

# CREATOR

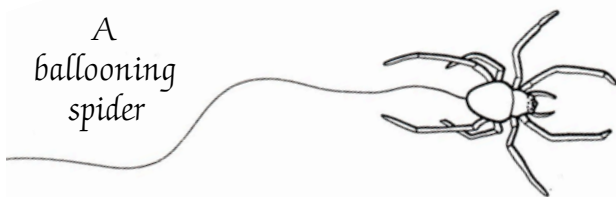
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## A WHISPER IN THE STORM

*He makes clouds rise from the ends of the earth;  
He sends lightning with the rain and brings out  
the wind from His storehouses (Psalm 135:7).*

Who can cradle a snowflake without damaging its fragile beauty? Who is gentle enough to carry a butterfly along or lift a paper kite high into the sky? Who can whisk away tiny spiders on the strands of their own silk,<sup>1</sup> allowing them to populate distant lands hundreds of miles away? And who is mighty enough to rip up trees by their roots or shoot objects through solid concrete? *Jesus does these things*—through the wind His Spirit creates. Our Lord's divine character sparkles throughout creation, and wind ensures that Christ's glory is seen everywhere on Earth, for wind—like our Lord—is inescapable. In wind, we see His kindness and gentleness, care and nurture, power and wrath.



<sup>1</sup> This is known as "ballooning."

Wind can topple buildings and destroy barns, but it is equally capable of bringing rain to parched fields. Search the world and you will find no aspect of the physical creation softer than a gentle breeze. At the same time, you will find nothing more powerful than a hurricane or a tornado. As an emissary of Christ's Spirit,<sup>2</sup> the sea breeze soothes a tired man's face, reminding him of *God's kindness*, while some distant port experiences a gale's ferocity, lest we forget *God's wrath* (see Romans 11:22).

### THE BIRTH OF WIND

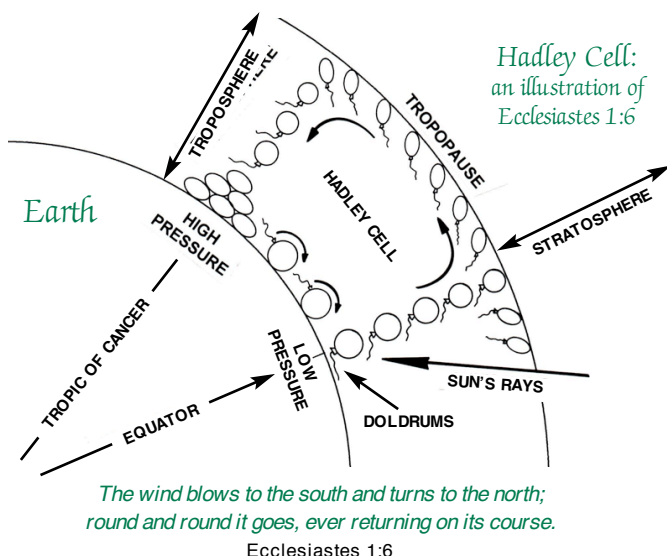
*The wind blows to the south and turns to the north; round and round it goes, ever returning on its course (Ecclesiastes 1:6).*

Everything in nature has a beginning, and God's creation of the wind begins at *the equator*. Jesus uses the sun to heat moist air located there, causing it to rise 10 miles (16 km) up through the *troposphere*, the lowest layer of the atmosphere. As the air rises, it cools. This causes invisible water vapor to condense, forming clouds and thunderstorms. The air stops cooling at the *tropopause*, the boundary between the troposphere and the *stratosphere*.

<sup>2</sup> Although the Holy Spirit is a distinct member of the Trinity, the Bible refers to Him as "Christ's Spirit" (Romans 8:9).

The tropopause<sup>3</sup> acts as a ceiling for the rising air and forces it to move into either the northern or the southern hemisphere. By the time wind has traveled to 25 degrees or 30 degrees (north or south latitude), it has chilled and become dense enough to drop back toward the earth.

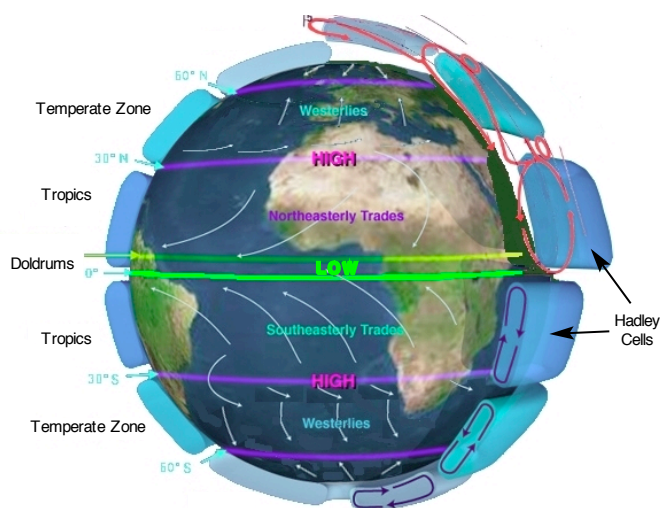
As air settles, its molecules get squeezed together by increasing atmospheric pressure, which causes it to heat up again. By the time the wind reaches the earth's surface it is hot and dry, like an overcooked potato. This scorching breath, pouring down on or near the tropics of Cancer and Capricorn, helps create the world's great deserts. Out at sea, this torrid region of hot, dry air is known as the *horse latitudes*.



All of this air descending to Earth creates bands of *high pressure* that circle the globe at 25 degrees to 30 degrees latitude, both north and south. The wind then moves back along the surface of the earth to the equator.<sup>4</sup> Here it rises again, forming *low-pressure zones* called the *doldrums*. Nineteenth-century sailors were well-acquainted with the doldrums. Almost all of the air movement at the equator is vertical; little wind blows across the water.

<sup>3</sup> Read about the different layers of the atmosphere in **CREATOR** 7–1.

<sup>4</sup> Scientists call this circular motion of the air a Hadley Cell.



This hot, still air found in the doldrums made it very difficult for sailing vessels of past centuries to cross from the northern hemisphere into the southern hemisphere, or vice versa. Ships often languished in the ocean for weeks as they drifted on the windless sea.

Christ uses the rising column of air over the equator like a bellows to gently suck in air from the north and the south. Most wind, however, doesn't blow directly from the north or the south. This is where things get a little complicated. God created the earth as a spinning ball, and the equator moves 1,000 mph (1,600 kph) relative to space. This spinning motion "deflects"<sup>5</sup> the wind traveling from the horse latitudes to the equator—it is "bent" somewhat by this rotation of the globe. The change in direction of the wind by Earth's spin is known as the *Coriolis effect*.<sup>6</sup> As a result, the predominant winds of the tropics are from the northeast in the northern hemisphere and the southeast in the southern hemisphere. We know them as the *trade winds*, or *trades* for short.

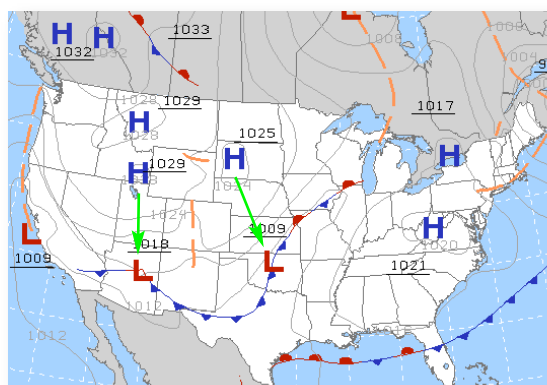
You may have heard that wind usually blows from the west, not the east. That's because, in the *temperate areas* of the world where many people live—between 30 and 60

<sup>5</sup> Technically speaking, the wind continues to move in a straight line, but from our vantage point it appears to be "deflected."

<sup>6</sup> The Coriolis effect also redirects the great ocean currents.

degrees latitude—the wind usually does blow from the *west*. Unlike the tropics, the spin of the earth here causes wind to move eastward—another example of the Coriolis effect. (Your location on the planet, north or south, determines how the rotation of the globe affects the wind.)

What complicates the picture in the temperate zones even more is the movement of cold, dry air coming down from the poles and the flow of warm, moist air arriving from the tropics. *In Christ's infinite kindness*, He uses these winds to help cool the hot spots on Earth and warm the world's coldest places.<sup>7</sup> In temperate regions of the world, these air masses, called *fronts*, collide with one another, creating *unstable weather* and a variety of other winds. Here, armies of warm and cold weather systems do battle and attempt to cancel each other out. The collision of warm and cold air, along with the rotation of the earth, creates a number of



A weather map showing "highs" and "lows" and the direction of wind (in green)

high and low pressure systems which swirl and eddy around the globe like giant tops. God generates additional wind when air concentrates in a high pressure system (H) and is sucked into the vacuum of a low pressure system (L). Think of a high (H) as a hill and a low (L) as a valley—wind moves down the "hill" into the "valley"—high to low.

<sup>7</sup> Antarctica is extremely cold and northern Africa can be unbearably hot, yet they would be far worse if not for Christ's kind creation of worldwide winds!

## CHINOOKS & SEA BREEZES

*He who forms the mountains, who creates the wind . . . the Lord God Almighty is His name (Amos 4:13).*

Aside from the heat of the sun, the rotation of the earth, and the presence of high and low pressure systems, Jesus also employs mountains, valleys, seashores, and deserts to create or alter wind. Take mountains, for instance—there are at least a couple of different ways Christ uses them to make wind.

One fairly common phenomenon occurs when moist air moves up one side of a mountain and down the other. Are you familiar with the term *chinook* or *foehn* (pronounced "fen")? Chinooks are winds found in the Rocky Mountains of North America; a foehn is a similar breeze of the Alps and is just another name for a chinook. (Actually, there are many such mountain winds found all over the world by different names.) God creates them when moisture-laden air moves up the side of a mountain. As the moist wind reaches the mountaintop, it cools, releasing water in the form of rain or snow. Sometimes Jesus sculpts beautiful disc-shaped clouds, called *lenticular clouds* (*Alto cumulus lenticularis*), with this moisture. Then, as the air rolls down the other side of the mountain, it warms



Spectacular lenticular cloud over Mt. Hood, Oregon





up, forming a hot, dry breeze. The effect of this descending air can be unpredictable and spectacular, hinting at the mysterious nature of our Lord's creative Spirit (please read John 3:1-8). On January 22, 1943, the air temperature in Spearfish, South Dakota, went from -4° to 45° F (-20° to 7° C) in just *two minutes!* The temperature then rose to 54° and plummeted to -4° again as the chinook died down (this took only 27 minutes).

There is yet another way our glorious God forms wind with mountains. This occurs daily in many valleys around the world. At daybreak, the emerging sun heats the eastern slope of a nearby mountain. This causes the air blanketing these heights to rise, drawing additional air up from the valley floor, thus creating an upslope breeze (known as *anabatic wind*). At night, the mountain air cools and condenses, pouring back down the slopes into the valley below (*katabatic wind*).<sup>8</sup>

People living near the ocean, or a large lake, are treated to a similar phenomenon known as *sea breeze*. In the morning, land



warms up more quickly than water. As the sun heats the coast, it also causes warm air inland to rise, producing low pressure. The cold, moist, dense air from the sea moves

into shore to replace the warm, rising air over land. This cool, gentle breeze ceases around mid-afternoon to early evening. Then, as the land begins to cool, air above it becomes dense and moves back out to sea.

### JET STREAM & TWISTERS

*By his Spirit he hath garnished the heavens;  
his hand hath formed the crooked serpent  
(Job 26:13 KJV).*

Christ's Spirit pierces our atmosphere with invisible rivers of air that greatly affect the weather. Called *jet streams*, these powerful air currents blast eastward at an altitude of six to nine miles (10 to 14 km), and at a speed of 100 mph (160 kph). They wrap around the globe like gigantic sliding snakes slithering through the temperate and subtropical zones of the northern and southern hemispheres. Jet streams both fascinate and perplex weather forecasters because they have a major influence on the position and strength of thunderstorms.

When warm, moist air collides with cool, dry air, mighty *thunderstorms* can form, and the turbulence inside a large storm is like none other. On July 23, 2010, a record hailstone—eight inches (20 cm) in diameter and weighing nearly two pounds (0.9 kg)—dropped from a passing tempest and onto the town of Vivian, South Dakota. The updrafts of this particular thunderstorm, which kept that hailstone aloft, must have been staggering!

Depending on weather conditions, a *tornado* can be spawned within a thunderstorm, starting as a vortex of rapidly rising warm air. Wind speeds in a tornado are the greatest of any found on earth and can exceed 300 mph (480 kph). The force of some tornadoes is enough to level a house, uproot

<sup>8</sup> *Kata-* is a prefix from the Greek language that means "down."  
*Ana-* is a prefix meaning "up."



trees, and batter livestock. There is a report of a farmer who once saw an entire herd of cattle flying away with a tornado. This came to be known as the “herd shot ‘round the world!”<sup>9</sup> All kidding aside, more than 1,200 tornadoes are generated in the United States each year and many people are hurt or killed by them.

Typical twisters (another name for tornadoes) measure 30 feet to 300 feet (10 to 100 meters) in diameter and extend from 1,000 feet to over a mile (300 meters to 2 kilometers) in length. If you look at a photo of a tornado, you are not seeing the wind, because air is invisible. What you see are tiny droplets of water and debris suspended in the swirling air. Tornadoes that form over water are referred to as *waterspouts* and are actually more common than those that trek across land. Tornadoes are most common in the central Great Plains of North America,



An F5 tornado near Elie, Manitoba on Friday, June 22nd, 2007

an area known as “Tornado Alley.” But they also frequent southern England, northern Europe, eastern China, Japan, southernmost Africa, Australia, New Zealand, and the La Plata Basin of South America.

A twister is usually born in late spring or early summer and has a very brief life span, lasting just a few minutes; rarely can tornadoes survive more than an hour. Most travel five

or ten miles before dying.<sup>10</sup>

Contrary to popular belief, the damage caused by a tornado is due to its tremendous wind speed, not the low pressure inside the twister. It was once thought that a house could explode from this low pressure; it is now known that strong winds blow buildings down. Ninety-nine percent of all tornadoes in the United States spin counterclockwise. And most twisters move from the southwest toward the northeast.

The Scriptures record that, “[God’s] way is in the whirlwind and the storm” and that “the Lord is slow to anger but great in power” (Nahum 1:3) This is a good thing. As dangerous as tornadoes can be, they are not as frequent as God could make them.

## TROPICAL CYCLONES

*Your thunder was heard in the whirlwind,  
your lightning lit up the world;  
the earth trembled and quaked (Psalm 77:18).*

*Hurricanes* are created during late summer and fall. Unlike tornadoes, these storms are born not from colliding cold and warm fronts, but out of warm water near the equator. If the sea temperature exceeds 80 degrees F (27° C), moisture evaporates rapidly from the surface of the ocean in ever-increasing amounts. This evaporated moisture forms clouds as it rises into the atmosphere. Meanwhile, dense air from the surrounding sea moves into the low pressure area created by this brisk, upward movement of moist air. At this point, the region is known as a *tropical depression* and is characterized by winds of less than 39 mph (63 kph). If moisture evaporates fast enough from the sea’s surface, air then *rushes in*,

<sup>9</sup> As opposed to the “shot heard ‘round the world,” which refers to the beginning of the American Revolutionary War at Lexington and Concord

<sup>10</sup> The great “Tri-State Tornado” of March 18, 1925 traveled a total of 219 miles (352 km) and lasted 3.5 hours before it died. This was the deadliest tornado in U.S. history, killing 695 people.

spiraling as it goes, and gives birth to even stronger winds. As this happens, a *tropical storm* is conceived (with sustained wind of 39 to 73 mph or 63 to 117 kph). If the velocity of the wind reaches 74 mph (119 kph), the tropical storm graduates to hurricane status (a *tropical cyclone*). By this time, the storm is several hundred miles in diameter.

In the northern hemisphere, a hurricane rotates counter-clockwise, as do all low pressure systems; in the southern hemisphere, cyclones spin clockwise. Tropical cyclones come by many names: the three most common are hurricanes, typhoons, and cyclones—all representing one and the same monster.

Wind speeds exceeding 200 mph (322 kph) have been recorded in hurricanes. It is the combination of extremely strong winds, torrential rains, and high waves that make these storms so dangerous. The daily energy



Cyclone Catarina seen off the coast of Brazil—March 26, 2004. Located in the Southern Hemisphere, it rotates clockwise.

output of an average cyclone or typhoon is roughly equivalent to the explosion of more than a hundred thousand atomic bombs. Yet, *“these are but the outskirts of [God’s] ways, and how small a whisper do we hear of him!”* (Job 26:14 ESV). God is far greater.

The source of a hurricane’s might comes from warm ocean water heated by the sun. As it moves away from the equator—usually traveling hundreds or thousands of miles—it eventually encounters land or cooler water, which zaps its strength and causes it to

dissipate. (In God’s great mercy, most hurricanes never come ashore.) Around 40 to 60 tropical cyclones occur worldwide each year; the average one survives one to two weeks.

You might now be thinking, “If the wind is Christ’s ambassador, why does it get out of control, and why is it so irritating at times?” *Ah, but remember, Christ tempers the storm!* Weather is not as bad as it could be. Even before the beginning of time, God’s Spirit knew that sin would corrupt creation, so He placed constraints on the wind. “He established the force of the wind and measured out the water . . . He made a decree for the rain and a path for the thunderstorm” (Job 28:25, 26). As destructive as wind can be, the Lord has set limits on just how much it may demonstrate His power. And we must never think that a natural disaster is God’s singling out a particular group of people because of their sin—we all deserve such treatment (Luke 13:1-5)!

## THE BREATH OF LIFE

*“O God, the God who gives breath to all living things”* (Numbers 16:22).

Are you left with the impression that most strong winds are destructive? Without wind, however, *there would be no life on Earth*. Winds moderate the temperature of the world, bringing warm zephyrs to cooler climates and refreshing breezes to the dead heat of deserts and the tropics. Wind also spreads pollen, seeds, and the spores of countless plants all around the globe. Without it, tumbleweeds, for instance, would become extinct. Novel though their mode of travel may be, there is a purpose behind the rolling and bouncing of these Asian transplants.<sup>11</sup> As strong breezes push a

<sup>11</sup> Tumbleweeds aren’t native to the American West, but were accidentally transported to North America with seed shipments from Asia.



tumbleweed along the ground, its seeds are shaken loose, allowing new tumbleweeds to be sown abroad. This is just one of a thousand plants that depend upon wind to spread their seeds.

Besides plants, animals also benefit from the wind. Did you know that the Portuguese man-of-war is totally dependent on the currents of the ocean and sea breezes to move it about? Our Lord Jesus Christ placed a small sail on top of each man-of-war. It has



Portuguese man-of-war

no other means of travel. Thousands of birds use the prevailing westerlies of middle latitudes to ease the strain of their long, arduous migrations. And insects are carried everywhere on the wind's coattails, allowing them to find "greener pastures" all over the world. *What a caring God Jesus is!*

#### A GENTLE WHISPER

*When Elijah heard it, he pulled his cloak over his face (1 Kings 19:13).*

In the midst of thunderstorms, tornadoes, and hurricanes, God ever so gently and faithfully cares for life. Yet, we shouldn't be surprised that our world experiences so many storms; Jesus warned us that fearful events will occur, especially as the great Day of the Lord approaches (Luke 21:11). What should surprise (and delight) us is that we enjoy

so many beautiful, peaceful days of mild weather! Do you remember the story of Elijah on Mount Horeb? God had the option of showing Himself to Elijah as a powerful wind, an earthquake, or fire, which were not uncommon ways our Lord presented Himself to His enemies. Instead, He quietly approached the frightened Elijah *as a gentle whisper*. What does this tell us about God? Although we all deserve the fury of His wrath (Revelation 19:11-21), He is very kind *to those who humbly fear Him* (Lamentations 3:22-23; Luke 1:50). Please know that if you are at peace with God, because of what Christ accomplished on the Cross, you won't experience the blast of His awful wrath in eternity (Hebrews 12:18-29). This is what the "gentle whisper" represents.

It was never God's intention for Earth to be pummelled by the all-too-frequent convulsions within our atmosphere. How do we know this? For one thing, people and animals do not tolerate powerful wind very well. In winter, our bodies are insulated by a thin layer of warm, moist air, about a third of an inch (1 cm) thick, covering our skin. If wind begins to blow only seven mph (11 kph), this airy blanket is reduced to one-tenth of what it was. In a strong breeze, the insulating layer of air is literally torn from exposed skin, making us feel very cold.

One-half of all heart attacks and strokes occur when winds blow 25 mph (40 kph) or greater. And adults frequently become quite cranky in strong wind. Yet many children seem to enjoy wind. *It's all a matter of perspective.*



## THE STORM OF THE LORD

*See, the storm of the LORD will burst out in wrath, a driving wind swirling down on the heads of the wicked (Jeremiah 30:23).*

Storms do not wreak havoc on their own. When the first man disobeyed God, he set *all of mankind* into rebellion. *And because of one man's sin*, nature has been subject to frustration and decay ever since. Things are no longer as they should be and the wind has been forever tainted. But, it still listens to its Master and does His bidding. When Jesus was in the boat with His disciples, He commanded the squall to be silent, and it obeyed Him *immediately* (Mark 4:35-41). *Christ remains in control of all events.*

Wind obeys God (Matthew 8:23-27), but do we? It is an unpleasant thing to think about, but man would have never known the tempest of God's wrath had he not rejected Him. How much more powerful is God than the wind? This also begs the question, "How much more angry is He with our sin?" And how much sweeter is His voice and gentler His touch toward those *who fear Him and humbly repent of their sins?*

There is an "approaching tempest" that all people need to hear about—it echoes with the thunder of God's wrath (Isaiah 30:30). The Bible says that it will consume all who have rebelled against Him (Hebrews 10:27). *Yet a gentle whisper can also be heard in the midst of the destructive storm* (Mark 4:9). Do you hear it (Eph. 1:13)? It is the tender voice of Christ's Spirit telling us that Jesus died on a cross because of sin and absorbed the punishment His people deserve. So please ask yourself, "How will God show Himself to me—as a raging storm or a gentle whisper?" If you answer, "a gentle whisper," then on what do you base your confidence? A church, your family, good works? Or upon God's grace?

As Creator, Jesus uses the cyclone to

remind us of our sin. As Savior, He willingly came to the Cross to trade His life for ours. Tornadoes and hurricanes are painful reminders of our sin and in these we find no safety, no comfort. The Cross was not a safe place for the Son of God, but it is the only safe place for us! The death of Christ is not just a reminder that we are, in fact, sinners—Jesus was nailed to a tree for *the punishment of sin*. Do you believe this?



"Could my zeal no respite know, Could my tears forever flow,  
All for sin could not atone; Thou must save, and Thou alone.  
Nothing in my hand I bring, Simply to the Cross I cling;"

**Rock of Ages**, Augustus Toplady 1776

God presented Christ [as the One who would turn aside His wrath, taking away sin], through the shedding of his blood—to be received by faith (Romans 3:25).



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