

CREATOR

VOLUME 13

NUMBER 1

WINSOME PONDS

Part 1

Delight yourself in the LORD... (Psalm 37:4a).

Editor’s Note: The air hangs heavy with the scent of moist green plants and the summer sun beats down from its zenith. Despite the heat and humidity, there is lots of activity surrounding the *pond* we are approaching. Dragonflies are everywhere! The entire area pulses with life, testifying to the presence of the One who is Life—Jesus Christ—the Creator and Sustainer of ponds (Colossians 1:16-17).

As we draw near, we spot the partially-concealed figure of an older gentleman. A pith helmet adorns his head and he’s wearing safari-styled shirt and shorts. His appearance is reminiscent of an intrepid jungle explorer of years gone by. One of his hands firmly grips a butterfly net, the other nimbly balances a delicate but powerful magnifying glass. This fellow lacks pride, or maybe he’s just a big kid, because presently he’s on his knees looking for...for bugs!

Professor Seismo: “I wish I could find [Vanessa cardui](#).¹

Editor’s Note: Little does Professor Seismo² realize, but he’s only three feet from the pond’s edge. And if he’s not careful he’ll

¹ Or Painted Lady Butterfly—visit our pond photo gallery to see what a “painted lady” looks like: www.hiscreation.com/Gallery
² Professor Seismo, pronounced SIZE - mo, is a fictional character.

(SPLASH)...fall...in.

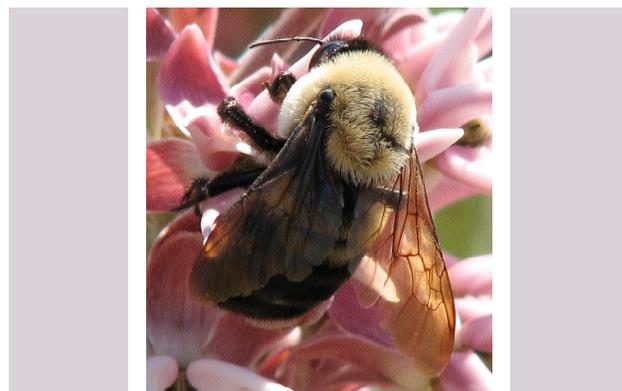
Professor Seismo: “Ooo, that’s kinda refreshing!”

Editor’s Note: Somewhat embarrassed, Seismo looks up to see us standing nearby. He seems undeterred, however, and greets us from a sitting position in the water.

Professor Seismo: “Oh, hi! I’m glad you could make it. I want to teach you about of the wonders of ponds today. You’re in for a real treat!

“Jesus is so good to us, especially you children. He recognizes that people desire to explore His creation, but some places on Earth are difficult to reach. Take the ocean, for instance. Many of you don’t live anywhere near the sea, so in the richness of His generosity, He brings the ‘ocean’ to you. Well, sort of. You see, in certain ways God made ponds similar to the sea—you might think of a pond as a ‘miniature ocean.’

“Our Father in Heaven is a kind ‘daddy’ who enjoys giving His children good gifts. Through His Son Jesus, He provides us many ways to get to



know Him better. And our Lord Jesus has created the *ecosystem of the pond* by His Spirit so we might see His Father's glory.

"You'd be surprised at the similarities between a pond and the ocean. The surface tranquility of a pond conceals an amazing underwater world of living jewels, bizarre creatures, and 'monsters' every bit as terrifying as the giant squid or killer sharks of the sea. And if we take a little time to learn how God constructed a pond, we will better understand the complex ecosystem of the ocean."

Similar plants & animals of ponds & seas

<u>Pond</u>	<u>Ocean</u>
sponge	sponge
crayfish	lobster
mussels	mussels
red-eared slider	sea turtle
diatoms	diatoms
triops	horseshoe crab
scud	shrimp

Editor's Note: The professor is still sitting in the shallow water! He stands up, steps onto the bank, squeezes the water out of his handkerchief, and wipes his brow. There's a long piece of green algae hanging limply from the collar of his shirt. Unaware, he continues to speak.

Professor Seismo: "When I was a child I loved to explore ponds. And I still find them delightful after all these years. I'm convinced that ponds attract children simply because our winsome³ Lord Jesus made them!

"As we explore this pond, we will discover the precious and delightful heart of Almighty God. Do we dare ignore such a golden opportunity to get to know our Lord better?! I believe that a sincere and sustained study of creation is one true measure and expression of our love for Christ Jesus. As Creator, it is His mind and His word that

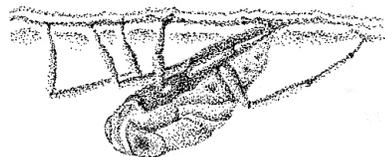
³ The dictionary defines winsome as "pleasant, delightful, engaging, even charming; attractive in appearance, character, and manner."

has caused all that we see in the universe to blossom into existence. And it is His power and His Spirit that continue to sustain it, microsecond after microsecond."

Editor's Note: The professor scrunches up his face and gets very serious.

Professor Seismo: "Scripture teaches that if we seek God, we will find Him if we seek Him with all our hearts (Jeremiah 29:13). His majesty is reflected in the grandeur of a mountain range and a beautiful sunset, yes! But our Lord's sweet personality is *no less* revealed in the serenity of ponds. So, let's explore!

"Why would an environment like this remind me that God is delightful? Well, let me give you an example: Did you know that our Lord Jesus created a tiny pond insect called the *backswimmer*⁴ that swims upside down in the water? Upside down! And if another creature chases this little



Backswimmer

fellow and tries to eat him, the backswimmer frantically kicks his oar-like legs, propelling himself to the surface where he blasts out of the water, like a missile fired from a submarine, and flies away. God is so wonderful and delightful in how He designed everything! You see, *He's winsome.*"

Editor's Note: Professor Seismo pulls soggy notes out from one of his pockets.

Professor Seismo: "Before we go further, we should define what a pond is: Ponds are bodies of water smaller than a lake. A pond is shallow enough that sunshine touches its muddy bottom. Sunlight does not necessarily hit a lake's bottom,

⁴ *Notonecta* spp. is also known as a "water wasp" or "water bee."

however, because it is usually much deeper.

“Due to their larger size, lakes are horizontally layered with water of different temperatures, especially in summer. The surface of a lake is warm whereas the bottom is cool. A pond, on the other hand, generally has the same water temperature throughout.

“Ponds are typically quiet bodies of water and have few waves. Jesus surrounded most ponds with thick vegetation which prevents wind from disturbing the water’s surface. Lakes are big enough that wind can whip across their face and create waves.”

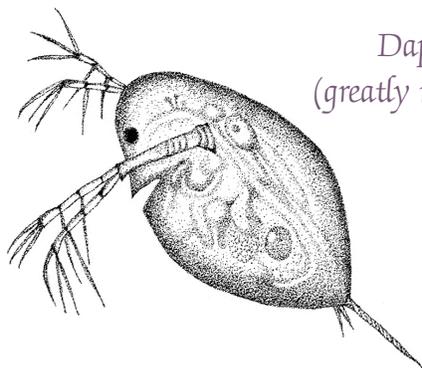
Editor’s Note: For a second or two, a really big dragonfly hovers near the professor’s right ear. Somewhat startled, he looks up, smiles, and continues talking.



Professor Seismo: “A pond is really two wonderful realms: the world we see as we stand on its shores, and the fantastic, mostly-microscopic world that lies out of sight just beneath its surface.

“Like the ocean, a pond ecosystem is extremely complicated, reflecting the *infinite wisdom and skill* of our Lord Jesus Christ. Only the Lord can explain how He precisely maintains and coordinates the lives of *organisms numbering in the trillions* and packs them into such a small, peaceful environment! Ponds are teeming with living things in summer and buzzing with activity.

“The chief way God renews a pond year after year is through *reproduction*. It seems that He has given every pond creature a remarkable ability to reproduce itself. A carp, for instance, can lay over a million eggs in one season. Theoretically, a single



Daphnia
(greatly magnified)

female *Daphnia* (water flea) is capable of having 200,000,000,000,000,000,000,000,000,000 offspring before she dies in three or four months. Wow, that’s a lot of kids!”

Editor’s Note: Professor Seismo looks down at his notes again. They are still dripping with water and the ink is starting to run.

Professor Seismo: “Like the ocean, a pond can be divided into *four different zones* or communities: limnetic, benthic, planktonic, and littoral. The *limnetic* (limb - NET - ick) *zone* is a fancy way of saying ‘open water.’ It’s where fish, turtles, and ducks live, and is not unlike the open water community of the ocean.⁵ Collectively, these animals are known as the *nekton* of the pond. In the ocean, the nekton is composed of whales and fish, sea turtles, and many varieties of sea birds, such as the albatross.

“All bodies of water have a bottom—*benthic zone* or *benthos* (BEN - thoss). The benthos of a pond and the benthos of the ocean are inhabited by millions upon millions of microorganisms, crustaceans, and bottom-dwelling fish. In winter, many pond animals—toads, frogs, salamanders, turtles, and insects—bury themselves in the mud of the benthos where they hibernate in order to survive the cold.

“The benthos of a pond is also home for insect larvae (dragonfly, caddisfly, mayfly, etc.), snails, clams and mussels, sponges, and worms.⁶

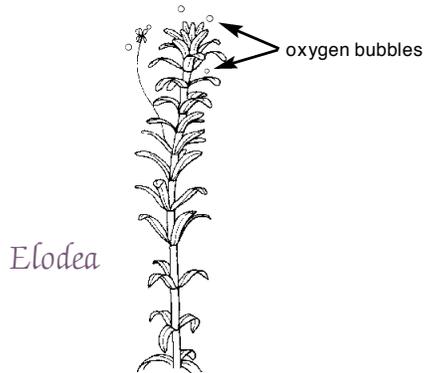
“The main reason, it seems, that Jesus placed countless microorganisms in the bottom muck of a pond is to provide a way to decompose the constant rain of *detritus*⁷ from above. The decomposition of dead plants and animals is accomplished by trillions of bacteria, fungi, and ciliates. This process of decomposition is incomprehensibly complex. (It seems that just about everything in Christ’s creation is difficult to understand!)

“Have you ever wondered why bubbles frequently rise to the surface of a pond? Some of

⁵ Read about the open water community of the ocean in the March/April 1995 issue of **CREATOR**.

⁶ Animals that burrow into the bottom mud of a pond are called “infauna.”

⁷ Detritus (dih - TRY - tuss)—dead plants & animals that sink to the bottom of a body of water: a pond, a lake, or the ocean



Elodea

the bubbles are **oxygen gas** produced by submerged green plants such as Elodea (ih - LOW - dee - uh). All green plants give off oxygen in the sunshine. But many of the bubbles we observe come from the bottom mud where the **anaerobic bacteria** (bacteria that survive without oxygen) live. Anaerobic (ann - ah - ROW - bick) microorganisms produce several deadly gases: **hydrogen sulfide** (H₂S), **methane** (CH₄), and **carbon monoxide** (CO). These gases are formed as bacteria decompose the dead plants and animals that have fallen into the pond. Though the gases are poisonous, they are not in high enough concentration to harm us. The benthos can give off a bad smell, however, if its mud is disturbed.”

Editor’s Note: A butterfly has landed on Professor Seismo’s pith helmet. It sits so quietly that we might imagine it is waiting for Seismo to continue his explanation of aquatic zones.

Professor Seismo: “The **planktonic zone** of a pond harbors **plankton** which is a collection of tiny plants (phytoplankton) and microscopic animals (zooplankton) suspended in the surface water.”⁸

• **Phytoplankton** (fy - toe - PLANK - ton) include different varieties of microscopic algae. This is the major source of food for the pond. If the water temperature is just right and there is an excess of nutrients, the phytoplankton population can explode, turning the water turbid green. This is known to us scientists as a **bloom**.

⁸ Read about the plankton of the ocean in the March/April 1995 issue of **CREATOR**.

• **Zooplankton** (zo -uh - PLANK - ton) are composed of minute crustaceans, rotifers, some insect larvae, and other invertebrates. Zooplankton feed on phytoplankton, other zooplankton, and detritus.

“The **littoral** (LIT - ur - al) **zone** includes the shoreline community of plants and animals. It corresponds to the tidal zone of the ocean where we find mussels, clams, seaweed, barnacles, and starfish.⁹ Most of the pond’s animals are found in this littoral zone. Here, God provides food and shelter for birds, frogs, and muskrats.

“The littoral zone also features three types of plants: emergent plants, floating plants, and submerged plants.

• **Emergent plants** are those that are rooted in the pond but whose stems and leaves grow above water. The cattail is an example of an emergent plant. Others include grasses, sedges, and rushes.

• **Floating plants** are found on the surface of the pond, and may or may not be rooted in the benthos (bottom mud). Pondweed, duckweed, and water lilies are three of the most common floating plants.



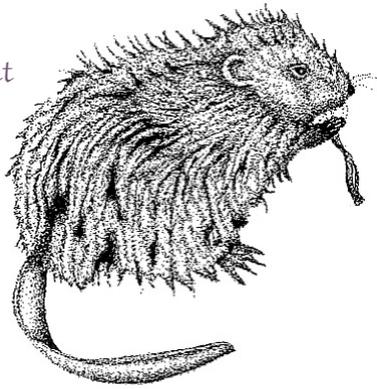
Pondweed¹⁰

• **Submerged plants** spend their entire lives underwater. Examples are Elodea, milfoil, and hornwort.

⁹ Read about the tidal zone of the ocean in the May/June 1995 issue of **CREATOR**.

¹⁰ *Potamogeton* spp.

Muskrat



“Now let’s try to identify some of the major kinds of animals that can be found in a pond ecosystem. Earlier today, I saw a muskrat (*Ondatra zibethicus*) swimming along the shoreline. A muskrat is a **mammal** that looks like a small beaver with a rat’s tail—it’s a poor choice of names, however, because it’s not a rat. Originally found only in North America, muskrats have been transplanted to Europe and Asia. Their entire lives are spent in or around water. They build elaborate lodges and burrows in the banks of ponds and rivers. You’re most likely to see them early in the morning or in the evening. Many kinds of plants—cattails, arrowhead, water lilies, pondweed,



and millet, to name a few—provide food for these brown furry creatures. Muskrats also feast on clams, snails, crayfish, frogs, and fish.”¹²

Editor’s Note: With the algae strand and

¹¹ *Nymphaea* spp.

¹² Jesus made muskrats omnivores. An **omnivore** is an animal that eats both plants & animals. **Herbivores** are animals that munch plants only, and a **carnivore** is a creature that feeds on other animals, but no plants.

butterfly still adorning him, Professor Seismo now hides behind a thick patch of cattails. Taking his right hand, he bends one of the plants slightly to the side so he can use his binoculars.

Professor Seismo: “Another group of animals found at ponds are **birds**. Ducks, herons, blackbirds, swallows, martins, bitterns, and warblers all frequent ponds. At present, I’m watching a male and female mallard (*Anas platyrhynchos*)—one of the most common ducks in the world. Mallards are found just about everywhere on Earth except Australia and Antarctica.

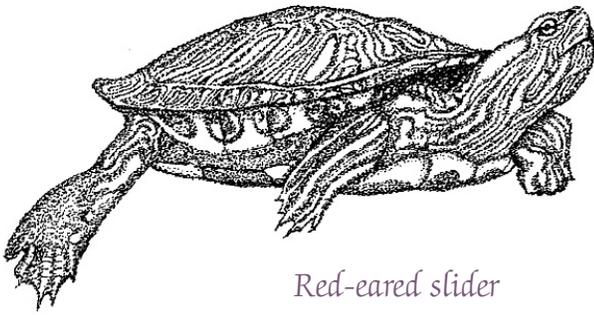


“God must have had fun designing this duck! The male mallard has an iridescent green head, a yellow bill, and orange, rubber-like feet, further revealing the delightful heart of Jesus. Like chickens, the female duck is known as a ‘hen;’ unlike chickens, mallards can fly up to 40 mph (64 kph)! As with muskrats, ducks are **omnivores**; they consume duckweed, seeds, the stems and roots of pond plants, and insect larvae.

“So many things in Christ’s creation teach us wisdom if we are willing to ‘listen.’ The ant gives us a great example of perseverance and hard work (Proverbs 6:6-8). And the mallard sets a standard for marriage—the male and the female duck stay together for life!”

Editor’s Note: The professor’s eyes get very large.

Professor Seismo: “Oooo! If we look about ten



Red-eared slider

feet (three meters) to the right of the mallard pair, we can see a red-eared slider¹³ sunning himself on a log. This turtle’s shell has the design of ornate pottery, again illustrating that Christ is a winsome Creator! All **reptiles**, including pond turtles, are cold-blooded. Daily they lie in the sunshine, on a log or a lily pad, to warm themselves. This added body heat allows their muscles to work more efficiently and it helps with the digestion of their food (usually small fish, insects, and aquatic plants).

“The most familiar of pond **vertebrates**¹⁴ is the frog. The serenades of these **amphibians** proclaim the delightfulness of Christ as well as anything you can find at a pond! Let me demonstrate using a table.”

Editor’s Note: Professor Seismo pulls another piece of paper out of a water-sodden pocket.

<u>Frog</u> ¹⁵	<u>Sounds like a...</u>
pig frog	pig grunting
wood frog	duck quacking
leopard frog	person laughing
gopher frog	person snoring
barking treefrog	small dog barking
pine barrens treefrog	bicycle horn
bird-voiced treefrog	chirping bird
little grass frog	cricket
oak toad	peeping chick

Professor Seismo: “Just when you thought you knew all the farm-yard animals and their sounds! These guys can really make wildlife identification confusing!”

“Most vertebrates have lungs. This is how we and frogs get oxygen. Well, actually, frogs also obtain some oxygen **through their skin** (75 percent comes via the frog’s lungs and 25 percent is absorbed by their skin). A few species of salamander, another type of amphibian, have no lungs. It’s true, Jesus gave them no lungs! They get all the oxygen they require through their skin—either directly from the air or from water as they swim. Amazing!”

“Many aquatic creatures, including tadpoles, fish and insect larvae, extract needed oxygen from water using special organs God provided called **gills**. But this can pose a problem in ponds.

“If enough organic debris falls into a pond, which frequently happens in autumn when trees and plants lose their leaves, the number of decomposers at the pond’s bottom greatly increases. These additional bacteria and fungi use up much of the oxygen dissolved in the pond water, making it difficult for other pond creatures to breathe. If too many dead organisms fall into a pond, they can overwhelm its oxygen supply with dire consequences. Creatures living in the pond suffocate and die. Sadly, death can mask the glory of God!”

Editor’s Note: For a moment, Seismo appears sad, but then a big smile comes across his face.

Professor Seismo: “The two things a pond and the ocean have most in common are water and **fish**, though the sea has more fish than a pond.

“Ponds have no sharks, but are home to carp, bluegill, pumpkinseed, sunfish, bullheads, and darters. Smaller fish live and hide among the plants of the shoreline (littoral zone) to avoid being eaten. Large fish swim in deeper open water (limnetic zone) during the heat of the day, while surfacing in the evening to feed on zooplankton and insects.

¹³ *Trachemys scripta elegans*

¹⁴ Vertebrates are animals with a backbone: mammals, birds, reptiles, amphibians, and fish.

¹⁵ These anurans are found in the Eastern U.S.

“But fish are much more than animals with scales, fins, and gills. Fish also show us that Jesus is winsome! Have you ever watched the way fish move about in an aquarium, how they come to the top of the tank expecting to be fed, or how they stay so perfectly balanced in the water and swim with such ease? I truly believe that they are unknowingly saying, ‘The One who made us is a wonderful God!’ Take time to observe fish in a pond or an aquarium, and see for yourself if I’m right about this.”

Editor’s Note: Professor Seismo again wipes his brow with his handkerchief.

Professor Seismo: “Pond life also includes *arthropods* such as arachnids (pond spiders and water mites), insects, and crustaceans (crayfish, for example).

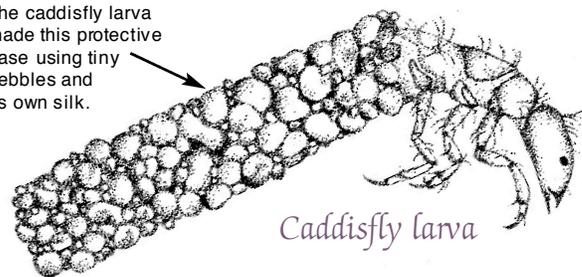
“The air around us is filled with dragonflies, damselflies, mayflies, bees and wasps, and true flies. Speaking of which, dragonflies, damselflies, caddisflies, and mayflies are *not true flies*. They got their names simply because of their ability to fly.

“The true flies¹⁶ of the pond include flies, midges, gnats, and mosquitoes. In some parts of the country, biting midges are known as ‘no-see-ums.’ Our Lord Jesus made them the world record holders of all flying creatures. The wings of one type of midge beat 1,000 times *each second*. That’s unbelievable!

“Dragonflies are truly a joy to watch! No helicopter or airplane built by man comes even close to the flying skills of a dragonfly. This insect can turn on a dime, dip, swoop, hover, circle in tight spirals, dive straight down, and then stop in mid-air. If you haven’t studied dragonflies recently, please take some time to do so. Then consider just how great Jesus must be to have created such ‘maneuvering marvels’!

“Despite all this aerial activity, the majority of pond insects live most of their lives underwater as *larvae* (LAR - vee) or *nymphs*. This includes

The caddisfly larva made this protective case using tiny pebbles and its own silk.

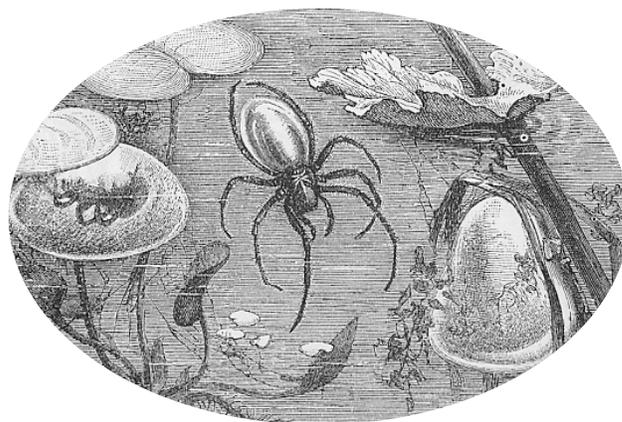


Caddisfly larva

mosquitoes, midges, dragonflies and damselflies, mayflies, and caddisflies. Their adult (winged) lives are usually very short. Every pond harbors many immature insects.”

Editor’s Note: The professor is concentrating so intensely on what he’s saying that he almost falls into the pond again. Wow, that was close!

Professor Seismo: “If you explore ponds for any length of time you will come across guests of the eight-legged variety—spiders. Many pond spiders hunt and sleep in the thick jungle of plants that ring the shoreline. A few spiders have the ability to walk on the surface of the water and they are easy to spot. This is amazing enough, but Jesus also fashioned one type of arachnid that can actually live underwater!



Water spiders

“Water spiders build ball-shaped watery houses, similar in appearance to the man-made diving bells of the nineteenth century. These bubbles of air in which they live are constructed

¹⁶ True flies belong to the order of insects called Diptera. Read about flies in *HIDDEN TREASURES* Volume 3 Number 2.

from their own silk and aquatic plants. The oxygen they need for their transparent underwater homes comes directly from air dissolved in the surrounding water.”

Editor’s Note: Professor Seismo pauses for a few moments in silent worship of God as he surveys the amazing things our Lord Jesus has created.

Professor Seismo: “As we stand on the shore of this pond, we experience a wealth of life: dragonflies dart to and fro, elegant mayflies dance in the air above the water, kingfishers dive in search of food, and red-wing blackbirds call out their familiar ‘oak - ah - LEE’ from their perch in the cattails. Yet, the amount of activity we see above the surface pales in comparison to the myriad of life in its depths. These organisms collectively declare our Lord Jesus as the **God of Life**, for He created all these things (Hebrews 1:2-3a). Yet, the pond’s unending motion is strangely mixed with a captivating, unseen calm which also proclaims our Creator is the **God of Peace** (Isaiah 9:6).

Somehow, effortlessly and ineffably, He commands billions and trillions of organisms, crowded into our ‘miniature ocean,’ to peacefully coexist.¹⁷

“And as you’ll see when you go on a ‘tour’ of the strange world that lies beneath a pond’s surface, much of what God created here is other-worldly, dimly reflecting **His infinite holiness**.

“But best of all, in my opinion, is how God expresses a certain ‘playfulness’ in the lives of many pond creatures. I think this is what attracts us to ponds. Along with His other attributes—God’s love, peace, gentleness, beauty, and holiness—we see **Christ’s winsomeness** (His delightfulness) clearly revealed in ponds.

“The finest parents I’ve ever seen are those who can understand the heart of a child. They are not afraid to get down on the level of their children. And God our Father is the finest father in the universe. He understands best what it’s like to be a child, because God made all children! In Christ, God even experienced childhood. I think this is why He made ponds, and in ponds we see our Creator’s joyful heart!

“So, allow me to close where I began, considering the life of one of God’s pond creatures—the whirligig beetle (*Gyrinidae* sp.). This beetle spends most of its days spinning round and round on the surface of the water. Whirligig beetles remind me of bumper cars at an amusement park. Their back legs beat an incredible 50 to 60 times each second. And with two large eyes, each divided in half, Jesus allows this insect to peer both above and below the surface of the water at the same time. You see, the designs of our Lord are truly delightful because He is our winsome God!”



Whirligig beetle

Editor’s Note: A discussion of the strange and beautiful underwater creatures Christ included in ponds will be featured in our next issue of **CREATOR**, Volume 13 Number 2. □

*Then will I go to the altar of God,
to God, my Joy and my Delight.
Psalm 43:4a*



DR RICK DESTREE
Editor

PASTOR HUGH FITZPATRICK
Consultant

KELLEY CARLSON
COLLEEN DESTREE
Contributing Artists

GRETCHEN GANZEL
RACHEL WILEY
Editorial Proofing

REED EVANS
Printing

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¹⁷ It is true that many animals survive by eating other animals, but rarely does one species use another to the point of extinction.