit must be washed, sorted according to size, boxed, and shipped. Sometimes this may require as many as sixteen different handlings. Even with so many opportunities to injure fruit's delicate skin, it costs no more to handle it carefully than it does to permit an accumulation of bruises, punctures, and unsightly marks.



H.P. Gaston, Michigan Experiment Station

To pick an apple, grasp it firmly with the whole hand and lift to the side and up. Do not allow fingernails to break the skin or rough handling to bruise the fruit.

PROJECT

Memorize James 3:13-18 as a personal reminder to sow fruitful seeds. Then match the following analogies with the appropriate section of the Resource.

- Those who seek to acquire possessions, position, and power may find themselves bearing less fruit than those who have been freed from distracting influences that drain resources and consume time.
- Good fruit results from the union of the Holy Spirit and our own spirits.
- A fruit becomes ripe when we are able to loosen our grip on it and let it fall away without tearing.
- The purpose of spiritual fruit is to produce more fruit.
- Spiritual fruit is a product of abiding in Christ.
- Failure to thin away mediocre fruit is one of the greatest enemies of excellence.



HOW DOES A FRUIT INSPECTOR SELECT THE VERY BEST FRUIT?



Food and Nutrition, Nancy Nugent, ©1983 Rodale Press

Government agents inspect fruit for disease and the presence of insects. Wholesale buyers inspect fruit for its "salability." However, the ultimate inspector is the one who actually brings the fruit home and eats it.

Buying fresh fruit is probably one of the most difficult parts of shopping in a supermarket. There are usually no brand names or labels to go by, and each day is different from the day before. For example, apples that were quite good on Monday may be an entirely different variety and come from an entirely different source by Friday.

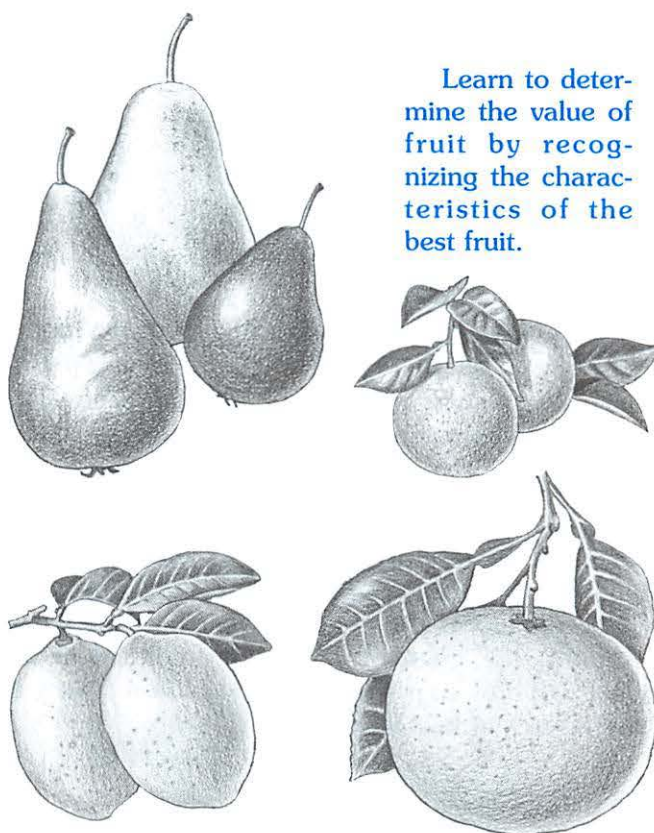
The food industry also contributes to the problem by the words it uses to describe its products. For example, in the vocabulary of advertising the size of ripe olives, "large" is the smallest size available. Other sizes are special super, super colossal, colossal, superjumbo, jumbo, super mammoth, and mammoth.

To make matters worse, prices are no indicator of quality either. With foods such as meat, a \$5.99-per-pound sirloin steak usually tastes better than a \$1.99-per-pound chuck steak. But, a pint of strawberries that costs \$3.99 in December will not taste nearly as good as ones selling for \$0.69 a pint in May.

On the other hand, overripe bananas at \$0.29 a pound may not be as good a buy as the slightly green ones at \$0.39 a pound, unless of course you are prepared to use them right away.

Outward appearances can also be deceiving. The gloss on an apple might be its natural "bloom." Or, it might be simply a deceptive coating that was applied to make the apple look more attractive to the consumer.

Golden yellow peaches might be ones that are perfectly ripe and ready to eat, or they might be hard green ones that were gassed in a truck on their way to the store.



Learn to determine the value of fruit by recognizing the characteristics of the best fruit.

Determining the value of fruit is tricky business and requires the skills of a discerning fruit inspector. It is not enough to merely look on the outward appearance. Inspecting fruit involves every one of the senses. Failure to recognize the difference between "good" and "bad" fruit not only wastes money, but it can also jeopardize a family's health.

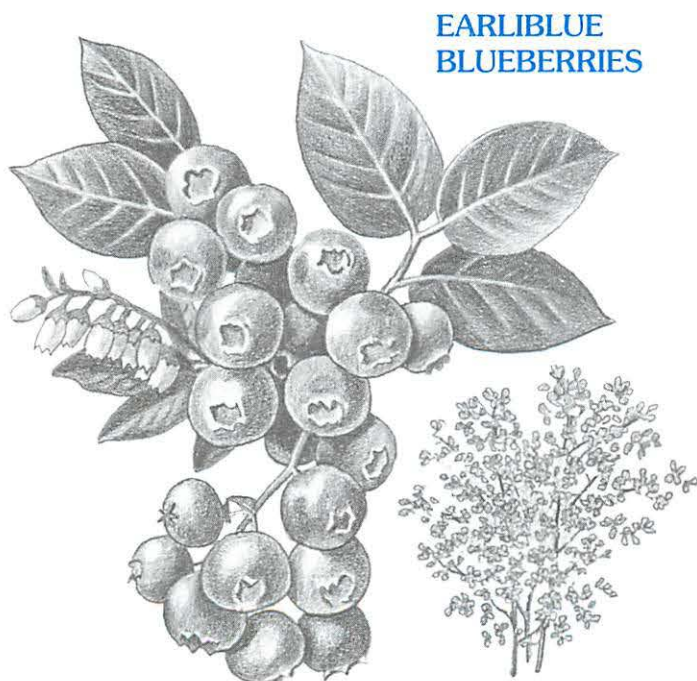
An astute fruit inspector buys Florida Pineapple oranges for several weeks after the Valencias appear and then switches to the Valencias when they reach their peak season.

BANANAS are one exception to the rule of seasons. Because they grow in tropical areas, they are in season twelve months of the year. For the most part, no one month is any better than any other. The supply is both ample and steady, regardless of the season. Even prices remain relatively stable all year long.

Because bananas are in oversupply there is fierce price competition among the countries that export bananas. Vigilant fruit inspectors can find bargains any time of the year.

BLUEBERRIES have one of the shortest seasons. They are available less than five months a year, arriving in May and disappearing in September. The blueberries that are flown in during the winter from the Southern Hemisphere are usually too expensive even to consider.

A new variety of blueberry called *Rabbit Eyes* from northern Florida and Georgia is the first to arrive in early May. North Carolina blueberries arrive late in May. New Jersey's crop begins in June. Oregon ships in July. Michigan, Massachusetts, Washington state, and British Columbia blues come in season in August. By late September they are all gone.



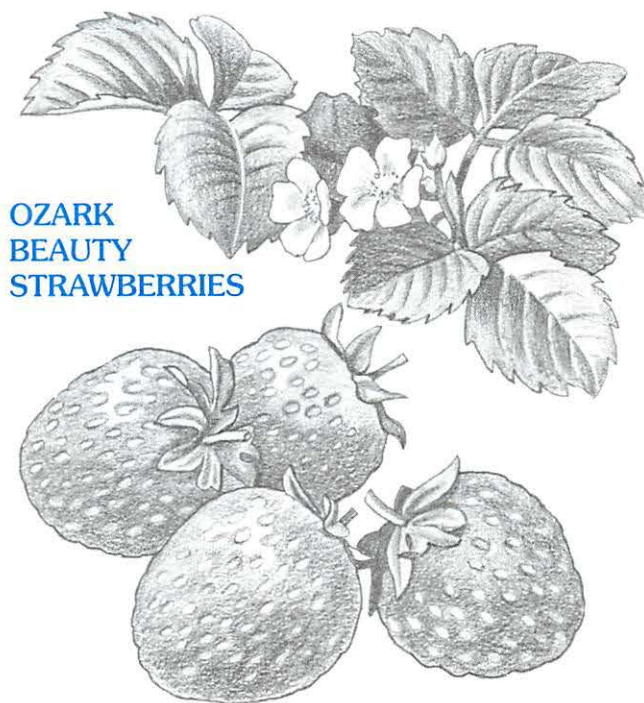
**EARLIBLUE
BLUEBERRIES**

KIWIS, surprisingly enough, are also available in prime condition year-round. Fruit growers introduced them to the United States from New Zealand in 1960 and found that they flourished in Southern California. Their season lasts from May through November.

Because New Zealand's growing season is opposite that of the United States', the kiwis' seasons overlap. As one ends, the other is just reaching its peak.

STRAWBERRIES are grown in all fifty states, including Alaska, and are available in most places all year long. California produces strawberries eleven months a year. In fact, California accounts for more than 75 percent of the total U.S. crop. In 1984, California produced 560 million pounds of strawberries.

New Zealand, Israel, and Mexico also export beautiful strawberries, although they are usually expensive—\$5 or more per pint. However, compared to the marvelous California berries that sell for well under a dollar a pint during their peak season of May and June, they really are not much of a bargain.



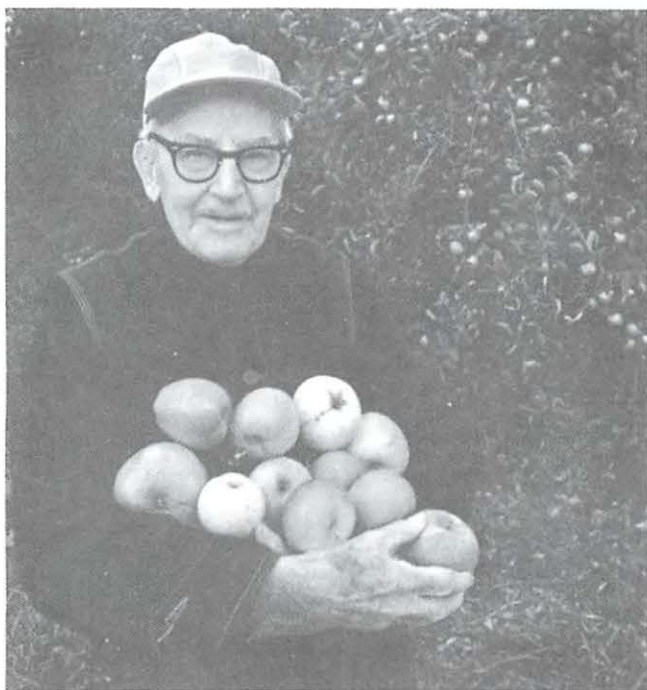
**OZARK
BEAUTY
STRAWBERRIES**

CANTALOUPEs offer an economical alternative to other fruits. Because they are at their peak from June to December, they are improving in quality at a time that many other

fruits are past their prime. Their prices are modest. They are low in calories, high in nutrition, relatively easy to keep, and are clearly one of the best buys on the market toward the end of the year.

2 *A wise fruit inspector selects the best variety.*

A discerning fruit inspector recognizes that not all fruits are the same. Each variety has its own distinctive characteristics. In fact, there are often as many differences between varieties as there are between kinds of fruit.



Conduct your own taste test by peeling a Red Delicious, a Golden Delicious, and/or several other varieties of apples so that you do not know which is which. Learn to distinguish each variety by its taste rather than its color. Some of the least expensive varieties are actually the most flavorful and useful.

For example, Red Delicious apples account for more than 40 percent of the total tonnage of apples produced in the United States. However, while Red Delicious apples look good, they fall short on flavor and texture. They cannot be cooked or baked, and many less popular varieties are actually tastier.

Golden Delicious apples are far juicier, sweeter and have a much smoother texture than

do the Red Delicious variety. Golden Delicious apples even cook and bake well. McIntosh apples are juicy, too, and tender when eaten out of hand, but applesauce made from Macs turns into baby food. McIntosh slices dissolve when cooked in pies and, when baked whole, they simply melt in the oven.

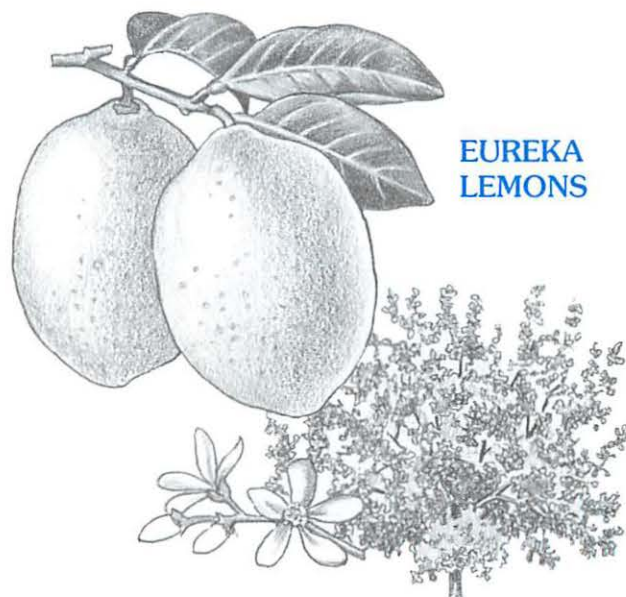
Rome Beauties, on the other hand, are perfect for baking. They lack flavor when eaten raw, but with sugar and spices they cannot be beaten for apple pie. Rhode Island Greenings are also great pie apples and make the very best applesauce. Granny Smiths, on the other hand, offer a tart-sweet flavor and a crunchy texture that make them one of the best fruit buys around.

Be a fruit inspector—Learn the characteristics of the best varieties.

LEMONS, like other fruit, rarely carry a label identifying their particular variety. However, the best quality lemons often carry an individual stamp showing a national logo. Unfortunately, they also carry a premium price.

Many top-quality independent growers, however, send their lemons to market without logos. These unbranded varieties offer shoppers a real bargain if they can recognize quality without the logo. Their fruit is just as good and is often much less expensive.

Knowing how to judge a lemon can give a shopper a real break. Selective fruit inspectors look for firm lemons that feel heavy for their size. They reject those that feel light in weight, are thick-skinned, or seem soft and spongy when squeezed gently.



Since small- and medium-sized lemons have the thinnest skins, they are also known for containing the most juice. Because larger lemons are usually more costly and provide less juice, smaller lemons are often the best buy.

By gently rolling a hard lemon across a flat surface before cutting it, a fruit inspector can actually increase the juice it yields.

Fruit inspectors also know that the color and the “clearness” of a lemon’s skin is no clue to its juice content. Because those with blemished skins sell at lower prices, yet are just as juicy, they offer another advantage to the discerning buyer.

Lemons are usually least expensive in the winter, and limes are least expensive in the summer, so the wise shopper purchases limes and lemons interchangeably to gain the best deal.

GRAPES come in hundreds of colors ranging from red to white to blue. Some are seedless; others are not. Some are large, while others are quite small.

Grape growers distinguish between varieties by noting a grape’s skin type. Many grapes have “slip skins”—skins that separate easily from the flesh of the grape. The slip skin varieties are sold commercially to make jelly and grape juice. They are in season for only two or three months during the fall and are typically quite fragile.

The other major strains of grapes have skins that cling. These are the ones most likely to be eaten out of hand.

Varieties with slip skins are known as American. Those with clinging skins are known as European varieties. Both groups, however, are produced throughout the grape-growing areas of the world. California, for example, is the European grape capital of the U.S. and produces 98 percent of the grapes that grace our tables. In recent years the crop has exceeded more than a billion pounds of grapes annually.

The Thompson seedless grape is perhaps the world’s favorite variety. It is a fairly large, elongated grape, with a tender skin and an excellent flavor. Many Thompsons are imported from Chile between mid-January and May. While other imported fruits do not fare very well during transit, these grapes are the best, regardless of where they come from.

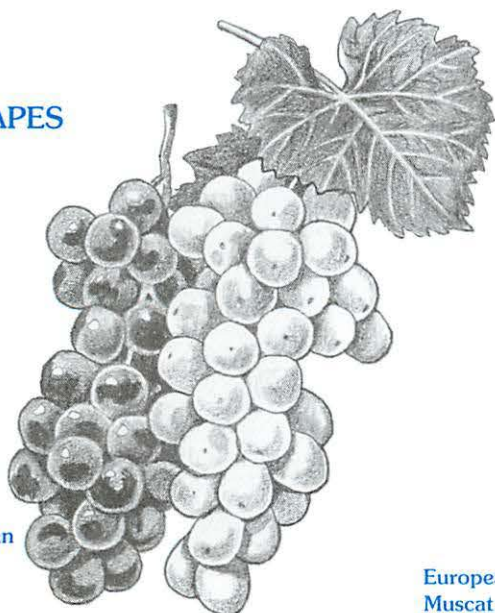
Green (white) seedless Perlettes are grown in the desert-like areas of California. They are round, light green in color, have a tender skin, and are very crisp and crunchy in texture. When they are more yellow than green they are one of the sweetest grapes available. But, when they are jade green in color, they can be very sour.

The Flame seedless is a new, red-skinned variety. It is slightly smaller in size, but very crispy and crunchy to eat, and every bit as sweet and flavorful as the Perlettes. Do not pass up these grapes just because they are red.

While seedless grapes are far more popular than the varieties with seeds, knowledgeable fruit inspectors prefer the more flavorful taste of many of the seeded varieties. They know that an aversion to seeds causes many people to miss out on some good bargains.

PLUMS come in assorted sizes, shapes, skin colors, and even flesh colors. They are green, yellow, orange, purple, every shade of red, and black. Some have yellow-colored flesh, while others have red.

GRAPES



American
Buffalo

European
Muscat

PLUMS



Green Gage,
French
Damson,
Santa Rosa,
and Stanley

For the most part, fruit inspectors divide plums into two categories, known as *European* and *Japanese*. European plums are usually purple and freestone, but not always. Japanese plums, on the other hand, are any color but purple. Most are clingstone.

Japanese plums, in spite of their name, grow worldwide. They are tastier and juicier than the European varieties and are best eaten uncooked and out of hand. They collapse when cooked and are not suitable for drying as prunes.

Most European varieties are milder and meatier, and they cook beautifully. European plums are also the only types that are sold as prunes.

Cautious fruit inspectors know to beware of the Simka Rosa plum, also called the New Yorker plum. It has a tiny chip of a pit embedded in the flesh of the plum that remains even after the more obvious main pit has been removed. Many dentists have had to do major repair work after an overeager eater bit into this delicious fruit.

Among European plums, the Damson variety is best for making jams and preserves. The Empress resembles a huge prune, yet has good flavor. The variety to avoid is the President. It looks like a winner, but does not taste very good.

3 A wise fruit inspector searches out the best sources for fruit.

Advertisers attempt to present their products in the best light. However, they sometimes border on outright deception. They use words such as "Farm-Fresh," "Home-Grown," "Fresh-Picked," and "Hand-Selected" to suggest that their fruit is somehow better than others on the market.



Milt and Joan Mann

"Hand-picked" does not ensure quality.

Unfortunately, these labels are completely meaningless. "Farm-Fresh" may mean nothing more than that the fruit was fresh when it left the farm. The label does not tell which farm the fruit came from or how long it has been in transit.

"Home-Grown" is just as deceptive. It does not reveal the source either. Since most farms have homes nearby, just about all crops qualify as "Home-Grown."

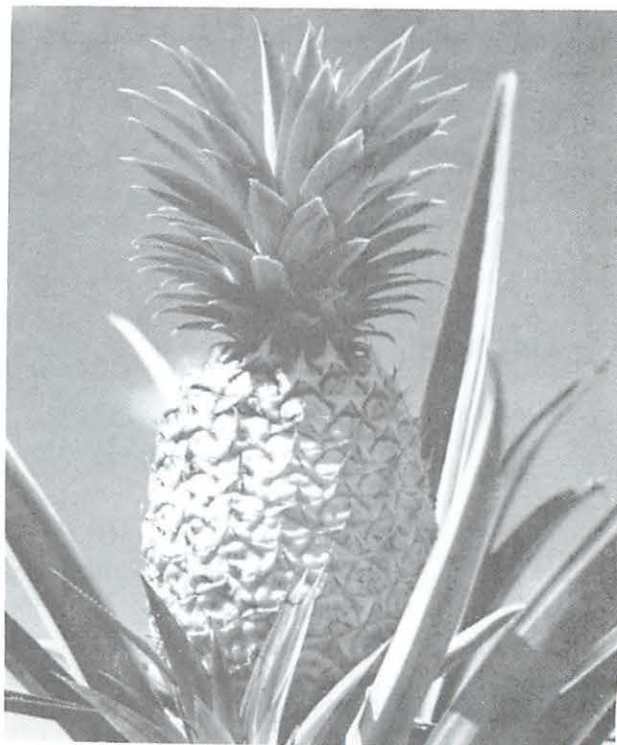
Terms such as "Western-Grown," "Tropical," and "Plantation-Picked" are also meaningless. Fruit inspectors need more information in order to search out the best fruit. They must ignore the nonsense on labels and find out where the fruit really comes from.

Be a fruit inspector— Learn the best sources of fruit.

PINEAPPLE is a tropical fruit that once grew only in Brazil. Today, pineapples appear in grocery stores across the country no more than two or three days after they are harvested.

Pineapples of quality come from just one source: Hawaii. Hawaiian pineapples are slightly more expensive, but they are simply the best around. Other growers from Taiwan, the Philippines, Mexico, and Central America grow the same varieties. However, farmers in these latter areas tend to pick their pineapples while they are too green to reach their full potential of sweetness.

PINEAPPLE



Dole, Inc.

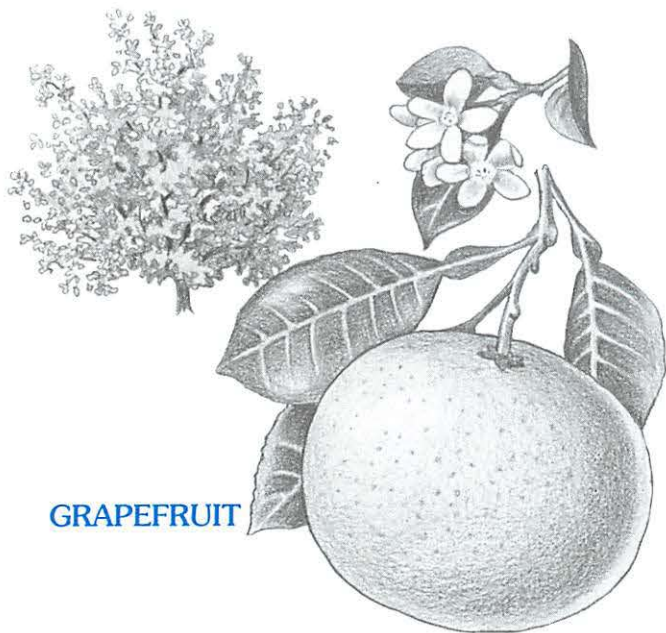
Hawaiian pineapples, on the other hand, show no difference in texture and sweetness between the ones that you purchase locally and ones served fresh in Hawaii. The only real difference is the higher price tag that results from the high cost of air freight.

Latin American pines look virtually identical to Hawaiian pines, but they are usually woody, and are not as juicy and sweet. Even though they are less expensive, they are rarely a better buy.

Fortunately for fruit inspectors, most Hawaiian pineapples have a name tag attached to them. "Royal Hawaiian" and "JET FRESH FROM HAWAII" are the clues to the best pineapples. If the pineapple does not say "Hawaii," look on the back of the label to find out where it originated.

Because labels are oftentimes deceptively similar, fruit inspectors must be careful to read the fine print. If there is no label on a pineapple it is probably a Latin American look-alike.

GRAPEFRUIT are also grown in many areas of the world. Israel, Spain, Greece, Brazil, and Cuba are major producers. However, Florida produces about three out of every four grapefruit eaten in the United States. Texas ranks a distant second.



GRAPEFRUIT

The best of the best grapefruit come from a relatively small growing area along the east coast of Florida between Palm Beach and Daytona. Fruit inspectors recognize these grapefruit as "Indian River grapefruit." Most Indian River grapefruit wear an inked brand that indicates their source.

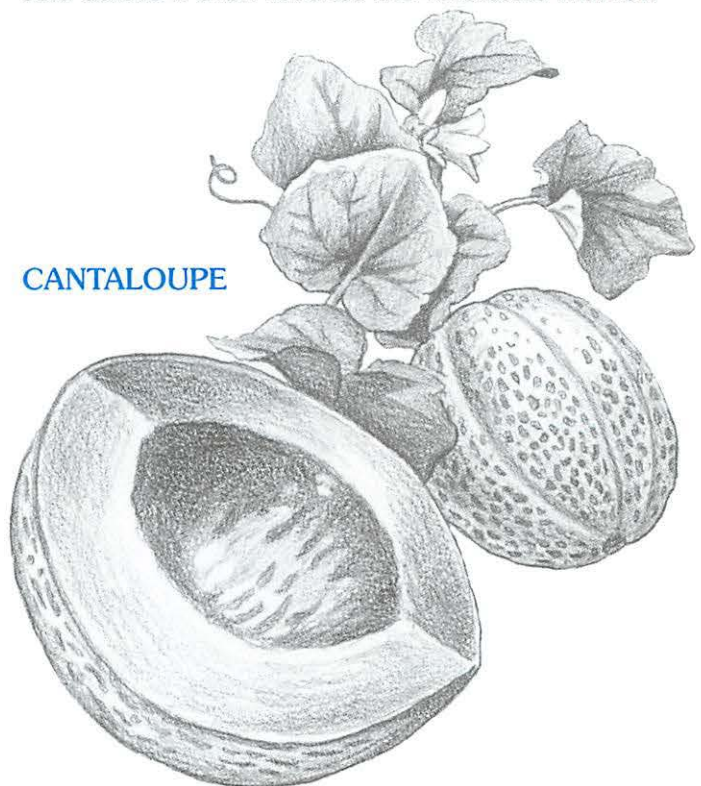
This two-hundred-mile stretch of tropical sunshine is a perfect climate for grapefruit. It is warmed by Gulf Stream waters that shield the groves from frost damage during the winter.

The only better grapefruit in the world come from an Island off the Florida coast known as Orchid Island. These grapefruit will always bear a gummed label reading "Orchid" or "Orchid Island." While they typically command a premium price, they are clearly the best source of quality in the grapefruit market.

Grapefruit grown in central Florida are known as "interior grapefruit" and are of significantly inferior quality. Most are sold to commercial processors. The best Texas grapefruit are known as *Star Rubies* or *Ruby Reds*. When Indian River grapefruit are unavailable, the Texas source is next best.

CANTALOUPE grown in the heart of Dixie are no bargain. In fact, those grown east of the Mississippi are long on size and short on flavor. For the best cantaloupes a fruit inspector must head west. The farther west cantaloupes are grown, the better they taste.

The one exception is a small grower in upstate New York named Hand. Hand cantaloupes are known the world over for their flavor and texture. However, because the demand usually exceeds the supply, most of the crop is sold before it even reaches the wholesale market.



CANTALOUPE

ORANGES grow on both coasts and are available twelve months of the year. On rare occasions imports similar to our California Valencias arrive from Israel, Spain, and North Africa. However soil and climactic conditions produce differences in the color, texture, and juice content of these oranges, even when different sources grow identical varieties.

Florida oranges have thinner skins and more juice than those from California. California oranges, on the other hand, are easier to peel and separate into pieces. Because of their juice content, much of Florida's orange crop is made into frozen concentrate, while California oranges are sold mostly for table use.

PEACHES and PEARS also have their best sources. As a general rule, peaches grown east of the Mississippi are not quite as large, but they are significantly more juicy than those grown in other parts of the country.

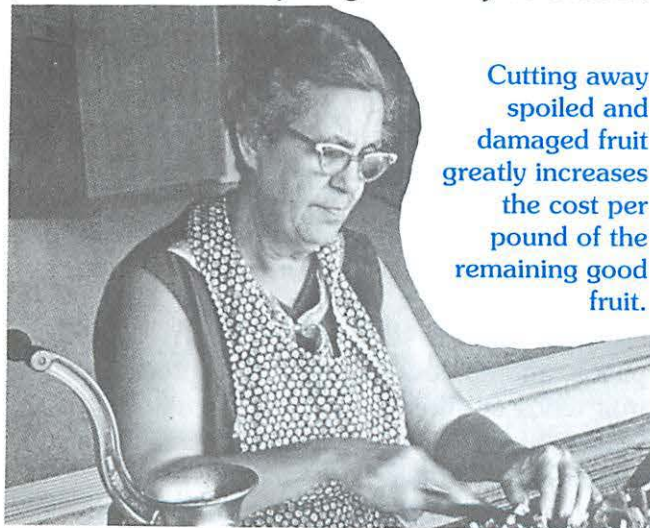
Cling peaches from California are usually sold to canners who put up tinned peaches and fruit cocktail and rarely make it to the grocer's fruit aisle.

Among pears, those from New York and Michigan cannot match the pears of the West Coast in size, appearance, and flavor.

4 *A wise fruit inspector counts the cost of damaged fruit.*

Damaged or spoiled fruit is very costly, as it inflates the price dramatically and often causes other fruit to spoil prematurely.

For example, cherries on sale for \$0.99 a pound are not nearly as good a buy as cherries



Cutting away spoiled and damaged fruit greatly increases the cost per pound of the remaining good fruit.

Vegetables and Fruits, James Underwood Crockett. ©1972 Time-Life

selling for \$1.29 if the former are beginning to mildew. Throwing out the spotted and soggy cherries can easily increase the price to over \$2.00 a pound.

Fruit inspectors learn to pass up cherries that are soft and flabby. They especially avoid those that are sticky or wet. Decay is contagious, and like a bad apple, a bad cherry contaminates nearby good ones.

If one in five cherries is damaged or spoiled, calculate the actual price per pound of a flat of cherries weighing eleven pounds and selling for \$0.99 a pound.

To solve this problem, a fruit inspector must count the cost of the damaged fruit. The actual price paid per pound for the fruit equals the total cost divided by the weight of fruit that was usable.

COUNTING THE COST

The cost equals simply the weight of the flat times the price per pound.

$$\begin{aligned}\text{Price of flat} &= 11 \text{ pounds} \times \$0.99 \text{ per pound} \\ &= \$10.89\end{aligned}$$

If one in five of the cherries is unusable, then only four out of five are usable. That means that for every pound, only four-fifths of the pound (80 percent) can be saved.

$$\begin{aligned}\text{Weight of good fruit} &= 80 \text{ percent} \times 11 \text{ pounds} \\ &= 0.80 \times 11 \\ &= 8.8 \text{ pounds}\end{aligned}$$

$$\begin{aligned}\text{Actual price per pound} &= \$10.89 / 8.8 \text{ pounds} \\ &= \$1.24 \text{ per pound}\end{aligned}$$

If another flat of cherries had only one bad cherry in twenty and sold for \$1.17 per pound, which would be the better buy?

***Be a fruit inspector—
Learn to count the cost of damaged fruit.***

NECTARINES used to bruise very easily and had a very short shelf life. Once bruised, they also decayed quickly. However, most of the varieties now found in stores are much less susceptible to damage. Today's nectarines have an inner flesh that is golden rather than white. They are not nearly as fragile and have a much longer shelf life.

PEARS, too, must be harvested long before they reach full maturity. If left to ripen on the tree they become soft and mushy. Fruit inspectors choose those that are light green in color. As they ripen, they gradually turn from dark green to light green to pale yellow to golden yellow. When overripe, they turn brown.

8 *A fruit inspector looks for the best quality at the best price.*

When you buy canned or frozen fruit, it is usually simple to find the best price. Merely divide the purchase price by the total weight to find out the price per ounce, and then compare the various brands to find the best value.

When you buy fresh fruit, however, it is much more difficult to comparison shop for the best value. For example, two different stores may be selling comparable strawberries. One store advertises them at \$0.79 a pint, while another store advertises them for \$0.98 a pint. Which is the better value?

Be a fruit inspector— Learn to calculate the best price.

Experienced fruit inspectors know that a pint of strawberries can vary in weight considerably. One supermarket may sell strawberries that weigh 10 ounces a pint while the store down the street sells strawberries that weigh as much as 15 ounces a pint.

CALCULATE THE BEST PRICE.

If the pint weighing 10 ounces sells for \$0.79, and the pint weighing 15 ounces sells for \$0.98, which is the better buy?

\$0.79 divided by 10 ounces = \$.079 per ounce
\$0.98 divided by 15 ounces = \$.065 per ounce

The pint that sells for \$0.98 is the better value.

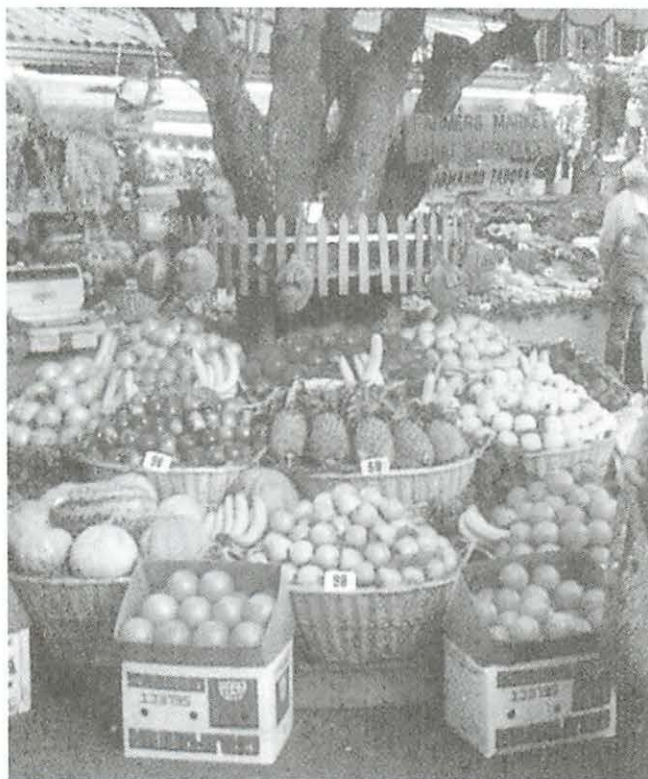
These differences exist because nearly all strawberries are shipped from California and Florida in twelve-pint flats that weigh close to twelve pounds. Each pint weighs approximately one pound (sixteen ounces).

When the berries arrive, most retailers go through the berries to pick out the ones that are

decayed. They then repack the berries in their original pint containers. However, some retailers shake up the berries before repacking them, in order to gain an additional three or four pints per flat.

Most states permit berries to be sold by dry measure rather than by weight and have no legal minimum net weight requirements for a pint basket. However, a careful fruit inspector will check the weight of several pints before buying. As a guideline, a pint of strawberries should not weigh any less than twelve ounces. A pint of blueberries should weigh at least fourteen ounces.

It is relatively easy to understand pints and quarts, ounces and pounds when comparing value. However, many fruits sold are also labeled by sizes, and this system can be confusing.



Fruit that is not sold by dry measure or weight is usually packed in cartons. Florida oranges, grapefruit, and lemons, for example, are packed in standardized cartons that hold four-fifths of a bushel. A "size 36" grapefruit means that it takes thirty-six of these grapefruit to fill the carton.

An orange labeled "size 80" means that it takes eighty oranges of this size to fill the carton. Common grapefruit sizes, from the smallest to the largest, are 48, 40, 36, 32, 27, 23, and 18. Common orange sizes are 125, 100, 80, and 64.



HOW DOES A FRUIT INSPECTOR SELECT THE VERY BEST FRUIT?



Food and Nutrition, Nancy Nugent © 1983 Rodale Press

Government agents inspect fruit for disease and the presence of insects. Wholesale buyers inspect fruit for its "salability." However, the ultimate inspector is the one who actually brings the fruit home and eats it.

Buying fresh fruit is probably one of the most difficult parts of shopping in a supermarket. There are usually no brand names or labels to go by, and each day is different from the day before. For example, apples that were quite good on Monday may be an entirely different variety and come from an entirely different source by Friday.

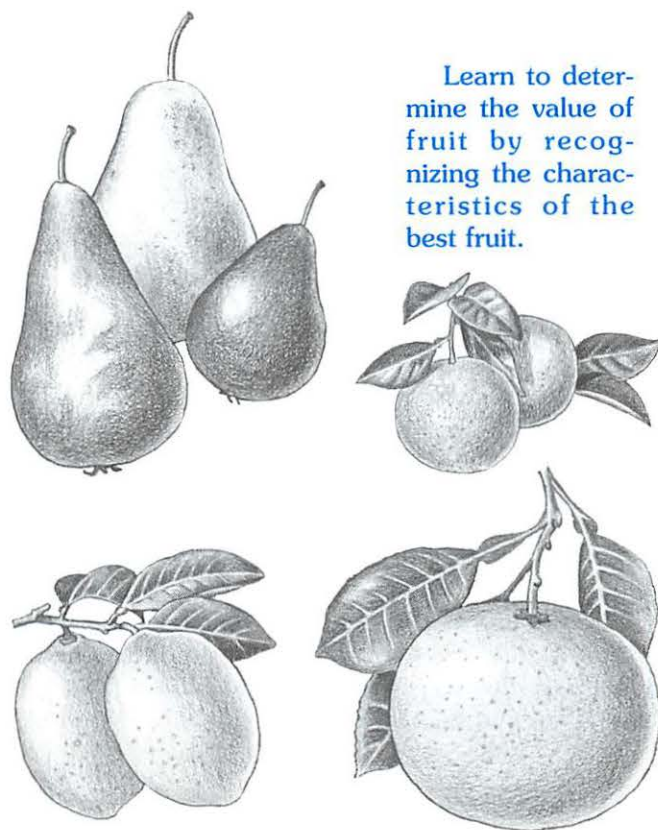
The food industry also contributes to the problem by the words it uses to describe its products. For example, in the vocabulary of advertising the size of ripe olives, "large" is the smallest size available. Other sizes are special super, super colossal, colossal, superjumbo, jumbo, super mammoth, and mammoth.

To make matters worse, prices are no indicator of quality either. With foods such as meat, a \$5.99-per-pound sirloin steak usually tastes better than a \$1.99-per-pound chuck steak. But, a pint of strawberries that costs \$3.99 in December will not taste nearly as good as ones selling for \$0.69 a pint in May.

On the other hand, overripe bananas at \$0.29 a pound may not be as good a buy as the slightly green ones at \$0.39 a pound, unless of course you are prepared to use them right away.

Outward appearances can also be deceiving. The gloss on an apple might be its natural "bloom." Or, it might be simply a deceptive coating that was applied to make the apple look more attractive to the consumer.

Golden yellow peaches might be ones that are perfectly ripe and ready to eat, or they might be hard green ones that were gassed in a truck on their way to the store.



Learn to determine the value of fruit by recognizing the characteristics of the best fruit.

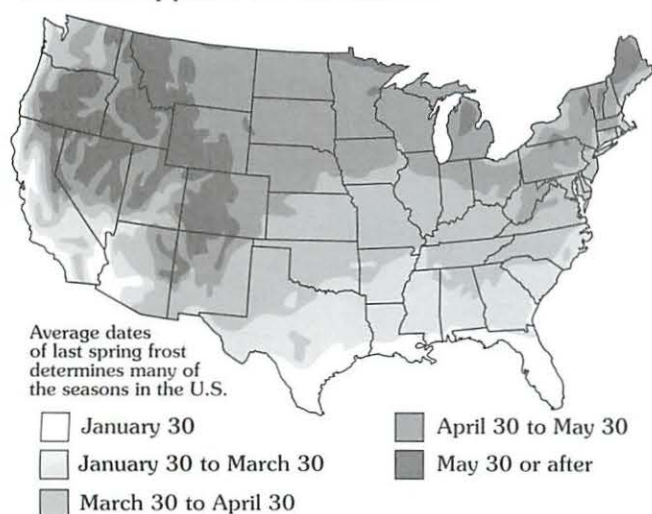
Determining the value of fruit is tricky business and requires the skills of a discerning fruit inspector. It is not enough to merely look on the outward appearance. Inspecting fruit involves every one of the senses. Failure to recognize the difference between "good" and "bad" fruit not only wastes money, but it can also jeopardize a family's health.

1 *A wise fruit inspector knows the seasons for fruit bearing.*

Today it is possible to enjoy almost any kind of fresh fruit year round. Thanks to refrigeration, controlled-atmosphere storage, fast transportation, and newly developed varieties, consumers have come to expect fruit on supermarket shelves all the time.

Unfortunately, consumers have also come to accept lower standards. They pay exorbitant prices for inferior fruit, merely for the privilege of putting it on their tables.

However, a fruit inspector knows that the best quality for any given fruit is still limited to a relatively short season when maturity, sweetness, and ripeness combine to produce a superior value. Discerning fruit inspectors wait for the best fruit. They do not just rush out and purchase whatever appears on the market.



By knowing when fruit is in season, a fruit inspector not only gets the best fruit, but also saves money in the process. Because supply is normally the greatest when the quality is at its peak, prices are often lowest, even when a particular fruit is at its best.

Be a fruit inspector— Know the peak seasons for fruit.

CHERRIES that arrive in stores in early May are usually Tartarians or Burlatts. These are two early varieties that are usually quite costly, but their quality and flavor is only fair, and their fruit is flabby. Discerning fruit inspectors pass up these early ones and wait for Bing cherries to arrive in late May and early June.

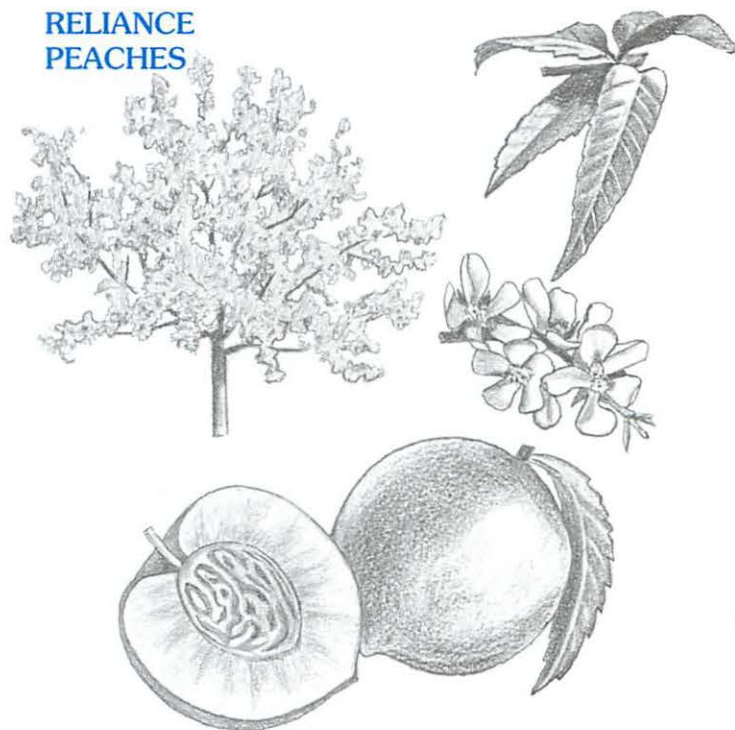
When Bing cherries are at their peak there is simply no better cherry available at any price. Bings are the tastiest, firmest, meatiest, and largest cherries grown. They remain in season until nearly the end of July.

NECTARINES also reach a flavor peak in June and July. At that time they are sweeter, juicier, more flavorful, and less costly than at any other time of the year. During the other ten months, nectarines are not nearly as good. Because these “off-season” nectarines may come from as far away as Chile, transportation costs drive the prices up, and delays in reaching the market drive quality down.

The one exception is a superb crop of nectarines from Pennsylvania and Washington state that mature in September. They are as good as any of the earlier varieties, but are often limited in their availability.

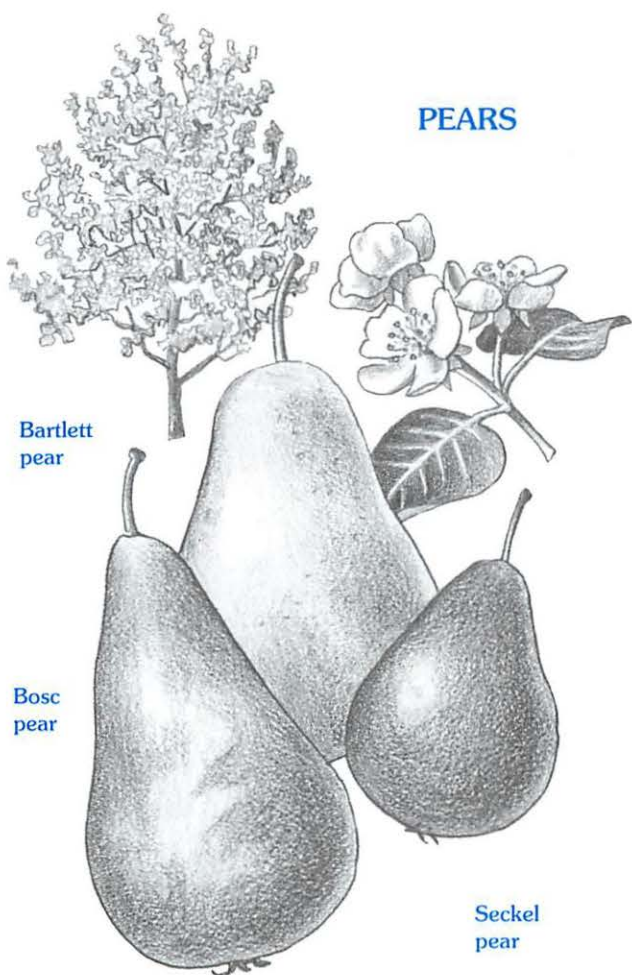
PEACHES that arrive between December and April are undersized and overpriced. They most likely are imported from Chile and are, at best, not very tasty. Patient fruit inspectors wait until mid-June to start buying peaches and stop buying them by mid-September. By the end of September the peaches in the store are coming out of storage and their quality is below par.

RELIANCE PEACHES



BARTLETT PEARS are the world's best-loved, best-selling, best-flavored, most fragrant and best-looking pear on the market. But just because a pear is a Bartlett does not necessarily mean it is at its best. Even Bartletts have a season. While Bartletts usually arrive sometime in late July, the very first ones come from warm, lowland areas. Unfortunately, these early ones seem to ripen overnight. They are too hard one day and too soft the next.

A knowledgeable fruit inspector who waits three to four weeks after the first pears appear will get a much better quality pear. These later Bartletts come from cooler foothills and higher elevations. They remain firm and juicy for a much longer time, even after they reach full color and ripeness.



PLUMS are no exception to the rule. They are best in the peak of their season during June. Plums are available nine months of the year, but early plums—those in the stores during January, February, and March—are usually imported varieties that leave much to be desired.

Santa Rosa plums are the ones to wait for. They arrive in late June and are far superior to the California Red Beauts that flood the market near the end of May. Red Beauts are not a very good eating plum, nor do they keep very well. They are high priced only because they are the first summer plums on the market.

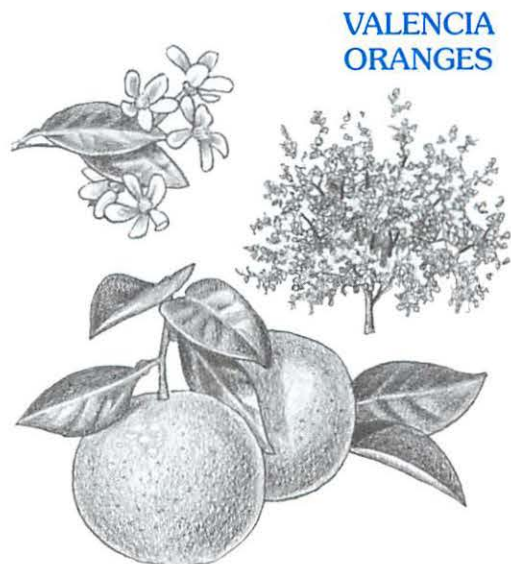
GRAPEFRUIT, although available year round, improve steadily in quality from October through December, reaching their peak in January. January grapefruit come from Florida and Texas and are well worth considering.

California and Arizona grapefruit reach their peak in July, August, and September. However, these latter grapefruit are, at their best, only fair. January through June are the months to buy grapefruit.

ORANGES are hard to tell apart unless you cut into them. For example, the first Florida oranges, called *Hamlins*, arrive in supermarkets in October, looking like superb oranges. They have thin skins, are seedless, and have a good weight to them as well as good color. However, they are full of pulp and have very little juice. What juice that can be squeezed out of them is pale, watery, and lacks flavor.

Florida Pineapple oranges, on the other hand, come to market about four weeks after the Hamlins. They look identical but are just bursting with juice and flavor. (They also have seeds.)

Florida Valencia oranges eventually come in season in late January. At first, they are usually immature and not quite as sweet as the Pineapple oranges. However, even the first Valencias are better than the Hamlins at their peak.



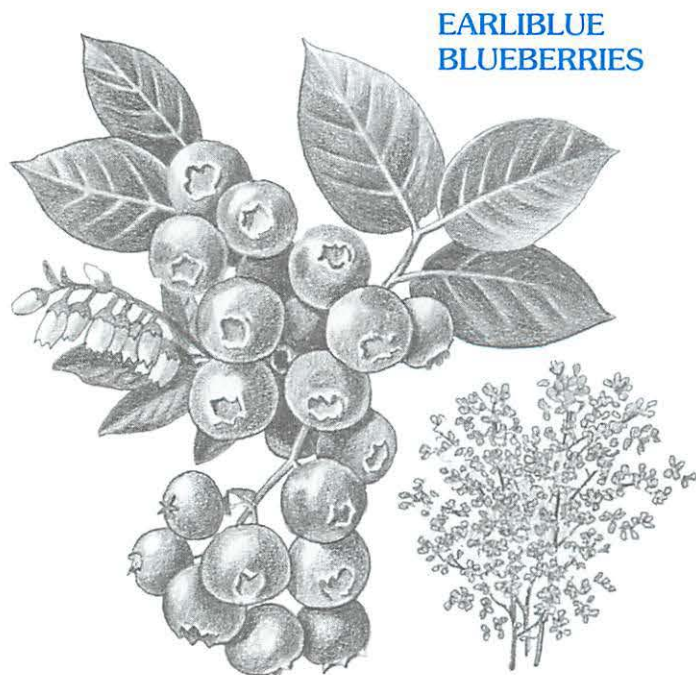
An astute fruit inspector buys Florida Pineapple oranges for several weeks after the Valencias appear and then switches to the Valencias when they reach their peak season.

BANANAS are one exception to the rule of seasons. Because they grow in tropical areas, they are in season twelve months of the year. For the most part, no one month is any better than any other. The supply is both ample and steady, regardless of the season. Even prices remain relatively stable all year long.

Because bananas are in oversupply there is fierce price competition among the countries that export bananas. Vigilant fruit inspectors can find bargains any time of the year.

BLUEBERRIES have one of the shortest seasons. They are available less than five months a year, arriving in May and disappearing in September. The blueberries that are flown in during the winter from the Southern Hemisphere are usually too expensive even to consider.

A new variety of blueberry called *Rabbit Eyes* from northern Florida and Georgia is the first to arrive in early May. North Carolina blueberries arrive late in May. New Jersey's crop begins in June. Oregon ships in July. Michigan, Massachusetts, Washington state, and British Columbia blues come in season in August. By late September they are all gone.

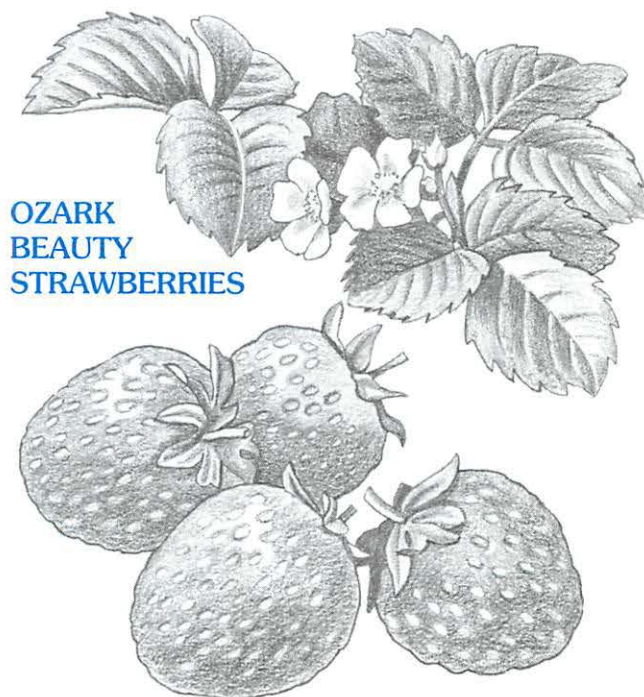


KIWIS, surprisingly enough, are also available in prime condition year-round. Fruit growers introduced them to the United States from New Zealand in 1960 and found that they flourished in Southern California. Their season lasts from May through November.

Because New Zealand's growing season is opposite that of the United States', the kiwis' seasons overlap. As one ends, the other is just reaching its peak.

STRAWBERRIES are grown in all fifty states, including Alaska, and are available in most places all year long. California produces strawberries eleven months a year. In fact, California accounts for more than 75 percent of the total U.S. crop. In 1984, California produced 560 million pounds of strawberries.

New Zealand, Israel, and Mexico also export beautiful strawberries, although they are usually expensive—\$5 or more per pint. However, compared to the marvelous California berries that sell for well under a dollar a pint during their peak season of May and June, they really are not much of a bargain.



CANTALOUPEs offer an economical alternative to other fruits. Because they are at their peak from June to December, they are improving in quality at a time that many other

fruits are past their prime. Their prices are modest. They are low in calories, high in nutrition, relatively easy to keep, and are clearly one of the best buys on the market toward the end of the year.

2 *A wise fruit inspector selects the best variety.*

A discerning fruit inspector recognizes that not all fruits are the same. Each variety has its own distinctive characteristics. In fact, there are often as many differences between varieties as there are between kinds of fruit.



Conduct your own taste test by peeling a Red Delicious, a Golden Delicious, and/or several other varieties of apples so that you do not know which is which. Learn to distinguish each variety by its taste rather than its color. Some of the least expensive varieties are actually the most flavorful and useful.

For example, Red Delicious apples account for more than 40 percent of the total tonnage of apples produced in the United States. However, while Red Delicious apples look good, they fall short on flavor and texture. They cannot be cooked or baked, and many less popular varieties are actually tastier.

Golden Delicious apples are far juicier, sweeter and have a much smoother texture than

do the Red Delicious variety. Golden Delicious apples even cook and bake well. McIntosh apples are juicy, too, and tender when eaten out of hand, but applesauce made from Macs turns into baby food. McIntosh slices dissolve when cooked in pies and, when baked whole, they simply melt in the oven.

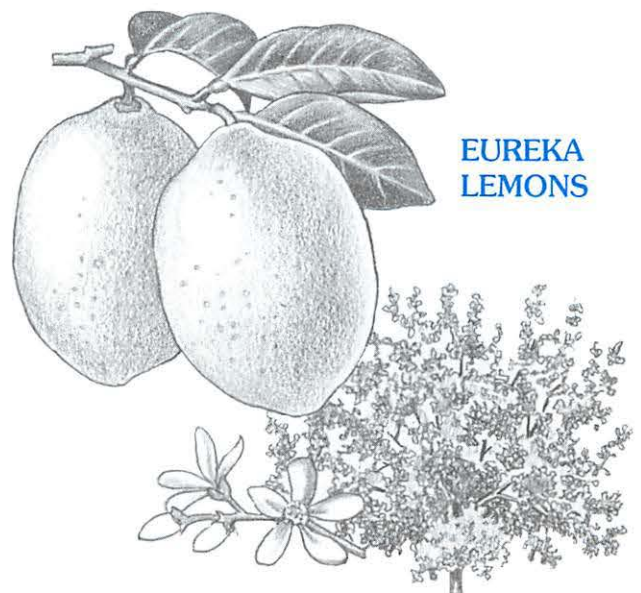
Rome Beauties, on the other hand, are perfect for baking. They lack flavor when eaten raw, but with sugar and spices they cannot be beaten for apple pie. Rhode Island Greenings are also great pie apples and make the very best applesauce. Granny Smiths, on the other hand, offer a tart-sweet flavor and a crunchy texture that make them one of the best fruit buys around.

Be a fruit inspector—Learn the characteristics of the best varieties.

LEMONS, like other fruit, rarely carry a label identifying their particular variety. However, the best quality lemons often carry an individual stamp showing a national logo. Unfortunately, they also carry a premium price.

Many top-quality independent growers, however, send their lemons to market without logos. These unbranded varieties offer shoppers a real bargain if they can recognize quality without the logo. Their fruit is just as good and is often much less expensive.

Knowing how to judge a lemon can give a shopper a real break. Selective fruit inspectors look for firm lemons that feel heavy for their size. They reject those that feel light in weight, are thick-skinned, or seem soft and spongy when squeezed gently.



Since small- and medium-sized lemons have the thinnest skins, they are also known for containing the most juice. Because larger lemons are usually more costly and provide less juice, smaller lemons are often the best buy.

By gently rolling a hard lemon across a flat surface before cutting it, a fruit inspector can actually increase the juice it yields.

Fruit inspectors also know that the color and the “clearness” of a lemon’s skin is no clue to its juice content. Because those with blemished skins sell at lower prices, yet are just as juicy, they offer another advantage to the discerning buyer.

Lemons are usually least expensive in the winter, and limes are least expensive in the summer, so the wise shopper purchases limes and lemons interchangeably to gain the best deal.

GRAPES come in hundreds of colors ranging from red to white to blue. Some are seedless; others are not. Some are large, while others are quite small.

Grape growers distinguish between varieties by noting a grape’s skin type. Many grapes have “slip skins”—skins that separate easily from the flesh of the grape. The slip skin varieties are sold commercially to make jelly and grape juice. They are in season for only two or three months during the fall and are typically quite fragile.

The other major strains of grapes have skins that cling. These are the ones most likely to be eaten out of hand.

Varieties with slip skins are known as American. Those with clinging skins are known as European varieties. Both groups, however, are produced throughout the grape-growing areas of the world. California, for example, is the European grape capital of the U.S. and produces 98 percent of the grapes that grace our tables. In recent years the crop has exceeded more than a billion pounds of grapes annually.

The Thompson seedless grape is perhaps the world’s favorite variety. It is a fairly large, elongated grape, with a tender skin and an excellent flavor. Many Thompsons are imported from Chile between mid-January and May. While other imported fruits do not fare very well during transit, these grapes are the best, regardless of where they come from.

Green (white) seedless Perlettes are grown in the desert-like areas of California. They are round, light green in color, have a tender skin, and are very crisp and crunchy in texture. When they are more yellow than green they are one of the sweetest grapes available. But, when they are jade green in color, they can be very sour.

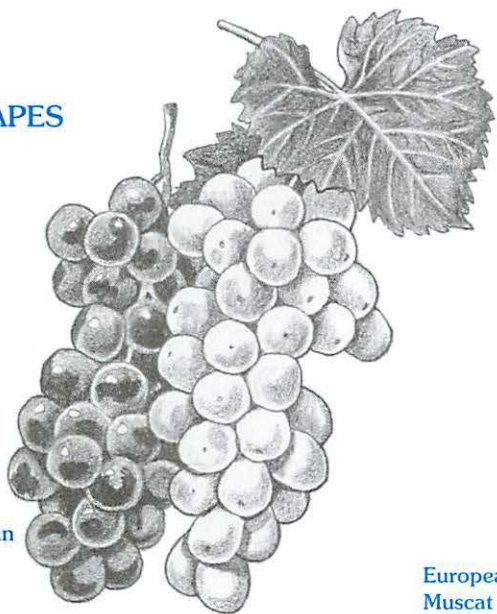
The Flame seedless is a new, red-skinned variety. It is slightly smaller in size, but very crispy and crunchy to eat, and every bit as sweet and flavorful as the Perlettes. Do not pass up these grapes just because they are red.

While seedless grapes are far more popular than the varieties with seeds, knowledgeable fruit inspectors prefer the more flavorful taste of many of the seeded varieties. They know that an aversion to seeds causes many people to miss out on some good bargains.

PLUMS come in assorted sizes, shapes, skin colors, and even flesh colors. They are green, yellow, orange, purple, every shade of red, and black. Some have yellow-colored flesh, while others have red.

GRAPES

American
Buffalo



European
Muscat

PLUMS



Green Gage,
French
Damson,
Santa Rosa,
and Stanley

For the most part, fruit inspectors divide plums into two categories, known as *European* and *Japanese*. European plums are usually purple and freestone, but not always. Japanese plums, on the other hand, are any color but purple. Most are clingstone.

Japanese plums, in spite of their name, grow worldwide. They are tastier and juicier than the European varieties and are best eaten uncooked and out of hand. They collapse when cooked and are not suitable for drying as prunes.

Most European varieties are milder and meatier, and they cook beautifully. European plums are also the only types that are sold as prunes.

Cautious fruit inspectors know to beware of the Simka Rosa plum, also called the New Yorker plum. It has a tiny chip of a pit embedded in the flesh of the plum that remains even after the more obvious main pit has been removed. Many dentists have had to do major repair work after an overeager eater bit into this delicious fruit.

Among European plums, the Damson variety is best for making jams and preserves. The Empress resembles a huge prune, yet has good flavor. The variety to avoid is the President. It looks like a winner, but does not taste very good.

3 *A wise fruit inspector searches out the best sources for fruit.*

Advertisers attempt to present their products in the best light. However, they sometimes border on outright deception. They use words such as "Farm-Fresh," "Home-Grown," "Fresh-Picked," and "Hand-Selected" to suggest that their fruit is somehow better than others on the market.



Milt and Joan Mann

"Hand-picked" does not ensure quality.

Unfortunately, these labels are completely meaningless. "Farm-Fresh" may mean nothing more than that the fruit was fresh when it left the farm. The label does not tell which farm the fruit came from or how long it has been in transit.

"Home-Grown" is just as deceptive. It does not reveal the source either. Since most farms have homes nearby, just about all crops qualify as "Home-Grown."

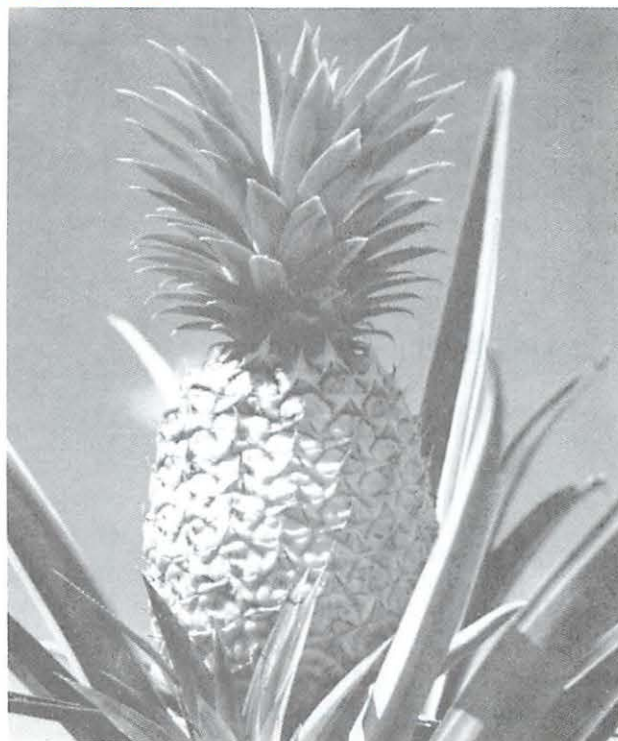
Terms such as "Western-Grown," "Tropical," and "Plantation-Picked" are also meaningless. Fruit inspectors need more information in order to search out the best fruit. They must ignore the nonsense on labels and find out where the fruit really comes from.

Be a fruit inspector— Learn the best sources of fruit.

PINEAPPLE is a tropical fruit that once grew only in Brazil. Today, pineapples appear in grocery stores across the country no more than two or three days after they are harvested.

Pineapples of quality come from just one source: Hawaii. Hawaiian pineapples are slightly more expensive, but they are simply the best around. Other growers from Taiwan, the Philippines, Mexico, and Central America grow the same varieties. However, farmers in these latter areas tend to pick their pineapples while they are too green to reach their full potential of sweetness.

PINEAPPLE



Dole, Inc.

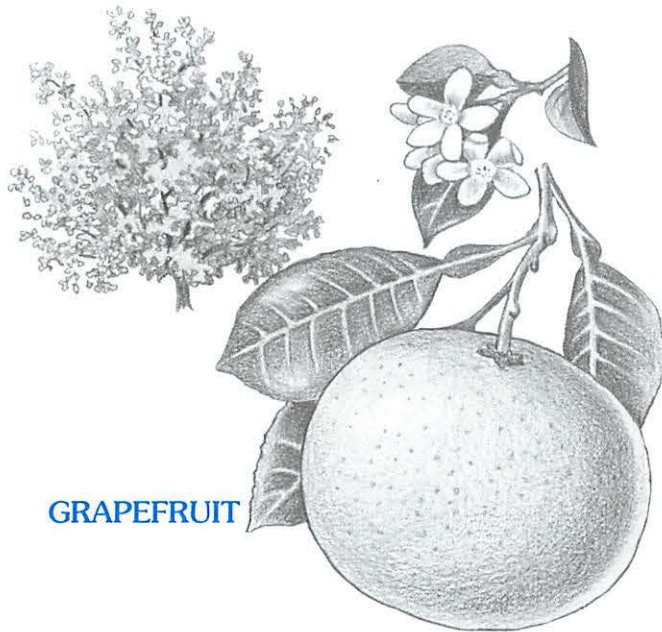
Hawaiian pineapples, on the other hand, show no difference in texture and sweetness between the ones that you purchase locally and ones served fresh in Hawaii. The only real difference is the higher price tag that results from the high cost of air freight.

Latin American pines look virtually identical to Hawaiian pines, but they are usually woody, and are not as juicy and sweet. Even though they are less expensive, they are rarely a better buy.

Fortunately for fruit inspectors, most Hawaiian pineapples have a name tag attached to them. "Royal Hawaiian" and "JET FRESH FROM HAWAII" are the clues to the best pineapples. If the pineapple does not say "Hawaii," look on the back of the label to find out where it originated.

Because labels are oftentimes deceptively similar, fruit inspectors must be careful to read the fine print. If there is no label on a pineapple it is probably a Latin American look-alike.

GRAPEFRUIT are also grown in many areas of the world. Israel, Spain, Greece, Brazil, and Cuba are major producers. However, Florida produces about three out of every four grapefruit eaten in the United States. Texas ranks a distant second.



The best of the best grapefruit come from a relatively small growing area along the east coast of Florida between Palm Beach and Daytona. Fruit inspectors recognize these grapefruit as "Indian River grapefruit." Most Indian River grapefruit wear an inked brand that indicates their source.

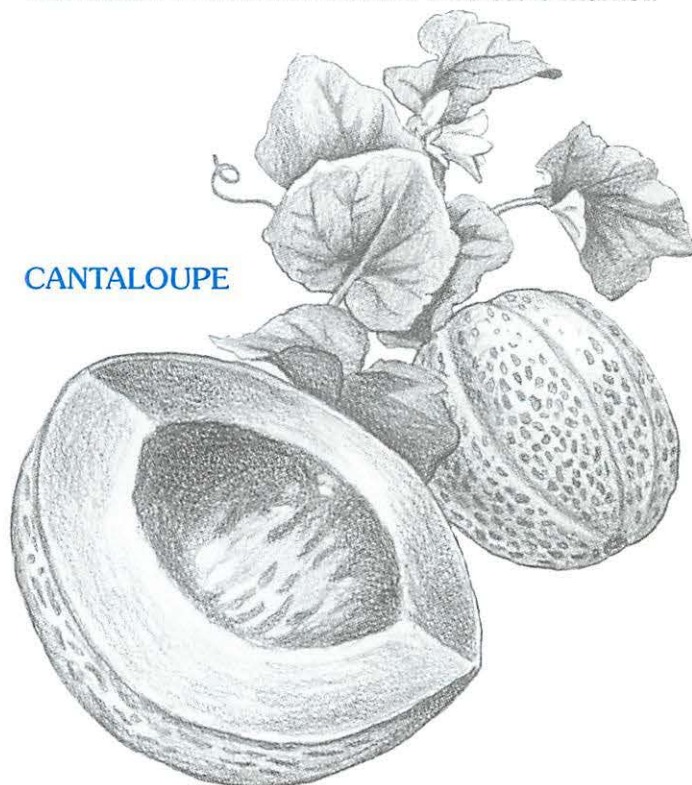
This two-hundred-mile stretch of tropical sunshine is a perfect climate for grapefruit. It is warmed by Gulf Stream waters that shield the groves from frost damage during the winter.

The only better grapefruit in the world come from an Island off the Florida coast known as Orchid Island. These grapefruit will always bear a gummed label reading "Orchid" or "Orchid Island." While they typically command a premium price, they are clearly the best source of quality in the grapefruit market.

Grapefruit grown in central Florida are known as "interior grapefruit" and are of significantly inferior quality. Most are sold to commercial processors. The best Texas grapefruit are known as *Star Rubies* or *Ruby Reds*. When Indian River grapefruit are unavailable, the Texas source is next best.

CANTALOUPE grown in the heart of Dixie are no bargain. In fact, those grown east of the Mississippi are long on size and short on flavor. For the best cantaloupes a fruit inspector must head west. The farther west cantaloupes are grown, the better they taste.

The one exception is a small grower in upstate New York named Hand. Hand cantaloupes are known the world over for their flavor and texture. However, because the demand usually exceeds the supply, most of the crop is sold before it even reaches the wholesale market.



ORANGES grow on both coasts and are available twelve months of the year. On rare occasions imports similar to our California Valencias arrive from Israel, Spain, and North Africa. However soil and climactic conditions produce differences in the color, texture, and juice content of these oranges, even when different sources grow identical varieties.

Florida oranges have thinner skins and more juice than those from California. California oranges, on the other hand, are easier to peel and separate into pieces. Because of their juice content, much of Florida's orange crop is made into frozen concentrate, while California oranges are sold mostly for table use.

PEACHES and PEARS also have their best sources. As a general rule, peaches grown east of the Mississippi are not quite as large, but they are significantly more juicy than those grown in other parts of the country.

Cling peaches from California are usually sold to canners who put up tinned peaches and fruit cocktail and rarely make it to the grocer's fruit aisle.

Among pears, those from New York and Michigan cannot match the pears of the West Coast in size, appearance, and flavor.

4 *A wise fruit inspector counts the cost of damaged fruit.*

Damaged or spoiled fruit is very costly, as it inflates the price dramatically and often causes other fruit to spoil prematurely.

For example, cherries on sale for \$0.99 a pound are not nearly as good a buy as cherries



Cutting away spoiled and damaged fruit greatly increases the cost per pound of the remaining good fruit.

Vegetables and Fruits, James Underwood Crockett. ©1972 Time Life

selling for \$1.29 if the former are beginning to mildew. Throwing out the spotted and soggy cherries can easily increase the price to over \$2.00 a pound.

Fruit inspectors learn to pass up cherries that are soft and flabby. They especially avoid those that are sticky or wet. Decay is contagious, and like a bad apple, a bad cherry contaminates nearby good ones.

If one in five cherries is damaged or spoiled, calculate the actual price per pound of a flat of cherries weighing eleven pounds and selling for \$0.99 a pound.

To solve this problem, a fruit inspector must count the cost of the damaged fruit. The actual price paid per pound for the fruit equals the total cost divided by the weight of fruit that was usable.

COUNTING THE COST

The cost equals simply the weight of the flat times the price per pound.

$$\begin{aligned}\text{Price of flat} &= 11 \text{ pounds} \times \$0.99 \text{ per pound} \\ &= \$10.89\end{aligned}$$

If one in five of the cherries is unusable, then only four out of five are usable. That means that for every pound, only four-fifths of the pound (80 percent) can be saved.

$$\begin{aligned}\text{Weight of good fruit} &= 80 \text{ percent} \times 11 \text{ pounds} \\ &= 0.80 \times 11 \\ &= 8.8 \text{ pounds}\end{aligned}$$

$$\begin{aligned}\text{Actual price per pound} &= \$10.89 / 8.8 \text{ pounds} \\ &= \$1.24 \text{ per pound}\end{aligned}$$

If another flat of cherries had only one bad cherry in twenty and sold for \$1.17 per pound, which would be the better buy?

**Be a fruit inspector—
Learn to count the cost of damaged fruit.**

NECTARINES used to bruise very easily and had a very short shelf life. Once bruised, they also decayed quickly. However, most of the varieties now found in stores are much less susceptible to damage. Today's nectarines have an inner flesh that is golden rather than white. They are not nearly as fragile and have a much longer shelf life.

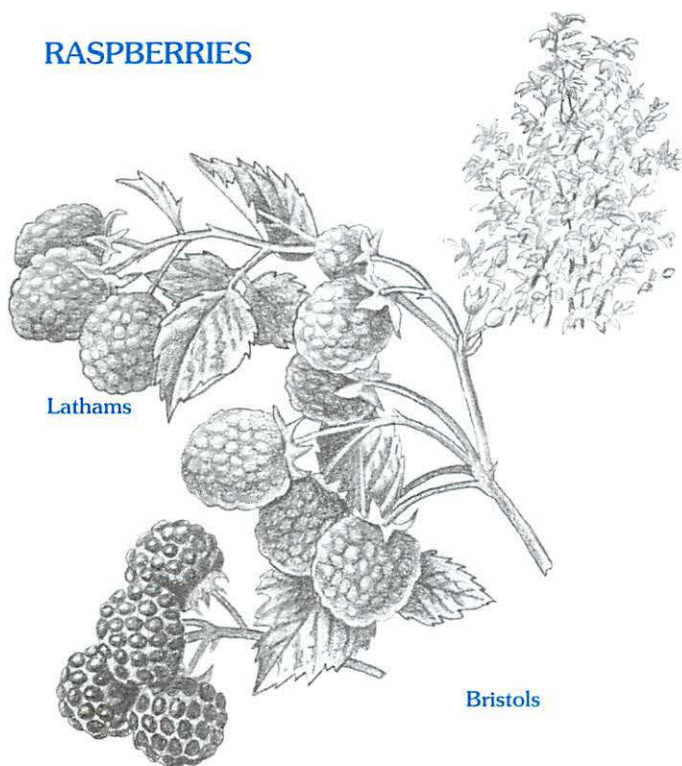
Buying fruit that is ready to eat still poses a problem for discerning fruit inspectors. Ripe nectarines usually cannot stand to be squeezed and dropped by over-zealous shoppers in a self-service produce department. Even the most resistant varieties turn black when bruised and must be discarded.

Overripe and damaged nectarines sometimes go on sale at very low prices. If a fruit inspector can count the cost of the damaged fruit accurately, it may be possible to salvage the damaged fruit and save money at the same time.

By dividing the price-per-pound by the estimated percentage of good fruit that is usable, a fruit inspector can compare the cost of the damaged fruit with whatever else may be available.

RASPBERRIES are so delicate that they are almost impossible to handle and package for sale in supermarkets. At best, they have a shelf life of a day or two after they reach the retail market. Since raspberries are both one of the most expensive and one of the most fragile fruits available, a fruit inspector takes great care in selecting raspberries that are not damaged.

RASPBERRIES



It is the hollow structure of the raspberry that makes it so susceptible to damage. Even the slightest pressure can crush or bruise a berry. Shoppers must also avoid any berries that are

soft, wet, or show any trace of mildew. If berries are stuck together or if there is any trace of stain on the container, it is likely that fewer than half of the berries may be salvageable.

Fruit inspectors do not assume that a high price tag ensures high quality. If raspberries are not firm, colorful, and dry, they are not a good buy. Because they are as perishable as sweet cream, even perfect berries should be used on the same day they are purchased.

BLUEBERRIES must be firm and dry. Those that are soft and wet have been damaged and will eventually need to be discarded. Soft blueberries are soft because they have already started to decay.

A fruit inspector should always check the bottom of a blueberry container for telltale blue stains that disclose the presence of damaged berries. Never purchase damaged blueberries at any cost. Decay spreads so rapidly that even good berries may be rendered unusable before you get them home.

PEARS are also extremely fragile once they are ripe. The only way to ensure undamaged pears is to buy those that are firm and not quite ripe. They can withstand the bumping, squeezing and dropping that occurs at the produce counter. These pears can then be allowed to ripen in the "safety" of your own home for two or three days. Purchasing ready-to-eat pears at the store is asking for trouble.

5 A wise fruit inspector recognizes artificial wax.

Knowledgeable fruit inspectors look for a natural wax-like coating that helps retain moisture and protects many fruits and vegetables from the damaging effects of sunlight. Professionals call this dull protective powder *bloom*.

Because bloom gradually disappears after a fruit is picked, it is a good indicator of freshness. Fruit inspectors use bloom as a guide to quality, especially when selecting blueberries, grapes, plums, and apples. Without this protective shield, fruit tends to shrink and spoil prematurely. This, in turn, leads to higher prices and inferior fruit at the produce counter.

Growers, however, often apply a synthetic wax coating to fruit to prolong its shelf life and

to imitate the fresh look of natural bloom. The Chinese, for example, experimented with wax coatings as far back as the twelfth century. Some artificial coatings come from beef tallow, but others are made from petroleum-based wax.

Because the FDA has approved several forms of artificial bloom for more than sixty years, many consumers cannot distinguish the real thing from the imitation. All citrus fruits and most apples, cucumbers, peppers, pears, yams, tomatoes, squash, avocados, melons, and rutabagas are either sprayed with or dipped in these artificial waxes. Even chocolate candies are sometimes sprayed with artificial bloom.

Be a fruit inspector—Learn to recognize the bloom of freshness.

GRAPES of quality are known by their bloom. The heavier the bloom, the fresher the grape. While bloom is more evident on darker grapes, even the lighter ones have enough bloom to be a significant factor in their selection.

The bloom on grapes lasts from one to two weeks. It does not rub off nor can it be washed off in cold water. Instead it gradually evaporates into the air. As the bloom disappears, grapes begin to break down, shrink, and age. Look for grapes that have a dull finish that does not rub off when touched.

BLUEBERRIES also exhibit considerable bloom. In fact, bloom is an effective way to judge a blueberry's worth. Fresh blueberries have a powdery, light blue color, as if they have been dusted. As the bloom evaporates, their color changes from light blue to almost black. Dark blueberries are not nearly as fresh, firm, or flavorful as light-colored ones.

6 ***A wise fruit inspector identifies the color and feel of maturity.***

The way to judge the maturity and sweetness of a watermelon is to put it to the test. If possible, taste a sample. Fruit inspectors know that thumping a watermelon to check its maturity is an exercise in frustration. They know that size, sound, shape, and color are no indicators of flavor or sweetness.

The only slight clue to the maturity of a watermelon is the condition of its stem or

“pigtail.” If a watermelon’s stem is fresh and green, it is likely to be less than ripe. As it ripens for a few more days, the pigtail shrivels and discolors, and the watermelon matures and gets sweeter.

However, after a few more days the pig tail falls off. At that point the watermelon is probably overripe.



A mature watermelon will have dark red flesh. If it is pink, it is not mature, and it will lack sweetness and flavor. On the other hand, if the flesh is soft or broken, it may be overripe and will taste mushy. Fruit inspectors know that even perfect watermelons are not uniformly mature. The “blossom” end is always more mature and sweet than the “stem” end.

Be a fruit inspector—Learn to identify the color and feel of maturity.

KIWIS are less than attractive on the outside, but they are more than sweet on the inside. They have a smooth texture and a tangy flavor that is somewhere between a watermelon, a strawberry, and a grape. They look like large, fuzzy eggs, but cutting them open reveals an attractive green flesh with hundreds of tiny seeds arranged in neat geometric patterns.

Kiwis’ sweetness and unique flavor add a refreshing tang to iced tea or punch. However,

kiwis are certainly juicy enough to be served on their own.

To judge the maturity of a kiwi, look for fruit that “gives” just slightly when squeezed gently. Take these firm fruit home and let them ripen for about a week to allow them to build up their level of sweetness.

Since kiwis are usually expensive and are sold by the piece rather than by the pound, fruit inspectors select only quality pieces.



KIWI

HONEYDEW MELONS offer four clues to their maturity. The sweetest honeydew melons are noted by their fragrance, skin color, skin texture, and a slight “give” when squeezed gently at the “blossom” end. A ripe honeydew actually smells like a fragrant flower, while a hard, immature melon has almost no odor at all.

Likewise, the skin of a sweet honeydew is the color of creamery butter. Those that are still immature remain chalky white, pale green, or canary yellow. However, do not pass up the melon with freckles or one that has a netting or a ribbing covering its skin. These characteristics are clues to an exceptionally high sugar content.

A true, vine-ripened honeydew will feel velvety and slightly tacky. Immature honeydews, on the other hand, will feel smooth and slick. Honeydews that are past their prime go “slurp” when you shake them. Eating them could result in an upset stomach.

GRAPEFRUIT are difficult to judge, because neither size, skin color, nor flesh color are clues to their maturity. A fruit inspector must check the weight and shape of the fruit as well as firmness and skin texture. The thinner the skin

and the heavier the fruit, the higher its juice content.

The clues to a thin-skinned grapefruit are a slick, smooth-as-glass feeling. One with lots of pores and that feels rough has a thick skin. Those grapefruit that come to a point at the stem end should be rejected, because they will be neither sweet nor juicy.

PINEAPPLES ripen no further once they are picked. They will be sweet and juicy only if they are allowed to reach full maturity while still attached to a stalk. If picked too early, they tend to be woody in texture and not very sweet. If chilled, they turn black. If overheated, they turn soft and develop spots of decay.

When selecting pineapples, first read the tag to determine their source. Then select the largest and firmest of the lot. Hawaiian growers claim that color is not a clue to sweetness. They say that green-shelled pineapples are just as sweet as those that show a trace of gold or orange color.

Discerning fruit inspectors, however, believe that a bit of color makes the pineapple just that much sweeter and juicier. The flesh of a fully ripe pineapple will appear to be glossy and wet when it is fully ripe and at the peak of sweetness.

Never store a pineapple in the refrigerator, and never buy one with two tops. Double-topped pineapples have two cores that waste a significant amount of fruit.

GRAPES reveal their sweetness by their color. The greener the grape, the lower the sugar content. The yellower the grape, the sweeter the grape. Red varieties are also sweeter as they get redder. Likewise, the darker a blue grape gets, the sweeter it tastes.

7 A wise fruit inspector knows what fruit ripens after picking.

Apples, cherries, grapes, and most berries do not ripen after they are picked. However, many fruits such as bananas have the potential to ripen considerably more after they are harvested. In fact, most bananas are harvested while they are grass green and hard as a rock. Bananas ripened on the tree are soft, oily, extremely fragile, and do not taste nearly as good as those allowed to ripen on your counter at home.

Most importers of bananas ship them long before they are ripe and then allow them to ripen while they are still in their shipping boxes. They wait in sealed "banana rooms," where the temperature and humidity are carefully controlled. These rooms use ethylene gas that is much like the gas produced by naturally ripening bananas to accelerate the ripening process. As the bananas gradually ripen, they turn from grass green to golden yellow.

When purchasing bananas, fruit inspectors look for green or light yellow ones and then let them ripen at room temperature at home. Once bananas turn golden yellow, they begin to freckle as the inner flesh gets softer and sweeter. However, if the bananas are not used, the freckles will continue to grow until the whole skin turns brown.

Be a fruit inspector—

Know what fruit will ripen after picking.

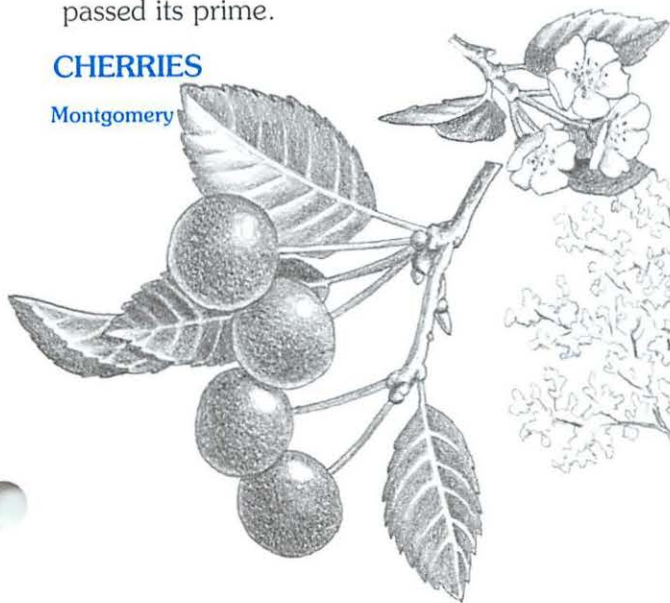
HONEYDEW melons will not ripen after they are picked. No matter how they are incubated, they will not become any sweeter or softer. If a picker picks an immature honeydew melon, the consumer will have an immature melon.

CHERRIES do not ripen after they are picked, either. "What you see is what you get." Fruit inspectors should select the firmest, darkest, ripest, freshest, and largest cherries available.

The key to the freshness of a cherry is the condition of its stem. A fresh cherry will always have a green stem that is firmly attached to the fruit. A stem that has started to discolor or one that has dropped off indicates that the cherry has passed its prime.

CHERRIES

Montgomery



APPLES, too, must ripen on the tree and then be refrigerated immediately for best results. If allowed to sit on a counter at room temperature for several days, they tend to grow mushy, and any bruised spots begin to rot.

STONE FRUITS such as nectarines, peaches, and plums continue to ripen off the tree after they are harvested. In fact, most fruit inspectors purposely select firm, unripe fruit and then allow it to ripen at room temperature for several days. Once these fruits have ripened fully, however, they must be stored in a refrigerator to prevent them from overripening.

Fruit inspectors look for firm, colorful, unbruised fruit. If it is too green in color it may shrink, shrivel up, and not ripen properly. Fruit that is tree-ripened is often too soft to ship and gets badly bruised in transit.

Avoid small stone fruits, because they were likely picked prior to maturity. Medium-sized fruits are every bit as flavorful and usually less expensive than the larger, premium grades.

When it comes to stone fruits, the general rule is that slightly underripe is preferable to overripe. The one exception is the apricot. Apricots are at their best when their textures are almost liquid. Apricots are normally harvested while quite firm and then allowed to ripen gradually at room temperature until they reach their peak of flavor.

However, apricots that are picked when green tend to shrink and shrivel rather than ripen. Do not purchase apricots that are dark green; they will never ripen.

APRICOTS



Sungold

PEARS, too, must be harvested long before they reach full maturity. If left to ripen on the tree they become soft and mushy. Fruit inspectors choose those that are light green in color. As they ripen, they gradually turn from dark green to light green to pale yellow to golden yellow. When overripe, they turn brown.

8 *A fruit inspector looks for the best quality at the best price.*

When you buy canned or frozen fruit, it is usually simple to find the best price. Merely divide the purchase price by the total weight to find out the price per ounce, and then compare the various brands to find the best value.

When you buy fresh fruit, however, it is much more difficult to comparison shop for the best value. For example, two different stores may be selling comparable strawberries. One store advertises them at \$0.79 a pint, while another store advertises them for \$0.98 a pint. Which is the better value?

Be a fruit inspector— Learn to calculate the best price.

Experienced fruit inspectors know that a pint of strawberries can vary in weight considerably. One supermarket may sell strawberries that weigh 10 ounces a pint while the store down the street sells strawberries that weigh as much as 15 ounces a pint.

CALCULATE THE BEST PRICE.

If the pint weighing 10 ounces sells for \$0.79, and the pint weighing 15 ounces sells for \$0.98, which is the better buy?

$\$0.79 \text{ divided by } 10 \text{ ounces} = \0.079 per ounce
 $\$0.98 \text{ divided by } 15 \text{ ounces} = \0.065 per ounce

The pint that sells for \$0.98 is the better value.

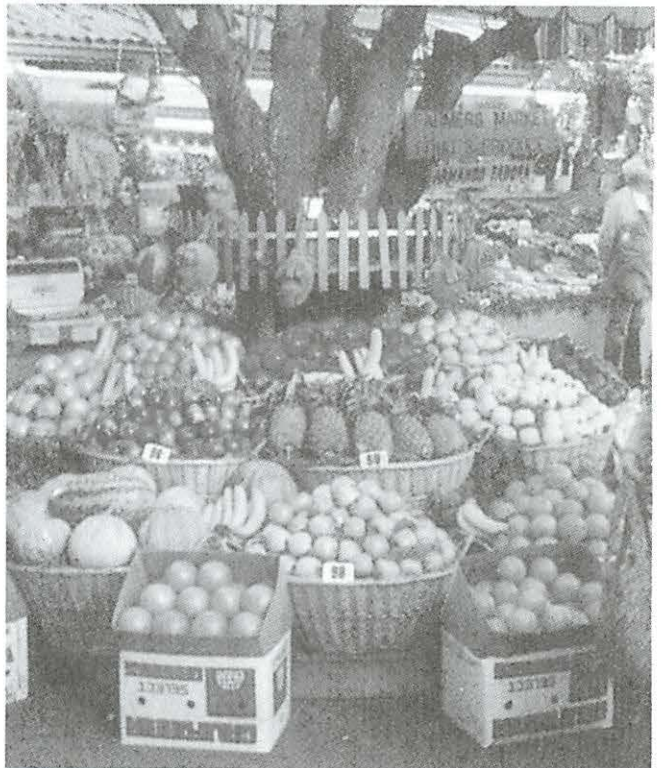
These differences exist because nearly all strawberries are shipped from California and Florida in twelve-pint flats that weigh close to twelve pounds. Each pint weighs approximately one pound (sixteen ounces).

When the berries arrive, most retailers go through the berries to pick out the ones that are

decayed. They then repack the berries in their original pint containers. However, some retailers shake up the berries before repacking them, in order to gain an additional three or four pints per flat.

Most states permit berries to be sold by dry measure rather than by weight and have no legal minimum net weight requirements for a pint basket. However, a careful fruit inspector will check the weight of several pints before buying. As a guideline, a pint of strawberries should not weigh any less than twelve ounces. A pint of blueberries should weigh at least fourteen ounces.

It is relatively easy to understand pints and quarts, ounces and pounds when comparing value. However, many fruits sold are also labeled by sizes, and this system can be confusing.



Fruit that is not sold by dry measure or weight is usually packed in cartons. Florida oranges, grapefruit, and lemons, for example, are packed in standardized cartons that hold four-fifths of a bushel. A "size 36" grapefruit means that it takes thirty-six of these grapefruit to fill the carton.

An orange labeled "size 80" means that it takes eighty oranges of this size to fill the carton. Common grapefruit sizes, from the smallest to the largest, are 48, 40, 36, 32, 27, 23, and 18. Common orange sizes are 125, 100, 80, and 64.

Limes, although sized the same way, are packed in cartons that hold only one-fifth of a bushel. That means that a “size 36” lime is not nearly as large as a “size 36” grapefruit; it is about one-fourth the size.

Cherries and plums, on the other hand, are sized by the number that fit in a row. When cherries and plums were once hand-packed, the number of pieces of fruit fitting in a single row of the top layer of the packing box was recorded as the size.

Cherries, now shipped loose in twenty-pound containers, are still labeled as 12, 11½, 11, 10½, and 10. “Twelves” are the smallest, and “tens” are the largest. Plums, when poured into twenty-eight-pound cartons, are labeled 4×5, 4×4, and 3×4. Kiwi fruit normally runs in sizes 36, 33, and 30.

Pineapples are usually sized by the number that fit into a box. There may be 6, 8, or 10. “Tens” are the smallest, and “sixes” are the largest. However, because “size 6” pineapples are usually shipped “jet-fresh” and come in smaller boxes, “size 6” pineapples are smaller than “size 8s.”

The general principle to follow is: The smaller the number, the larger the fruit. And the larger the fruit, the less waste there is from the skin or the seeds in the center. If two stores are selling grapefruit for \$1.09 a pound, but one is a “size 36” and the other is a “size 40,” the “size 36” is the better value.

Fruits such as apples, peaches, and nectarines are sized according to their diameters. That makes it easy. A 2½-inch peach is larger than one labeled “2.” Grapes and bananas are not sized.

9 *A fruit inspector looks for fruit that keeps well.*

God designed fruits and vegetables to self-destruct if they are not used at the proper season. In fact, all fruits appear to have a built-in time clock that limits shelf life, even under proper storage conditions. Because each type of fruit has a different time clock, a fruit inspector must learn to recognize fruit that keeps well.

Perishable fruits such as raspberries deteriorate rapidly after being harvested, but hardier fruits such as winter squash keep quite well for several months.

Tropical fruits such as bananas, mangoes, avocados, papayas and pineapples generally have

fast-ticking clocks and usually cannot take sustained temperatures below 50°F. This makes it impossible to store them in a refrigerator.

Other fruits, however, such as apples, oranges, and grapefruit keep quite nicely at around 35°F. In fact, refrigeration can retard the spoilage of many fruits. Fruit inspectors know that most unripe fruit will not ripen properly under refrigeration, but most ready-to-eat fruit must be refrigerated if it is to be kept for any period of time.

Be a fruit inspector— Learn how to keep fruit from spoiling.

APPLES keep exceptionally well in controlled-atmosphere (CA) storage compartments. In fact, CA can more than double the storage life of apples and has greatly extended the shelf life of grapes and pears.



Controlled-atmosphere storage requires roughly 77 percent nitrogen, 18 percent carbon dioxide, and 5 percent oxygen. Growers seal fruit in refrigerated storage rooms, and this literally anesthetizes the fruit and puts it into a state of suspended vegetation. It also limits shrinkage and helps retain flavor and texture.

The **QUINCE** tree looks more like a rose bush than a fruit tree. However, it produces delicious fruit. Quince fruit looks somewhat like a short, squatty, woolly pear. As it ripens, the skin turns yellow and is smooth and fuzzy to the touch. Growers remove most of the fuzz with mechanical brushes before it reaches the market.

One of the advantages of quince is that it keeps for months without refrigeration. If left in a cool place it remains firm and tart without any

because there was a general reaction to any form of national taxation.

One of these leaders was Thomas Jefferson. He proposed a national lottery as a means of obtaining financial backing for the government.

However, in the years that followed, government leaders began to recognize the devastation that accompanied legalized gambling. As state governments tried to maintain control over the extent of gambling, it became apparent that the general public suffered more at the hand of legalized gambling than they benefited from any financial gain.

By the 1830s, every state in the Union had repudiated the lottery as a means of gaining public funds. Many states passed stringent laws against all forms of gambling.

These laws were not the result of pressure from religious groups, but rather they were the result of outrage against the fraud, economic ills, and relatively small returns that were gained for the government or other worthy causes.

It was obvious to all that the gambling business defied all efforts at control. The racketeers won, and the people lost. For these reasons, both business leaders and political leaders rejected legalized gambling.

The sentiment of the times against gambling is reflected in the following statement:

"The great mass of worthy citizens of New York and Massachusetts and Pennsylvania a century ago was opposed to public lotteries, not on abstract ethical grounds, but on the ground that they had become a serious social evil. . . . The campaigners against lotteries were primarily businessmen and professional men who saw around them everywhere the growing menace of the public lottery of the day."

Newspapers in New York, Baltimore, Philadelphia, and Boston reported on gambling corruption and called upon citizens to rise up and drive the gamblers out of business. In some cases rioting citizens did just that.

Forced out of the eastern cities, gamblers went westward. They found open opportunities in the new frontier: on the riverboats of the Midlands, in the saloons of the cattle country, and in the mining camps of the Far West.

The prosperity and corruption of open gambling had its effect upon the people, as reported by Bishop William Taylor, a Methodist missionary to San Francisco in 1850.

"I am aware of ministers who swear and curse, of deacons seen at the gambling tables, and church members watching their successes at roulette. . . . I have heard the professed gamblers say that money is so plentiful and easy to be made and, consequently, betting is so high that it is necessary for them to cheat more than usual to hold their own."



Clever gamblers would use sleight of hand in the famous shell game to take advantage of unsuspecting victims.

During the carpetbagger era, one of the most sinister legalized gambling operations in the history of the country was established.

Organizers paid \$50,000 in bribes to secure legislative approval for the Louisiana Lottery Company. From its inception in 1869, continued graft was paid to the state government.

With clever promotion, the company grew in opulence and political influence. For twenty years it controlled the state of Louisiana. It bought politicians and newspapers. With an income of thirty million dollars a year, only a pittance was turned over to the charitable causes fronting for it.

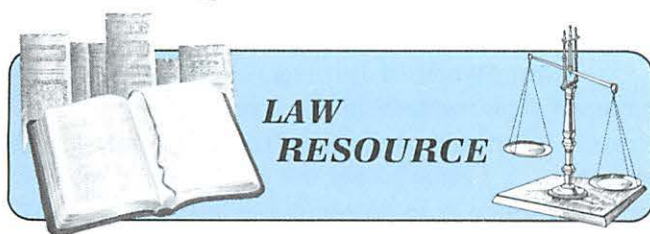
By 1890, growing opposition from state and federal leaders threatened the Louisiana gambling machine.



Dictionary of American Portraits
Benjamin Harrison
1833-1901

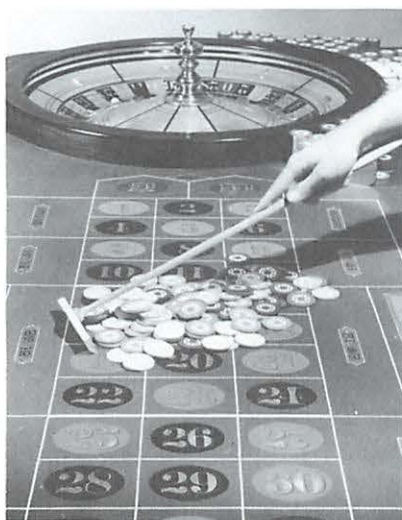
President Benjamin Harrison, in a special message to Congress on July 30, 1890, called for federal laws which would curtail the "corrupting touch" of the Louisiana Lottery throughout the United States.

Congress enacted a law prohibiting the use of the United States mail for the transmission of



LAW RESOURCE

HOW ARE LAWS WHICH ALLOW GAMBLING LIKE MASKS WHICH DISGUISE FALSE PROPHETS?



Getty Images

The appeal of instant riches from gambling and the alluring words of false prophets are too tempting for many people to resist. Therefore, it is the job of responsible leadership to protect citizens from these dangers which damage individuals, families, and society.

When a laboring man believes that if luck is with him he could win a fortune, solve all his future financial problems, and be free from work for the rest of his days, he is deceived. His attitude toward work will change. No longer will his daily job be viewed as a normal and necessary part of life, but rather it will be seen as an unfortunate penalty to those who are not lucky enough to get out of it.

The idea of enjoying life with no labor challenges a basic mandate which God gave to men: *"In the sweat of thy face shalt thou eat bread, till thou return unto the ground . . ."* (Genesis 3:19).

The widespread acceptance of this deception is evidenced by the fact that gambling is protected by laws in forty-eight states and the District of Columbia. Only Hawaii and Utah prohibit gambling.

The History of Gambling

The discovery of the American continent in 1492 inspired hundreds of Europeans to abandon the security of their homeland for the prospect of "striking it rich" in the New World.

The passion for instant riches was inbred in these early settlers. When their dreams of finding natural wealth were frustrated, many turned to gambling as a means of making an easy living rather than humbling themselves to common labor.

When the Puritans arrived in America and sought refuge in the largely ungoverned continent, they established Biblical principles by which to rule their communities.

Cotton Mather explained the Puritans' rejection of any association with gambling by this statement: "Lots, being mentioned in the sacred oracles of Scripture as used only in weighty cases and as an acknowledgement of God sitting in judgement . . . cannot be made the tools and parts of our common sports, without, at least, such an appearance of evil as is forbidden in the Word of God."



Dictionary of American Portraits

Cotton Mather
1663-1728

Consequently, lots, cards, and dice were completely banned in the Puritan colonies of Massachusetts and Connecticut during the 1670s.

Meanwhile, the tobacco plantations of the South became the scene of bear-baiting, gander-pulling, cock-fighting, and other violent forms of gambling. By the early 1700s, lotteries had become a main source of income for many of the early American colleges such as Harvard, Columbia, Yale, and Dartmouth.

Despite the early Puritan stand against gambling, colonial churches also began to indulge in the promise of easy support. In 1753, Christ Church in Philadelphia raised a steeple through funds acquired by lottery.

Several key political figures supported the practice of lotteries



Dictionary of American Portraits

Thomas Jefferson
1743-1826

because there was a general reaction to any form of national taxation.

One of these leaders was Thomas Jefferson. He proposed a national lottery as a means of obtaining financial backing for the government.

However, in the years that followed, government leaders began to recognize the devastation that accompanied legalized gambling. As state governments tried to maintain control over the extent of gambling, it became apparent that the general public suffered more at the hand of legalized gambling than they benefited from any financial gain.

By the 1830s, every state in the Union had repudiated the lottery as a means of gaining public funds. Many states passed stringent laws against all forms of gambling.

These laws were not the result of pressure from religious groups, but rather they were the result of outrage against the fraud, economic ills, and relatively small returns that were gained for the government or other worthy causes.

It was obvious to all that the gambling business defied all efforts at control. The racketeers won, and the people lost. For these reasons, both business leaders and political leaders rejected legalized gambling.

The sentiment of the times against gambling is reflected in the following statement:

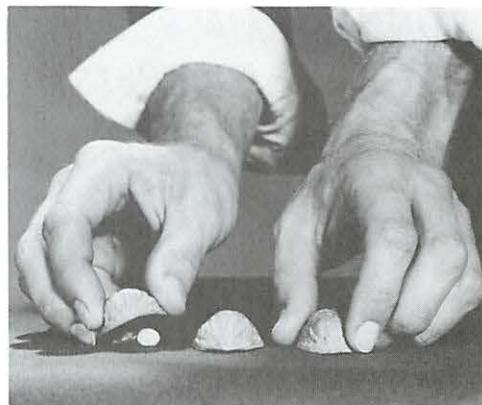
"The great mass of worthy citizens of New York and Massachusetts and Pennsylvania a century ago was opposed to public lotteries, not on abstract ethical grounds, but on the ground that they had become a serious social evil. . . . The campaigners against lotteries were primarily businessmen and professional men who saw around them everywhere the growing menace of the public lottery of the day."

Newspapers in New York, Baltimore, Philadelphia, and Boston reported on gambling corruption and called upon citizens to rise up and drive the gamblers out of business. In some cases rioting citizens did just that.

Forced out of the eastern cities, gamblers went westward. They found open opportunities in the new frontier: on the riverboats of the Midlands, in the saloons of the cattle country, and in the mining camps of the Far West.

The prosperity and corruption of open gambling had its effect upon the people, as reported by Bishop William Taylor, a Methodist missionary to San Francisco in 1850.

"I am aware of ministers who swear and curse, of deacons seen at the gambling tables, and church members watching their successes at roulette. . . . I have heard the professed gamblers say that money is so plentiful and easy to be made and, consequently, betting is so high that it is necessary for them to cheat more than usual to hold their own."



Clever gamblers would use sleight of hand in the famous shell game to take advantage of unsuspecting victims.

During the carpetbagger era, one of the most sinister legalized gambling operations in the history of the country was established.

Organizers paid \$50,000 in bribes to secure legislative approval for the Louisiana Lottery Company. From its inception in 1869, continued graft was paid to the state government.

With clever promotion, the company grew in opulence and political influence. For twenty years it controlled the state of Louisiana. It bought politicians and newspapers. With an income of thirty million dollars a year, only a pittance was turned over to the charitable causes fronting for it.

By 1890, growing opposition from state and federal leaders threatened the Louisiana gambling machine.

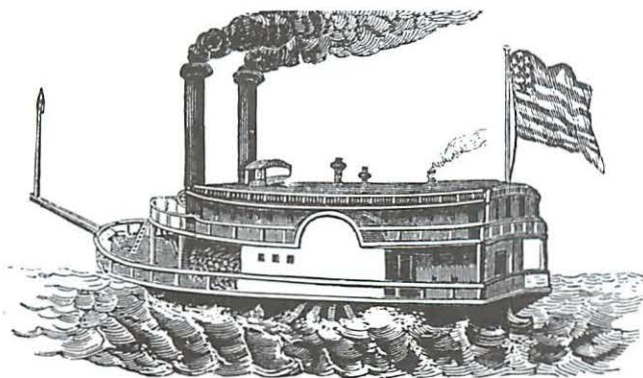


Dictionary of American Portraits
Benjamin Harrison
1833-1901

President Benjamin Harrison, in a special message to Congress on July 30, 1890, called for federal laws which would curtail the "corrupting touch" of the Louisiana Lottery throughout the United States.

Congress enacted a law prohibiting the use of the United States mail for the transmission of

lottery tickets. In Louisiana, with the debauchery of twenty-five years of gambling in the minds of the voters, an anti-gambling slate of state officers was elected. The lottery company was dispatched in 1894.



As riverboat gambling is revived in our day, we will also have the social evils that accompany it.

After considerable experimentation with legalized gambling, especially the lottery, most American states passed laws prohibiting various forms of gambling. Nevada has been a notorious exception.

In 1962, the 575-member National Collegiate Athletic Association sought congressional action to make sports bribery a federal offense. Their action grew out of a decade of baseball, football, and basketball scandals.

During this time the administration stepped up the federal warfare against organized crime and gambling.

New legislation curtailed the interstate transmission of gambling paraphernalia and information such as party cards, race wire services, and slot machines (except in states where gambling was legal). The Justice Department also increased its prosecution of federal gambling regulations.

There is now a contradictory movement to reestablish state lotteries and legalize bingo for charitable causes.

We would do well to heed the comments of Herbert Miller, an official in the criminal division of the Department of Justice.

"The history of lotteries in this country indicates that each time a state used them as a source of revenue, a large share of the take went to the promoters of the lottery, in spite of the controls enacted along with the lottery legislation."

The Definition of Gambling

The *American Heritage Dictionary* defines the act of gambling as "to bet money on the outcome of a game, contest, or other event; to play a game of chance for money or other stakes."

One could reasonably argue that gambling is also defined as taking a risk with the hope of greater returns and that this would include many legitimate business ventures.

It is to avoid this confusion that God defines the deeper motives of gambling. One motive is the desire for quick riches. God condemns any activity based on this motive: "*He that hasteth to be rich hath an evil eye, and considereth not that poverty shall come upon him*" (Proverbs 28:22).

The motive of quick riches is directly related to greed, and God warns, "*He that is greedy of gain troubleth his own house . . .*" (Proverbs 15:27).

Greed, in turn, is related to the love of money, which God identifies as "the root of all evil." To love money is to build one's life around it and sacrifice God-given relationships, responsibilities, and principles in order to increase wealth.

Gambling technically includes all of the following activities:

- Betting
- Lotteries, legal or illegal
- Raffles for whatever cause
- Speculating in the stock market

In certain activities, a person may take a chance with no risk of personal loss and, thus, conceivably avoid gambling. However, he would do well to question his motives for becoming involved in these activities, such as the following:

- Sweepstakes
- Grand-opening drawings

One who participates in these innocent-sounding ventures is not aware that his name is placed on special lists and sold to other companies who view him as a prime prospect for get-rich-quick schemes.

Gambling does not include rewards for the demonstration of skills. Scripture, in fact, compares the Christian life to a race which all run but which only one wins. Winning a race involves valuable rewards which serve to motivate the runner to prepare with disciplines and to do his best during the race.

The definition of *gambling* according to *Black's Law Dictionary* is "the dealing, operating, carrying on, conducting, maintaining, or exposing for pay of any game.

"Making a bet. To plan or game for money or other stake; hence to stake money or other things of value on an uncertain event. It involves not only chance, but a hope of getting something beyond the amount played.

"Gambling consists of a consideration, an element of chance, and a reward."

THE LEGAL REMEDY FOR LOSSES FROM GAMBLING

States that prohibit gambling have strict laws to make gambling unprofitable for those who want to engage in it. In these states, any contract based on gambling is null and void and can be set aside in a court of law.

Various states also allow the loser to bring legal action against the winner in order to recover money or goods that were lost.

Illinois statute allows anyone to sue the winner, if the loser fails to do so within six months. After the court determines the loss, triple damages will be charged against the winner.

These laws are necessary to protect society from the following evils which accompany gambling.

The Crimes Spawned by Gambling

A host of illegal operations are financed by crime syndicates that thrive on gambling:

- **ILLICIT NARCOTICS TRAFFIC**
- **PROSTITUTION**
- **LOAN SHARKS**
- **INVASION AND RACKETEERING OF LEGITIMATE BUSINESSES**
- **MOB CONTROL OF UNIONS**
- **EMBEZZLEMENT**
- **MANIPULATION OF SECURITIES**
- **ATHLETIC SCANDALS**
- **CORRUPTION OF LAW ENFORCEMENT**

The corruption of law enforcement is one of the most serious consequences of gambling. Between 1950 and 1960, the Kefauver Investigating Committee discovered that the annual profits from gambling which went to organized crime amounted to \$9 billion. Half of this amount was channeled back to police and political officials as payoffs.

In areas where gambling prevails, law enforcement surrenders to the criminal world.

The Masks That Allow Gambling

When legislation is passed which protects gambling in any form, it is done so on the basis of several false presuppositions.

One false presupposition is that the society in general will benefit from the new revenue. This is an outrageous idea, considering the cost of crime and other social evils connected with the gambling.

A second presupposition is that gambling is not addictive. The proponents of bills asking for legalized gambling betray this untruth themselves by allocating funds in the bill for treatment of compulsive gamblers.

One compulsive gambler testified, "I could not think of one day of life without gambling. I got so tired and so depressed, I thought often about taking my life."

The ultimate consequence of a false message is total disillusionment, which often leads to suicide. It is therefore significant that suicide attempts are a major problem among gamblers, as reported by the *American Journal of Psychiatry* (1984, Volume 141, pages 215-218).

PROJECTS



- Check the laws in your state to learn whether they prohibit or protect gambling.
- If your state has a lottery, contact several people who have won large amounts of money. Ask each one personally if he would share with you new pressures that have come to his life with the money he won.

Date completed _____ Evaluation _____



MEDICINE RESOURCE

HOW DOES RIBONUCLEIC ACID ILLUSTRATE THE GENETIC QUALITY OF GOOD AND EVIL FRUIT?



A young man developed a mysterious disease when he had dental surgery. This same disease had almost claimed the life of his mother several years earlier. Unless he learns to deal with it, it will strike again, and it could have fatal consequences.

The spiraling helix of DNA (see *Wisdom Booklet 26, Resource G*) is like a tree of life that brings forth good fruit. It contains blueprints which control our bodies' growth and operation. However, when the blueprint contains errors, the same mechanisms that bring forth good fruit copy the errors and produce evil fruit.

Proteins are the "good fruit" that determine the form and function of every cell in our bodies. They are the structural building blocks from which bones, muscles, organs, and connective tissue are

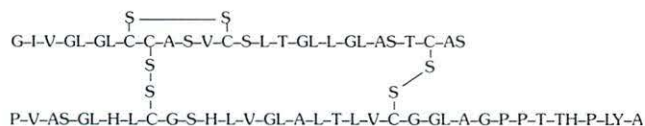
made. Proteins also comprise the hormones, enzymes, and antibodies that control and protect members of the body.

However, these proteins do not just "happen." The very cells they serve must regularly manufacture their own specific proteins according to detailed instructions. In fact, much of the body's cellular "machinery" concerns itself with producing proteins.

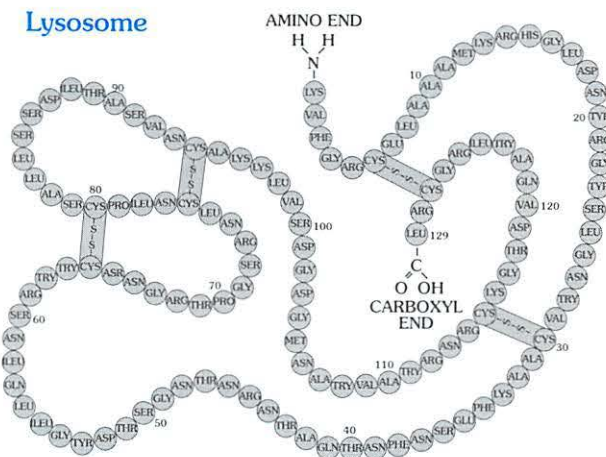
Cells make thousands of different kinds of proteins, each with a different chemical composition and purpose. Surprisingly, all proteins are made up of different combinations of just twenty subunits called *amino acids*. By arranging these amino acids in various combinations, a single cell can manufacture an incredible array of thousands of beneficial proteins.

AMINO ACID SEQUENCE OF TWO PROTEINS

Insulin



Lysosome



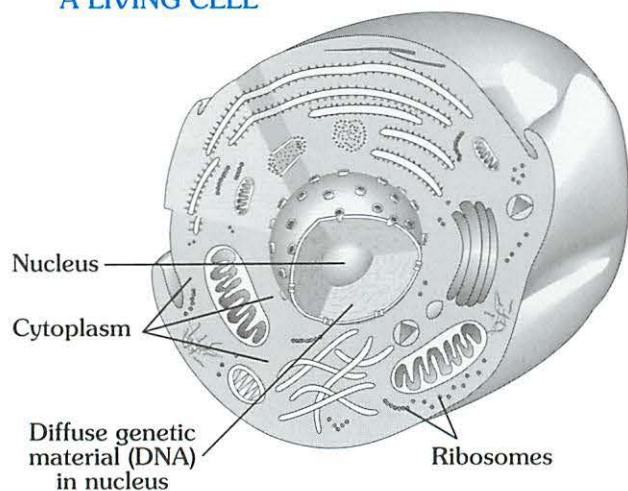
A protein is actually just a series of amino acids hooked together like links in a chain. Some chains have only a few links while others have more than a hundred. Changing the sequence of amino acids changes the character, function, and purpose of the protein. A single error yields corrupt fruit that can lead to death.

RNA Translates the Code of the Cell's DNA for Growth.

Cells manufacture proteins in a region known as their *cytoplasm*. The cytoplasm contains fluids that are rich in the amino acid raw materials needed to make proteins. However, the blueprints (DNA) for arranging and linking these amino acids into useful proteins are coiled up tightly and locked in the *nucleus* of the cell.

Scientists believe that the messenger that transcribes, transports, and translates DNA's coded information is a substance known as **ribonucleic acid** (RNA). RNA differs only slightly from DNA, yet it comes in three distinct forms. One form, called *messenger RNA* (mRNA), cracks the seal of DNA's coiled strands and reads its hidden message. Another form of RNA, called *transfer RNA* (tRNA), translates the secret code by precisely selecting the appropriate amino acids that the blueprint calls for. The final form of RNA, *ribosomal* (RYE-buh-so-mul) *RNA* (rRNA), actually bonds amino acids together in their proper order to form a usable protein.

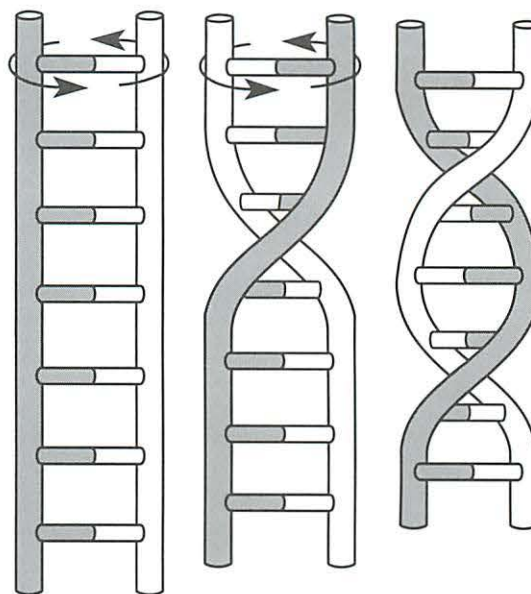
A LIVING CELL



A cell is like a miniature factory with its own power supply, storage rooms, manufacturing equipment, and central headquarters. mRNA is the substance that copies DNA's coded information and carries it from the nucleus to the cytoplasm.

To open a tightly coiled strand of DNA, enzymes selectively untwist DNA's double helix to expose just one of its many genes. The enzyme works much like a cowboy who untwists a rope in order to loosen the individual strands.

DNA TWISTING CLOSED



Try twisting a rope by grasping a short one-to two-inch section between your right and left hands. Twist it counterclockwise with your left hand and clockwise with your right. Notice how the strands separate from one another.

The point at which the helix begins to unravel is usually determined by the concentrations of various proteins already present in a cell. These concentrations work like "on" and "off" switches. When a protein reaches a critically low level, it prompts a substance called a *promoter* to locate the appropriate section of the DNA helix that carries the blueprints for its synthesis. Another enzyme called an *operator* then begins to copy the exposed section onto a strand of mRNA.

Likewise, when there is an abundance of a certain protein, the appropriate promoter relaxes its grip on the DNA helix and the strands tighten back together. By using only short portions of a cell's DNA, the vast amount of genetic information stored there can selectively produce just one protein at a time.

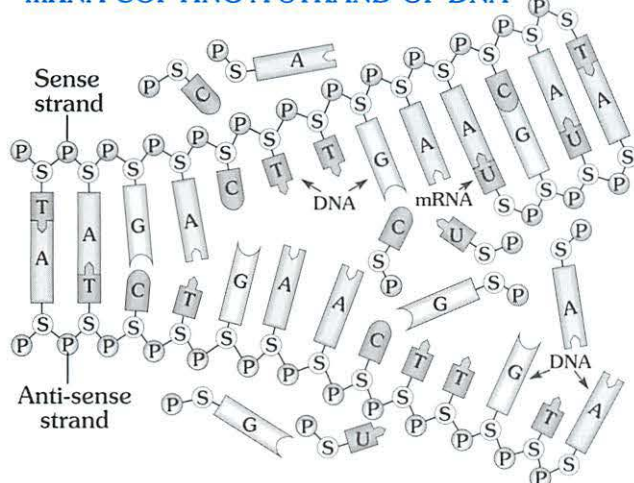
RNA Maintains the Accuracy of Cell Reproduction.

Transcription is the process by which messenger RNA copies information encoded in a cell's DNA. As the DNA untwists in preparation for copying, it exposes thousands of bases that are lined up on each side of its helical ladder. The sequence of these bases contains the coded

instructions the cell will use to make the needed protein.

Normally the bases attach to one another like the rungs of a ladder. As the DNA untwists, the bases separate, thus exposing each base's unique chemical nature. It is the uniqueness of this chemistry that enables mRNA to make accurate copies of DNA's detailed genetic information.

mRNA COPYING A STRAND OF DNA



Even though there may be thousands of bases lined up on each side of the DNA ladder, there are only four different bases making up the genetic code. These bases are cytosine (C), guanine (G), thymine (T) and adenine (A). Their order on the strand of DNA determines the type of protein that RNA eventually manufactures. Notice the mRNA copies only one side of the DNA. The "S" units are sugars, and the "P" units are phosphates.

In much the same way that DNA replicates itself during cell division (see *Wisdom Booklet 26*), mRNA copies the intricate details of the body's blueprints. One of the DNA halves serves as a template to arrange the mRNA molecule into an exact copy of the original DNA.

Scientists have discovered that only one of the two DNA strands serves as a template for mRNA synthesis. They call this strand the *sense strand*. The other strand, the one *not* copied, is called the *anti-sense strand*.

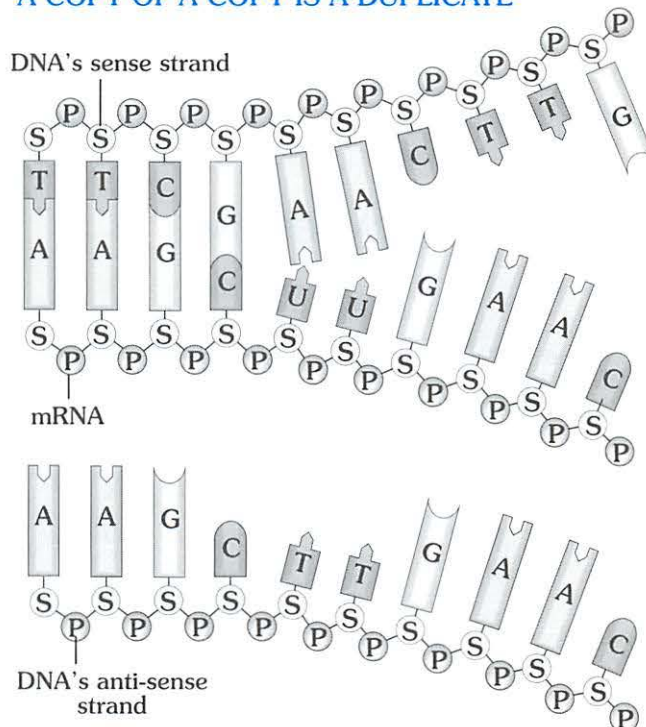
Cytosine (C), guanine (G), thymine (T), and adenine (A) are so chemically unique that they fit together like the pieces of a jigsaw puzzle. Cytosine always pairs up with guanine, and thymine always matches up with adenine. The one exception is the base uracil (U). mRNA molecules contain uracil (U) instead of thymine (T). Uracil (U) pairs up with adenine (A) in place of a thymine (T) whenever it copies a strand of DNA.

This may sound very complicated, but in reality it is not. Simply put, A-T and C-G always go together. But, (U) replaces (T) in mRNA. You might wish to remember the sequence as "An Apple from the Tree sent the Children from the Garden, but you (U) were there Too in ADAM."

For example, when mRNA copies the DNA strand ATGCAT, it produces a string of the bases UACGUA. Notice that for every (A) on the DNA strand there is a (U) on the mRNA. For every (T) on the DNA there is an (A) on the mRNA. For every (C) on the DNA the mRNA molecule copies it as a (G). For every (G) on the DNA blueprint there is a corresponding (C) on the mRNA copy.

These amino acids are very much like letters that form words. When strung together they literally form sentences, paragraphs, and chapters of a detailed "book" of genetic information.

A COPY OF A COPY IS A DUPLICATE



If the template portion (the sense strand) of DNA has the base sequence TTCGAAC TTG, the transcribed mRNA strand would have the base sequence AAGCUUGAAC. Note that the anti-sense strand of DNA, the one *not* copied, is an exact replica of the mRNA (AAGCTTGAAC), with uracil substituted for thymine.

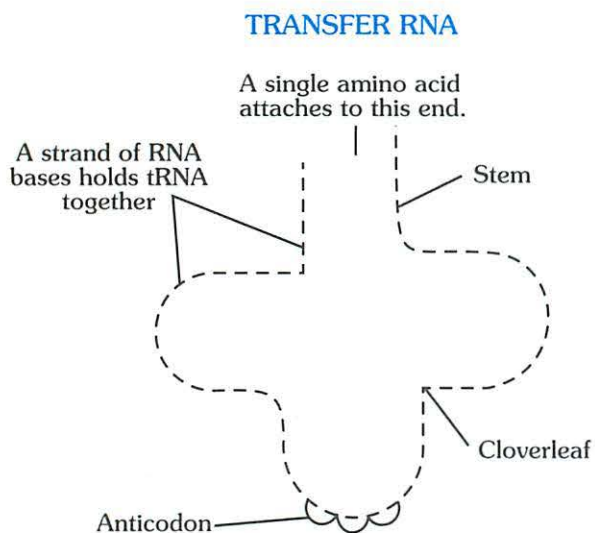
The net result of the transcription process is to make an exact duplicate of the genetic code stored within the DNA molecule. By making a complement of a complement, the mRNA copy

ends up being an exact duplicate of the anti-sense strand. The only exception is that uracil (U) always replaces thymine (T) in mRNA.

Once the messenger RNA copy forms, it peels off the DNA mold, carrying with it the instructions for making a protein. The DNA closes back up and the single strand of mRNA leaves the nucleus through a pore in the nuclear membrane and enters the cytoplasm.

RNA Regulates the Components in the Reproduction of Cells.

The second type of RNA, transfer RNA (tRNA), collects amino acids in the cytoplasm and brings them to the messenger RNA in preparation for the next step in the protein manufacturing process. tRNA is shaped somewhat like a cloverleaf. One end of the molecule has an attachment site for an amino acid. The other end has an exposed set of three bases called an *anticodon*. These are the same bases found in DNA and mRNA. In fact, the same bases are common to all living organisms.



Triplet clusters of cytosine, adenine, guanine, or uracil, called *anticodons*, form three-letter words that “name” each of the twenty amino acids that make up various proteins.

One of the most striking findings in modern biology is that the genetic code is universal. The same three-letter codons specify the same amino acids in all organisms that have been studied—from bacteria to human beings. This means that there is a common language underlying the vast

variety of God’s creation. This is one of the most powerful bits of evidence that demonstrates the existence of a single, purposeful Creator.

Researchers believe that the reason tRNA has three bases attached to its “cloverleaf” is that three is the minimum number of “letters” that can make at least twenty different “words.” Since proteins contain as many as twenty different amino acids, any instructions for making a protein must have the potential for identifying at least twenty different components.

AMINO ACID	mRNA CODONS			tRNA ANTICODONS FOR FIRST COLUMN
ALANINE	GCU	GCC	GCA	CGA
ARGININE	CGU	CGC	CGA	GCA
ASPARAGINE	AAU	AAC		UUA
ASPARTIC ACID	GAU	GAC		CUA
CYSTEINE	UGU	UGC		ACA
GLUTAMIC ACID	GAA	GAG		CUU
GLUTAMINE	CAA	CAG		GUU
GLYCINE	GGU	GGC	GGG	CCA
HISTIDINE	CAU	CAC		GUA
ISOLEUCINE	AUU	AUC		UAA
LEUCINE	UUA	UUG		AAU
LYSINE	AAA	AAG		UUU
METHIONINE	AUG	(start codon)		UAC
PHANYLALANINE	UUU	UUC		AAA
PROLINE	CCC	CCA		GGG
SERINE	UCU	UCC		AGA
THREONINE	ACU	ACC	ACG	UGA
TRYPTOPHAN	UGG			ACC
TYROSINE	UAU	UAC		AUA
VALINE	GUU	GUC	GUG	CAA
stop codons	UAA	UAG	UGA	AUU

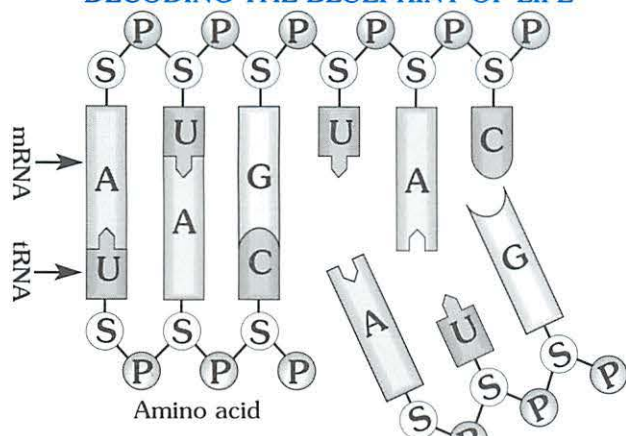
If the four bases are arranged in triplets as three-letter words, they can form sixty-four unique combinations—more than enough “words” to name each of the twenty amino acids. In some cases more than one triplet may label the same amino acid.

Try writing out the tRNA anticodon words for the second column of mRNA codons shown above. Because the anticodons and codons fit together like a hand fits a glove, every codon has a corresponding, complementary anticodon.

During the protein-manufacturing process, tRNA molecules hook onto specific amino acids with the “stem” part of their structure and then search out matching triplet codes along the mRNA chain with their “cloverleaf” part. In other words, the mRNA codon finds its tRNA anticodon

mate, and the two link together. Because each triplet code identifies just one possible amino acid, tRNA works like an analog computer, matching up specific amino acids with their corresponding triplet codons from the original DNA blueprint.

DECODING THE BLUEPRINT OF LIFE

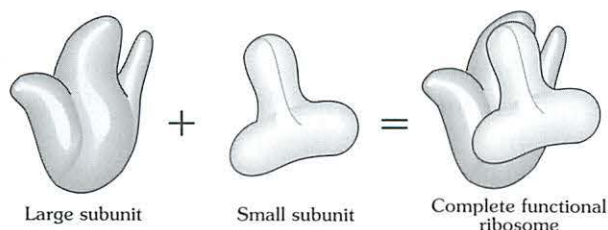


As an anticodon on a tRNA recognizes a complementary codon on an mRNA and attaches to it, it brings along the specific needed amino acid.

A few codons do not code for any amino acid. One codon acts as an initiator codon and tells where a sequence is to begin. This codon calls for the amino acid *methionine* (muh-THIGH-oh-noon), so most protein chains begin with methionine. Three other codons mark the end of a protein chain. Such a codon may be thought of as a concluding period.

RNA Binds the Individual Amino Acids Together.

A third type of RNA known as *ribosomal RNA* (rRNA) actually binds individual amino acids together to create a working protein. rRNA is made up of two unequal subunits. One of the subunits is larger than the other, and they remain separate in the cytoplasm until they are needed to manufacture a protein.

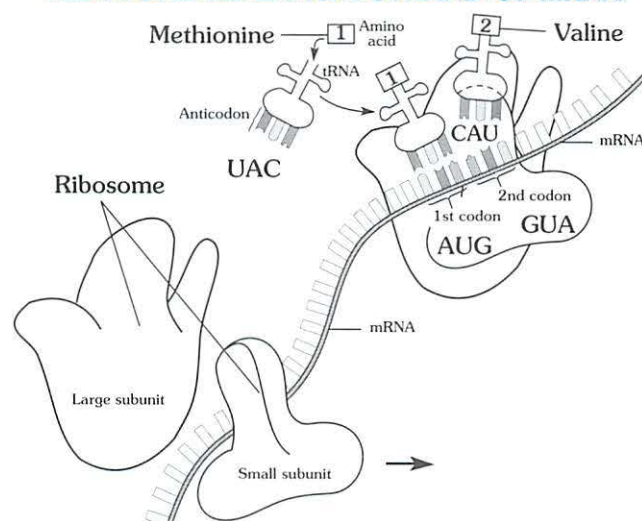


rRNA joins its two halves together only when it is manufacturing a protein. Ribosomal RNA can manufacture any kind of protein as long as it has the correct blueprints.

The actual manufacturing process is triggered when a codon of mRNA, usually AUG, binds to a special site on one of the small rRNA subunits. After mRNA is firmly attached, a larger rRNA subunit fastens itself to the other side of the mRNA molecule. The two halves of the rRNA literally form a sandwich around the mRNA, like the two halves of a bun surrounding a hot dog. Scientists call this structure in the cell a *ribosome*.

The mRNA codon AUG is the initiator that signals the beginning of a protein blueprint. It works like the capital letter that begins a sentence. Other codons such as UAA, UAG, and UGA act as the periods to signal that the instructions for a protein are complete. The only other starting codon we know of is GUG.

RIBOSOME READING A STRAND OF mRNA



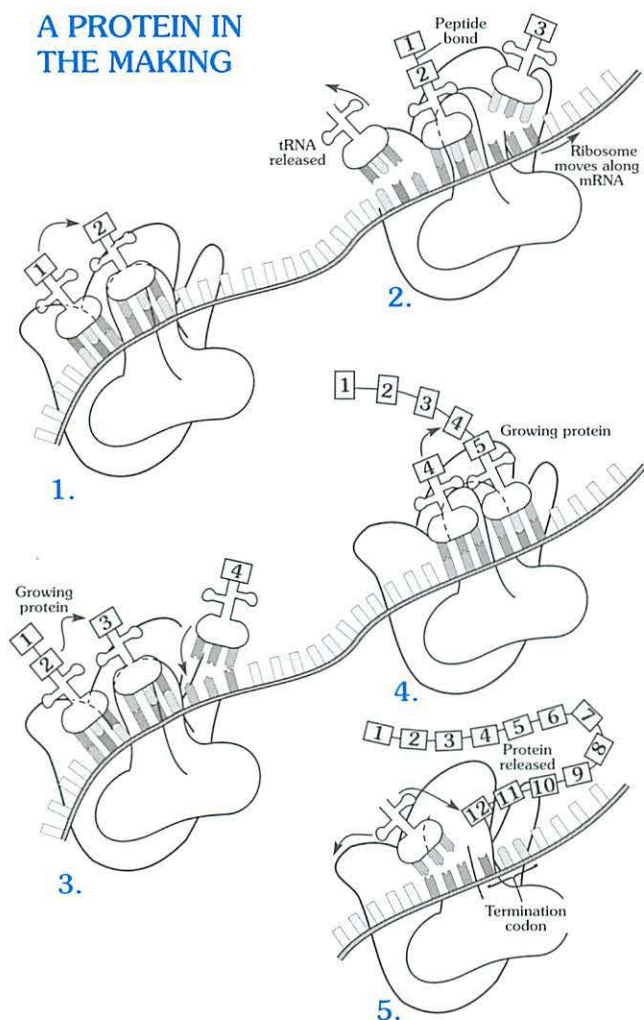
The tRNA anticodon that matches AUG is UAC. UAC is the genetic name for the amino acid *methionine*. That means that most proteins begin with the amino acid methionine. As a ribosome moves along the mRNA strand, it “reads” the information coded in mRNA and synthesizes a protein according to it.

At any one time, the two halves of a ribosome cover only two or three codons along the mRNA chain. This is where the actual building of a protein chain takes place. An appropriate tRNA molecule with its attached amino acid lines up on the first codon of the mRNA template. Then a second tRNA molecule and its amino acid matches up with the next codon in the series. The surrounding ribosome “sandwich” binds the two amino acids together chemically and the ribosome moves on to the next codon.

As the mRNA moves one codon to the right, the first tRNA molecule is set free to collect another appropriate amino acid. The second tRNA remains inside the rRNA “sandwich,” holding the growing protein chain together until a third tRNA molecule and an attached amino acid match the next codon. As one anticodon after another pairs up with its corresponding codon, one amino acid after another is drawn into the rRNA “sandwich” and added to the protein chain.

This process continues until the rRNA “sandwich” has passed over the entire length of the messenger RNA. The last codon on the messenger RNA signals that the chain is complete. The ribosome then releases the finished polypeptide chain so it can go to work. The two halves of the ribosome separate until another strand of mRNA starts the process again.

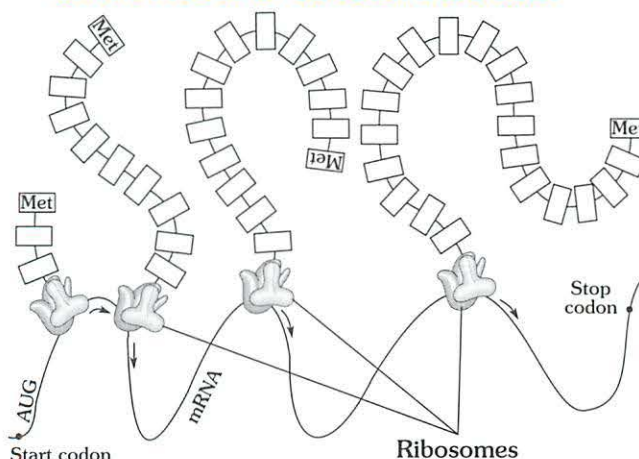
A PROTEIN IN THE MAKING



As the proper amino acids are brought into line one by one, the protein becomes progressively longer.

Normally protein synthesis progresses at a rate of about fifteen amino acids per second. However, as one ribosome moves along an mRNA template, another ribosome may attach itself at the beginning to make an identical protein.

MULTIPLE RIBOSOMES MAKING THE SAME PROTEIN SIMULTANEOUSLY



As many as one hundred ribosomes may move simultaneously along the same mRNA molecule. This allows a cell to respond quickly to a need for a certain protein.

A substance known as ATP (adenosine triphosphate) provides the power that runs a ribosome’s “protein factory.” It supplies the energy that binds amino acids together and rearranges atoms to form new chemical bonds. In the chemical reaction that links amino acids together, ribosomes remove an OH from the COOH portion of one amino acid and an H from the NH₂ portion of its neighbor. The H and OH combine to form water (H₂O), and the remaining CO and NH combine to link the two amino acids together.

How the Good Fruit of RNA is Corrupted By Errors in the DNA

When DNA contains an error in its coded blueprints, mRNA molecules dutifully copy that error and translate it into malformed and ineffectual proteins. Occasionally these errors occur spontaneously, but usually they are passed on by parents from one generation to the next. Conditions such as hemophilia, color blindness, certain forms of muscular dystrophy, sickle-cell anemia, and more than one hundred other recognized genetic disorders are manifested when

inherited errors in the body's blueprint produce "evil" proteins that corrupt and destroy.

Certain genes have tended to become "inbred" within racial groups. Tay-Sachs disease, for example is a disease that affects infants of European Jewish ancestry. Sickle-cell anemia is predominantly a disease of American Blacks. Thalassaemia (a serious blood disorder) is limited to families of Mediterranean descent.

When genetic errors are located on the X chromosome, only male children are affected. Scientists call this a *sex-linked disease*. When an error is located on any of the other forty-five chromosomes, the resulting disease is an "autosomal error" and is common to both men and women.

In genetic language, genes are thought of as either *recessive* or *dominant*. Most inherited errors are transmitted recessively. In other words, a child must receive a defective, recessive gene from his mother *and* his father. A child who receives a defective gene from just one parent often shows no adverse symptoms. However, he still carries the erratic blueprints that may give rise to the disease in subsequent generations.

Dominant hereditary disorders are quite rare. They include *Huntington's disease*, a progressive disorder of the nervous system, and *achondroplasia*, a form of dwarfism.

1 Errors block the absorption of good food.

Some inherited diseases involve defects in the body's ability to absorb nutrients. For example, Hartnup disease results from the malabsorption of certain amino acids by both the intestines and kidneys.

In most cases, absorption of amino acids requires specific carriers made from protein. These carriers latch onto and transport individual amino acids through the intestinal walls and through the nephrons of the kidneys. If one of these carriers is missing due to a defective protein, the body has no way of absorbing or re-absorbing the affected amino acid.

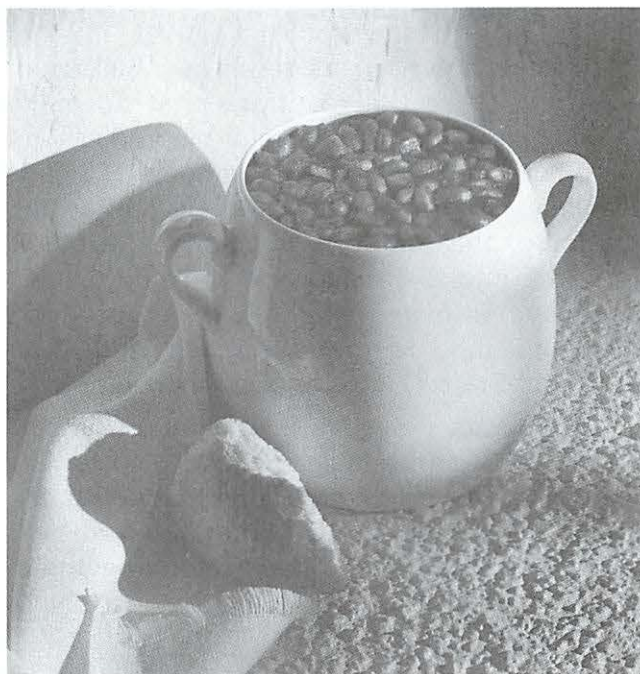
In Hartnup disease, it is the amino acid *tryptophan* that passes through the body without being absorbed. The lack of tryptophan expresses itself with pellagra-like symptoms, including a lack

of coordination, painful sun-sensitive rashes, and a loss of mental alertness.

Cystinuria is a disorder in which a substance called *cystine* (SISS-teen) is not transported properly. Instead of being absorbed into the body, it is concentrated in the kidneys and bladder. Unfortunately, cystine is not soluble, and it forms stones and crystals in the urinary tract. This leaves cystinuric patients susceptible to all sorts of complications, including obstruction, infection, and kidney failure.

Defective absorption of phosphate, certain vitamins, sodium, and chloride may also result from other inherited transport defects.

GOOD FOOD



Healthy Cooking, Sharon Chassers, © 1984 Rodale Press, Inc.

Good food must be digested and absorbed before it becomes nourishing. A failure to absorb important amino acids from food is the result of an autosomal recessive inheritance.

When defects in the basic blueprints prevent RNA from manufacturing the proteins that absorb vitamin D, a person exhibits the same symptoms as common rickets. However, unlike the common form that can be easily cured with sunlight, cod-liver oil, and vitamin-enriched milk, the inherited form's inability to absorb and transport vitamin D is extremely difficult to treat.

When defective genes lead to a mal-absorption of the electrolyte *chloride*, a disease known as *hypochloremia* results. The name

hypochloremia means simply “too little chloride in the blood.” *Hypo* means “low; too little”; *chlor* is the root for “chloride”; and the suffix *-emia* means “blood.”

Hypochloremia sets up a chain reaction in which the body reabsorbs bicarbonate ions in the absence of chloride in an attempt to maintain a balanced blood system. Excessive bicarbonate, however, produces acute alkalosis. The major consequence of alkalosis is an over-excitability of the nervous system. Nerves conduct impulses even when not stimulated and may produce muscle spasms and convulsions.

2 Errors prevent proper cleansing of toxic wastes.

Many inborn errors result in a buildup of toxins, because the reactions that normally convert these toxins into useful by-products are impaired. One of the best examples of this is *phenylketonuria* (feh-nul-kee-tuh-NOOR-ee-uh). Normally, the amino acid *phenylalanine* is converted into the amino acid *tyrosine*. During the conversion process, a toxic by-product, phenylketone, is manufactured and then transformed rapidly into useful components.

However, defective instructions from the DNA may block the metabolism of phenylketone. Instead of the phenylalanine converting into tyrosine, the reaction becomes blocked by a defective enzyme, and phenylketone begins to

accumulate in the body and “spill” into the urine. If this condition goes undetected and is allowed to continue, it will cause mental retardation and slow physical development in newborn infants.

To prevent the toxins from building up, doctors suggest a restricted diet, ruling out foods containing phenylalanine. Usually a relatively simple dietary or replacement therapy can offset the disease’s effects before any damage is done.

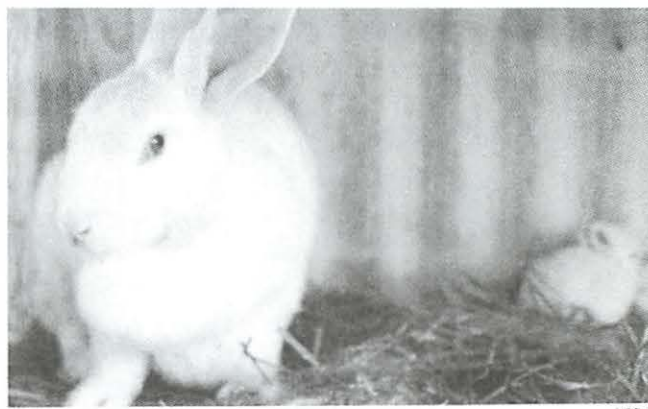
Alkaptonuria is another inherited error of metabolism. It, too, involves the metabolism of phenylalanine and tyrosine. In alkaptonuria the enzyme *homogentisic acid oxidase* is missing. This enzyme controls the conversion of tyrosine. When the enzyme is absent, a toxic acid accumulates in the joints, producing premature arthritis.

Another disease involving toxic wastes is *galactosemia*. It is a disease of infants caused by a lack of the enzyme needed to convert a sugar called *galactose* into glucose. The defect is with a deficiency of the enzyme *galactose-1-phosphate uridyl transferase*. Because the child is unable to convert galactose into glucose, toxic by-products accumulate in the liver, kidney, and brain, producing cirrhosis, renal failure, and mental retardation.

In a similar disease called *galactokinase deficiency*, galactose conversion does not even begin. Instead, it builds up in the bloodstream and eventually threatens eyesight. Presumably galactose interacts with enzymes in the eyes to form *galactitol*, an alcohol that clouds the lenses and produces cataracts.



Phenylketonuria manifests itself within a few days after birth; however, alkaptonuria is not usually manifested until at least the age of thirty.



Albino rabbits have pink eyes because they contain no pigment. The pink color comes from blood vessels in the eye. Albinos received a defective gene from each parent.

3 Errors thwart the manufacture of cells.

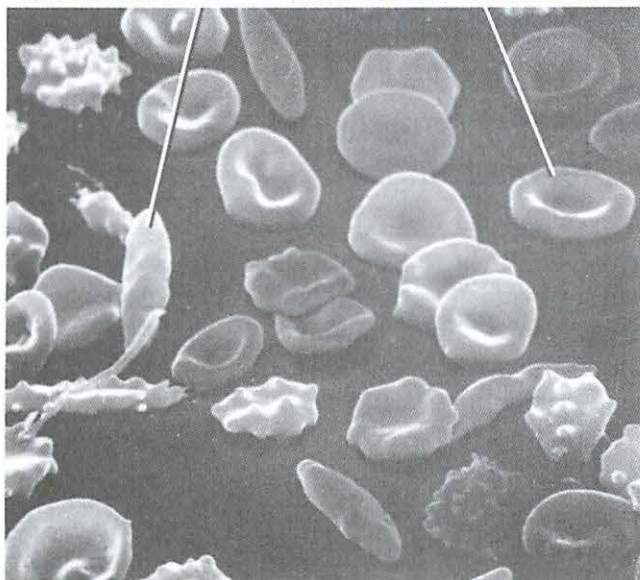
Albinism is an inherited disease in which there is no pigment in the eyes, skin, or hair. It occurs when a child inherits a set of matching, defective genes from his parents. Albinos burn badly when exposed to sunlight and show a greater tendency to develop skin cancer.

Normally a specialized cell called a *melanocyte* (muh-LAA-no-site) converts tyrosine into melanin, a dark pigment that acts as a sunscreen to protect skin cells from harmful radiation. Melanin also prevents light from entering the iris of the eye. Without a colored iris, a person would have difficulty seeing in bright light.

Some metabolic diseases result from a simple “spelling” mistake in a strand of DNA. Sickle-cell anemia is just such a disease. It results from a change in only one part of a long chain of instructions. Instead of calling for a molecule of glutamic acid in the DNA’s genetic code, the sickle-cell gene calls for the amino acid *valine*. This simple difference produces red blood cells that are twisted into a hooked or sickle shape instead of a normal, disk shape.

SICKLE CELL

NORMAL RED BLOOD CELL

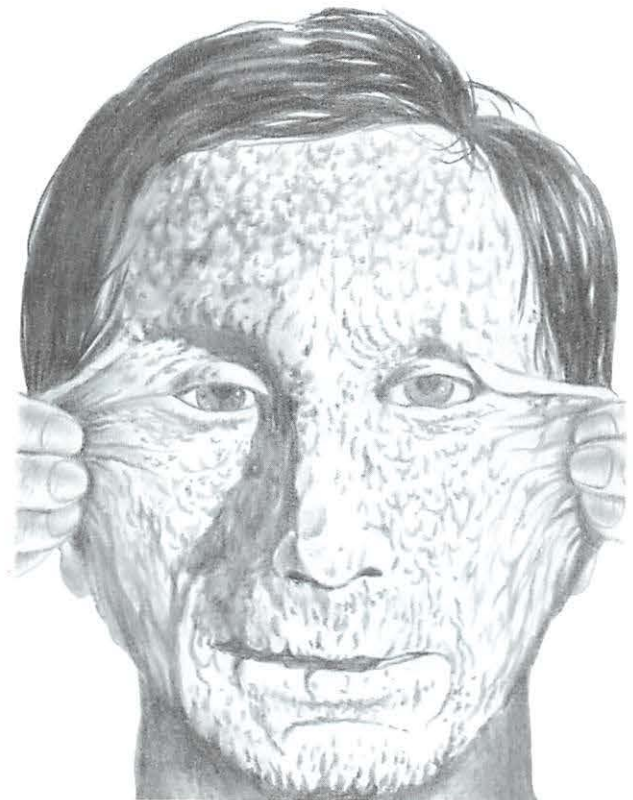


Because of their odd shape, sickle cells clog up the capillaries, resulting in excruciating pain, and causing a severe anemia that is almost always fatal.

The manufacture of collagen is another process that is occasionally altered by inherited defects. Normal collagen is strong and elastic;

however, a number of different genetic errors leave it malformed and incomplete. In some cases, collagen fibers grow too fat to be useful. In other cases there is simply not enough collagen to meet the body’s needs. Still other errors leave collagen flaccid and limp. These forms come under the title of *Ehlers-Danlos syndrome* (EDS).

Because collagen is the most abundant protein in the human body, it is involved in a broad range of applications. It gives connective tissue its elastic nature, makes tendons strong, allows skin to flex and stretch, prevents bones from bending, and permits arteries to stretch without bursting. Any alteration of the detailed instructions for making these different forms of collagen can produce multiple problems throughout the whole body.



An inherited disease called *cutis laxa* results from a defective protein that has little or no elasticity. The term comes from the Latin word *cutis*, meaning “skin,” and *laxa*, from which we get the word “relaxed.”

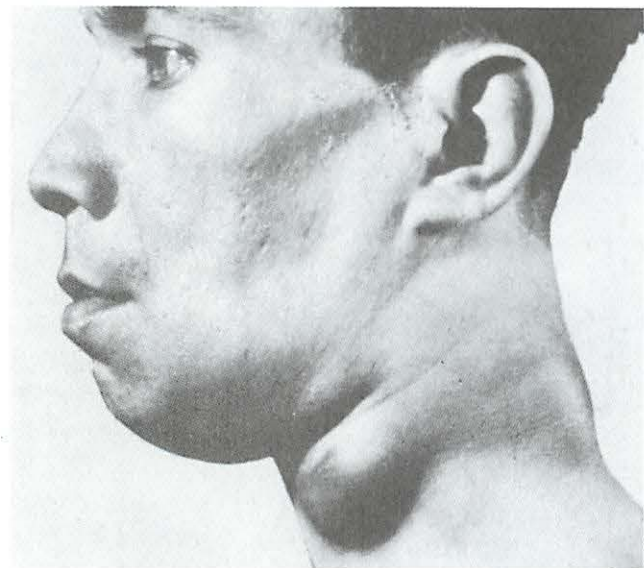
A child who has inherited EDS often has skin that is unusually soft and feels like chamois. As he ages, his skin may begin to sag prematurely. His elbows develop enlarged folds of skin, and his joints exhibit incredible flexibility. In some situations his skin becomes so fragile that a fall or bump may split it open. Tendons also tear easily and hernias are common.

4 **Errors inhibit proper responses to hormones and other controls.**

When the end product of a reaction is a hormone, there may be alternating swings of overactivity and underactivity. This is the case with inherited goiters. A goiter is an enlarged thyroid gland that produces a swollen lump on the neck.

Since the thyroid gland regulates metabolism, growth, and the activity of the nervous system, any irregularity can lead to dramatic consequences elsewhere in the body. One of the most obvious of these consequences is abnormal growth in children.

When the thyroid cannot respond properly to the body's needs, its activity swings to wild excesses, producing cretinism, loss of mental alertness, and weight gain. In other cases it may manifest itself as hyperactivity, including nervousness, rapid and irritable heartbeat, shallow breathing, extreme hunger, and loss of weight.



Wellcome Museum of Medical Science

A goiter may result from a lack of iodine and is easily treated with iodine. However, for a person with an inherited thyroid defect, a goiter is perhaps the least of his problems. It is a relatively minor symptom of an underlying root cause.

Unfortunately, thyroid regulation is so complex that any of a number of inherited errors can upset its delicate balance. Studies of cretinous patients show that their thyroids simply may not recognize the very hormones that control its own activity. Instead of adjusting to meet the body's needs for growth hormones, the thyroid fails to

respond. This results in the slow growth and retarded mental development known as *cretinism*.

In other cases, cretinism results from the body's inability to collect and transport iodine. Iodine is a necessary ingredient in thyroid hormones. Under normal conditions, the thyroid gland requires about forty times as much iodine as the rest of the body. When the thyroid is active, it may require three hundred times as much iodine. This means that if there is any defect in the body's ability to collect and transport iodine, the thyroid gland cannot function properly.



WHO

Cretinism is a failure of the body to respond to growth hormones. It is not always hereditary. It can also result from an injury to the thyroid gland or a lack of iodine in a child's diet.

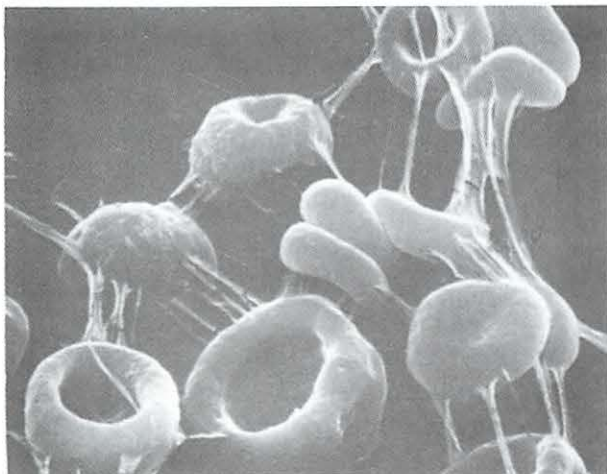
5 **Errors hinder prompt healing of bleeding wounds.**

There are about twenty different factors involved in blood coagulation. Most of these factors circulate throughout the body in order to prevent prolonged bleeding. The interaction of these factors is one of the most complex sequences of reactions in our bodies.

During the coagulation process, one factor triggers the activity of another, like a chain reaction. For example, factor XII activates factor XI, which in turn converts factor IX so it can form a complex with factor VIII. This product stimulates factor X, which leads to the final step of the sequence with the activation of factors II, I, and XIII.

Inherited errors with any one of these factors can lead to hemophilia. The word *hemophilia* comes from the Greek roots *haima*, meaning "blood," and *philos*, meaning "love."

Hemophiliacs usually do not bleed visibly. Instead, their bleeding is likely to be internal. A minor fall or a harsh blow that would normally cause just a bruise can cause large accumulations of blood in the tissues of a hemophiliac. Bleeding around the joints may actually force the bones apart, leading to hemophilic crippling.



Fiber Scientific Company © 1975

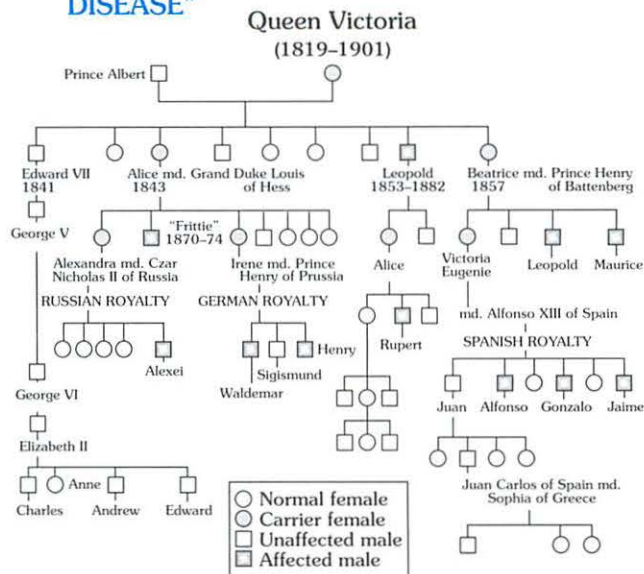
As a platelet sticks to a damaged blood vessel, the adhesion triggers changes in coagulation factors IV, V, VIII, IX, X, XI, and XII. The platelet's own surface changes, causing other platelets to stick to it. Platelets also stimulate the formation of fibers that bind red blood cells together to form a blood clot at a damaged site.

Hemophilia actually manifests itself in four different hereditary forms, depending upon which coagulation factors are defective. Two forms caused by defects in factors VIII and IX are genetically transmitted as sex-linked errors. This means that they are passed on from carrier mothers to their sons. Physicians call these two forms of hemophilia (respectively) *Classic Hemophilia A*, and *Hemophilia B* (otherwise known as *Christmas disease*).

Another form of hemophilia is not sex-linked. Instead, it is inherited from parents who carry the disease but are not affected by it. A fourth form, *von Willebrand's disease*, occurs even though there is just one affected parent.

Fortunately for hemophiliacs, it is now possible to take donated blood and separate out and freeze-dry the coagulation factors—especially factor VIII. These can be transfused by the patient or his family at home. Some patients even learn to anticipate bleeding episodes and transfuse themselves in advance.

"BLEEDER'S DISEASE"



By way of her nine children and fourteen grandchildren, Britain's Queen Victoria, a carrier of the hemophilia gene, transmitted hemophilia to three other royal families of Europe and greatly influenced nineteenth- and twentieth-century history.

6 Errors suppress the removal of foreign drugs.

Some inherited disorders remain hidden until an unusual situation reveals their presence. For example, a well-documented error in some DNA blueprints causes a deficiency in an enzyme known as *cholinesterase* (kole-in-ESS-ter-ace). Cholinesterase removes certain therapeutic drugs from the body. Most notably, it is capable of removing a muscle relaxant called *succinylcholine* (SUCK-sin-ul-KOLE-eeen), which is used by dentists and surgeons.

When succinylcholine is used to induce temporary paralysis in surgery, cholinesterase normally removes it in minutes. However, individuals affected with an inherited deficiency of cholinesterase cannot remove the drug. Instead, the drug stays active for an extended period of time, during which the patient remains paralyzed.

In one case, a nineteen-year-old football player who was in apparent good health was paralyzed for almost six hours by a small dose of succinylcholine. A dentist had administered the drug as a muscle relaxant during the extraction of an impacted wisdom tooth.

Upon investigation, the dentist discovered that the boy's mother had had a similar paralysis during an earlier hysterectomy. At that time she had to be put on a respirator for almost four hours because she was not able to breathe on her own.

The lack of the genetic instructions needed to make cholinesterase left her vulnerable to this particular anesthetic. Without the cholinesterase, she could not rid herself of the drug's paralyzing effects.

In another inherited defect, a deficiency of the enzyme *glucose-6-phosphate dehydrogenase* (dee-hy-DRAH-juh-nace), abbreviated *G6PD*, renders its victims extremely sensitive to the antimalarial drug *primaquine* (PRIH-muh-quinn).

Those with genetic errors for manufacturing *G6PD* develop acute hemolytic anemia when given this or certain other drugs. The drug so damages their red blood cells that many of them burst open, spilling their contents into the bloodstream and reducing the blood's ability to carry oxygen.

Altogether, researchers have discovered a possible twenty-one different errors in the manufacture of *G6PD*. These errors affect predominantly American Blacks, Mediterraneans, and Middle-Eastern populations. Persons carrying the defective gene may live completely normal lives until they encounter primaquine or other similar drugs.

One particular inborn error was not discovered until researchers introduced the drug *isoniazid* (eye-so-NIE-uh-zid), abbreviated *INH*, for tuberculosis therapy. Their studies revealed marked differences in the dosages required to successfully treat tuberculosis with *INH*. Some patients required frequent high doses while others required only minimal doses, spaced far apart.

The cause of this difference was eventually attributed to hereditary differences that allowed some patients to deactivate *INH* rapidly.

These patients required high doses, because their bodies removed the drug almost as fast as it was administered. Other patients with different genes could not deactivate *INH*, and a small dose of the drug lasted for a long time.

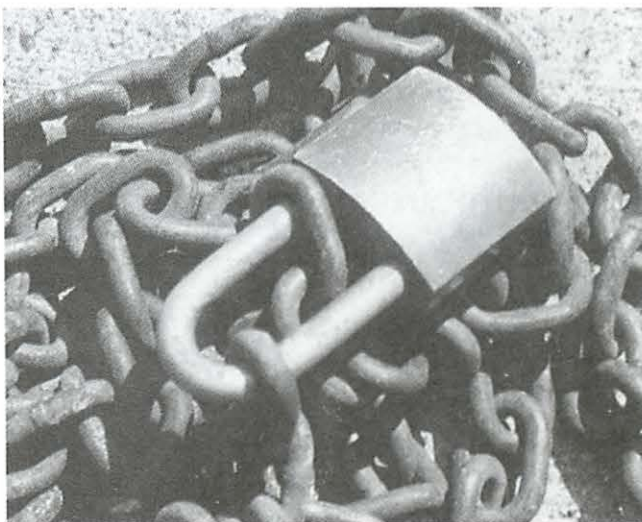
PROJECTS

1 Injecting genes into bacteria to synthetically manufacture proteins is a process resulting in

what scientists call *recombinant DNA*. Using this method, scientists are able to produce such substances as growth hormone and beta-endorphin, a substance that has morphine-like properties and suppresses pain.

Other researchers propose to change the very genes that determine identity. They hope to change defective genes and to alter others for the "better," even before a child is born. Theoretically, they say, it is possible to change the sex of a child, the color of eyes, height, weight, build, etc. How do these changes influence God's sovereignty as described in Psalm 139:13–16?

Man's ways and God's ways represent two trees which both produce fruit. However, only one of the trees produces good fruit. Discuss the ethical implications of using organisms such as bacteria to manufacture human proteins. How does dependence upon "man-made" drugs encourage patients to rely on physicians rather than on God?



D. Schaefer

The secrets of God's design have been locked in the coils of DNA molecules for centuries. Now that they have been unlocked, man holds the key to alter the very structure of life itself. Relate this concept to the events surrounding the building of the Tower of Babel in Genesis 11:1–9.

2 Study Romans 5:12–21. How is the inherited sin of Adam similar to inherited errors in DNA blueprints? How is sin like the evil fruit of a corrupt tree? How is righteousness like the fruit that is brought forth by a good tree?

Date Completed _____ Evaluation _____