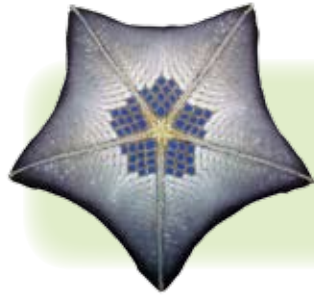


The Complete
AQUARIUM
Adventure

A FIELD
TRIP IN A
BOOK



**by Merilee
& Bill Clifton**



*DEDICATED in memory of Bill's parents, Bill and Bonnie Clifton;
in honor of Merilee's parents, Leland and Frances Lastinger;
and to all Christian parents who embrace the challenge
to bring up their children in the nurture and admonition of the Lord.*



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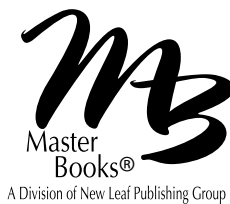


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Included in your TOOL KIT

(envelope of fun in the back of the book!)

- » 31 Animal Fact Cards
- » 7 Ocean Zone Cards
- » 3 Aquarium Animal Alphabet Cards
- » 3 BingOcean Cards



Dear parents and teachers,
The Complete Aquarium Adventure is a fascinating guide for field trips to an aquarium or similar place like an oceanarium, marine-life park, marine science center, coastal park or wildlife refuge, or even a beach. This “field trip in a book” is designed to be used by individual families, homeschoolers, and Christian school groups going on a field trip to an aquarium setting. However, it can also be used independently at home or in a classroom environment.

One of the greatest ways for students of all ages to study God’s created world is to investigate the oceans. We have put together this book to help you not only have an informational resource for studying the oceans and their inhabitants, but also to actually plan and conduct an educational, fun-filled trip to an aquarium, and then follow up with interesting activities and projects. We have spent many years planning and conducting marine-oriented field trips and are excited to share our experiences with you. Everything in this book is presented from a Christian worldview, based on God creating the earth, the universe, and all life forms in six literal days.

God’s world just naturally opens up to the inquisitive mind when studying earth’s greatest realm — the oceans. As your aquarium adventure unfolds, you will discover God’s great plan for water on our blue planet. You’ll learn about the water cycle, animals that live in and around water, how God designed these animals for their watery home, what you can do as a steward of God’s creation, to preserve and protect water for aquatic animals (and humans), and much more! At an aquarium, many graphics, handouts, programs, and shows will present evolutionary ideas as facts. *The Complete Aquarium Adventure* is intended to provide you with information and answers from a biblical, creationist viewpoint and to honor God our Creator as it focuses on water and the awesome creatures He made to live in it.

Jeremiah 9:23–24 says, “Let not the wise man glory in his wisdom, neither let the mighty man glory in his might, let not the rich man glory in his riches: but let him that glorieth glory in this, that he understandeth and knoweth me, that I am the LORD which exercise loving kindness, judgment, and righteousness, in the earth: for in these things I delight, saith the LORD.”

Our goal is not simply to make people smarter or wiser; it is to point them to the Lord God of this universe, who made all things in and through His infinite wisdom and power. We hope this book will help you achieve this with your students.

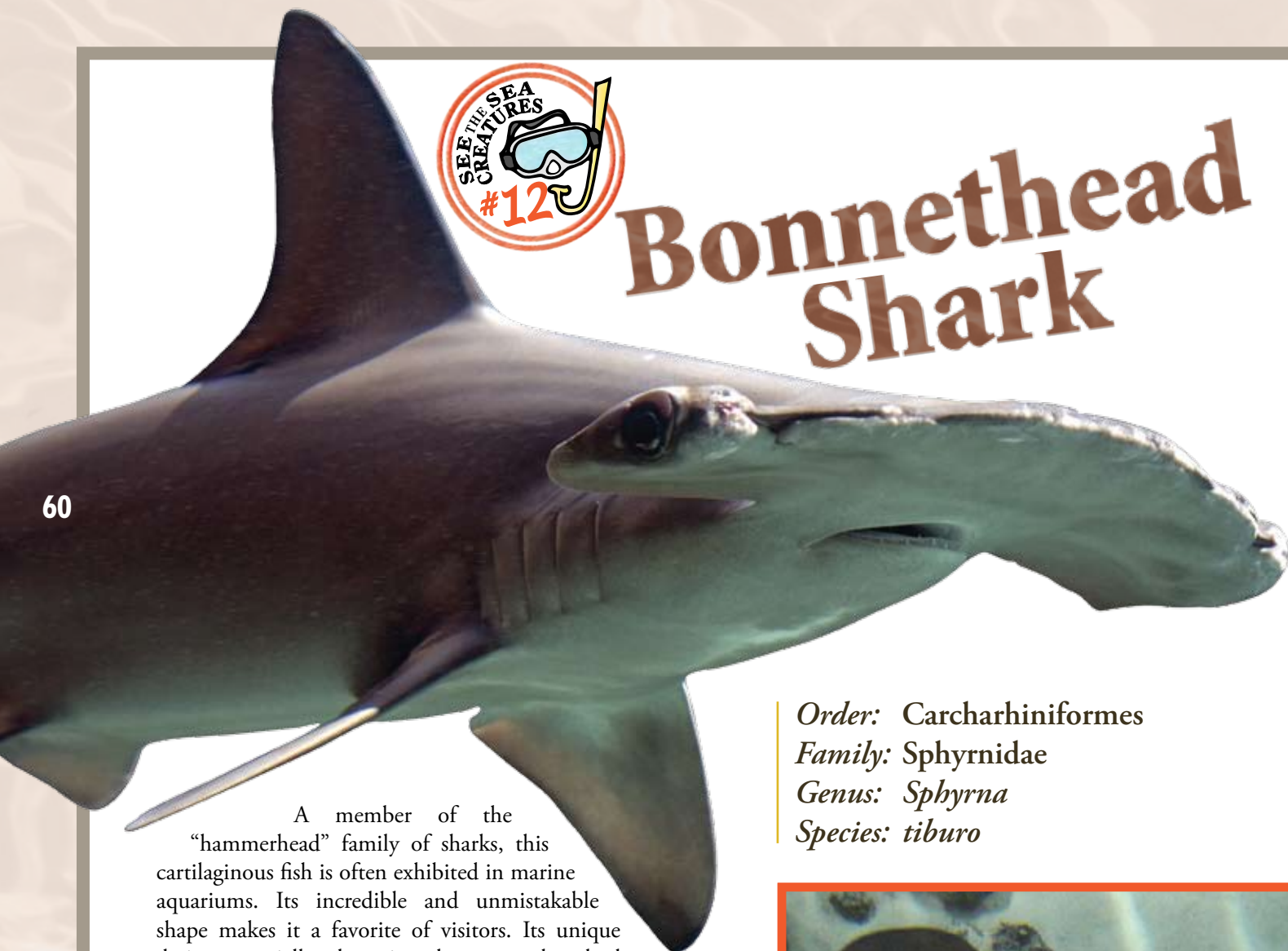
WELCOME ABOARD!
 Bill and Merilee Clifton





Bonnethead Shark

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A member of the “hammerhead” family of sharks, this cartilaginous fish is often exhibited in marine aquariums. Its incredible and unmistakable shape makes it a favorite of visitors. Its unique design, especially when viewed next to other sharks, causes one to stand amazed at the intelligence and imagination revealed by its Maker.

The hammerhead shark family is instantly recognized by the wide, flattened head of the sharks. Bonnetheads do not grow as large as some of the others in this family, normally reaching a length of about five feet and weighing nearly 25 pounds. They are

Order: Carcharhiniformes
Family: Sphyrnidae
Genus: *Sphyrna*
Species: *tiburo*

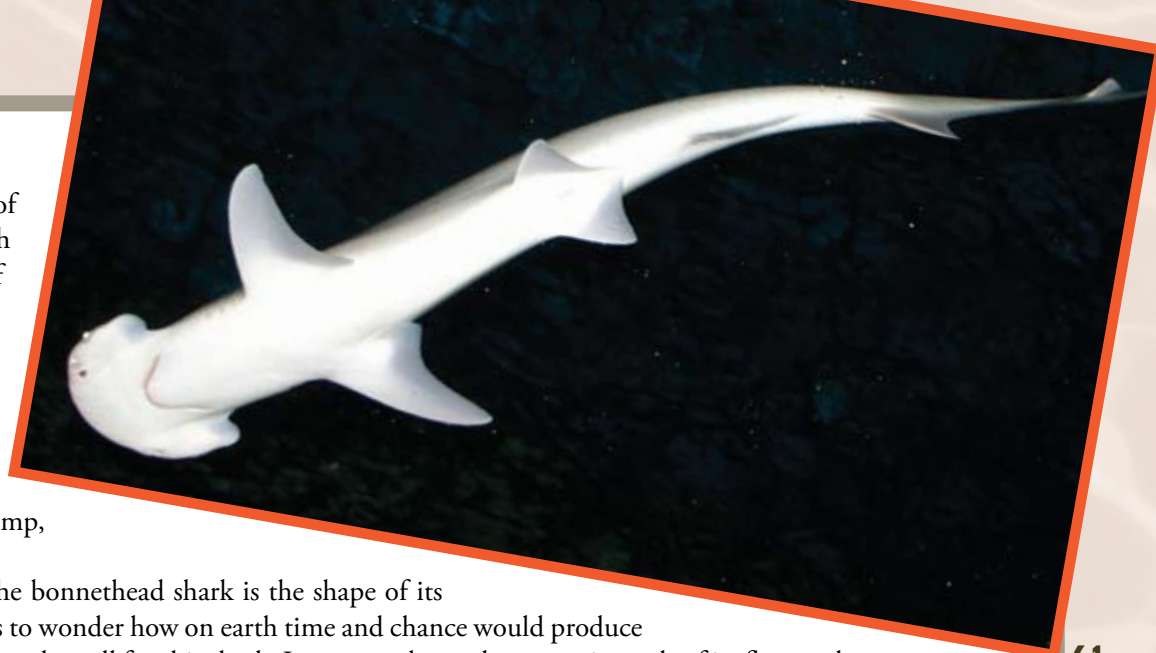


found along the Atlantic coast of the United States and as far south as Brazil. They also live in the Gulf of Mexico and the Caribbean, and their range can carry them along the Pacific coast of the United States down to Ecuador. Rarely traveling alone, they inhabit the coastal shallows and reefs searching for small fish, shrimp, and octopi.

What intrigues people about the bonnethead shark is the shape of its head. Even the greatest skeptic has to wonder how on earth time and chance would produce such an odd shape. But the shape works well for this shark. Its eyes are located at opposite ends of its flattened head, giving it extra wide vision. Sharks have nostrils that give them an acute sense of smell. Also on the head between the eyes are hundreds of tiny holes called ampullae of Lorenzini, which house nerve endings sensitive to electrical fields. These highly specialized electroreceptors can detect electromagnetic fields given off by potential prey. They can even detect food sources hidden under the sand and out of sight! Now we all know how complex electricity is, and few people really understand how it works. But here is an animal that uses electromagnetism to detect its food. How can something like that evolve over millions of years? Is that not the direct result of intelligent design? How could it be anything else?

Another incredible design feature of the bonnethead shark is its lack of a swim bladder. As stated earlier, this lack is characteristic of all cartilaginous fish. The swim bladder in bony fish inflates with air and helps the fish maintain its horizontal position in the water column. So how does the shark keep from sinking? It uses two methods to maintain its horizontal position: it has a large liver containing oil, which is lighter than water. This enlarged liver helps sharks to achieve some buoyancy. Also, sharks swim continually to keep themselves in a level position. Their large pectoral fins act as diving planes to control their vertical movement in water. In fact, submarines have specifically designed “diving planes” at the front of the ship to control their diving depth. The shark provided a good model for this.

So enjoy the bonnethead shark in the aquarium and be reminded of the intricate designs the Creator has established in the countless numbers of organisms on display.



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