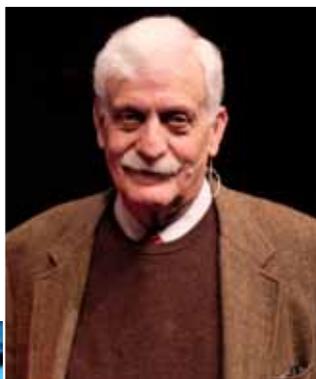


## Wonderful Weekend!

Creation Weekend 2015 proved to be as exciting and informative as the organizers had hoped. Dr. Raymond Damadian, of New York, inventor of the MRI scanner and founder of FONAR Corporation, provided large audiences in Edmonton with lots to think about. In his initial lecture on Friday evening, Dr. Damadian shared some of the story of how he first came to the idea for an MRI scanner and how he was able to demonstrate the effectiveness of his idea.

Having carried out postdoctoral research at Harvard University in biophysics, Dr. Damadian's interests focused on electrical conditions in the human body. Since differences in sodium and potassium concentrations (for example) in nerves produce an electrical charge, and since the reversal of this charge produces an electrical signal which moves along a nerve, Dr. Damadian spent three years



looking for a sodium pump in cells. Many experts supported the idea of a sodium pump, but eventually Dr. Damadian concluded that there was no such thing.

This initial discussion seemed very esoteric but it was important to understand where the idea for the MRI came from. So Dr. Damadian continued with his story. At the State University of New York, he next researched the 'ion exchange resin hypothesis'. The idea is that sodium sticks to a negatively charged protein in the cell. The same thing holds for the potassium ion. And both positive ions (sodium and potassium) are also surrounded by water molecules which are also charged. But the sodium ion has a higher charge density than the potassium ion and so attracts a bigger clump of water. As a result, potassium fits better inside the cell.

Dr. Damadian went to Pennsylvania to use a pulse nuclear magnetic resonance machine (commonly used in chemistry) to test his hypothesis on a test tube of bacteria. The test involved a magnetic coil

*continued on pg.6*

## Living Waters

This is one part nature documentary and one part evolutionary takedown. Illustra Media understand that a great way to expose evolution is to take a close in-depth look at some of the creatures that God has made. In Darwin's day scientists didn't have the ability to look inside the cell, and only had a glimmering of how incredibly complex even the simplest living creatures

are. Now we know so much more – it turns out that even the simplest cell in our body has astonishingly complex and coordinated inner workings. Some have compared the complexity of a cell to the complexity of an entire city!

In other words, the more we know, the more apparent it is that evolution can't be so.

In previous films Illustra Media took a close look at butterflies (*Metamorphosis*) and birds (*Flight*). This time they have turned their attention to four maritime creatures: dolphins, sea turtles, pacific salmon, and humpback whales.

Time doesn't allow a full detailing of just how awe-inspiring this investigation is. But I'll give you a small sampling of what the documentary shares about the complexity of dolphins. These creatures can distinguish between a ping pong ball and a golf ball via echo-location. This is a form of sonar, and better *Continued on pg. 2*

Reviewed by  
Jonathan Dykstra



# Living Waters

*Continued from pg. 1*

than anything man has ever constructed. The dolphin's sonar system can spot fish up to six inches under the sand and can find a BB at the bottom of a swimming pool.

Dolphins also have a complex air return system which allows them to make the high frequency sounds they need for echo-location by blowing air past two sets of "phonic lips" and then recoup that air and redirect it back to its lungs. This air return system allows it re-use this air and to echo-locate for more than ten minutes without needing to surface for air.

This is only scratching the surface of the dolphin's complexity but this is already enough to expose the impossibility of evolution. The dolphin is able to:

1. make the sonic sound
2. focus and direct it
3. receive it
4. and, finally, have the ability to

interpret and understand the signal they are getting back

All four of these elements are needed or else the system won't work at all. So how could evolution – random mutation and natural selection – be responsible? The idea that all four elements evolved to be at the very same time is beyond fantastic. So too is the idea that they would evolve one after another and be selected for, despite having no function (despite having no evolutionary advantage) until all four are finally

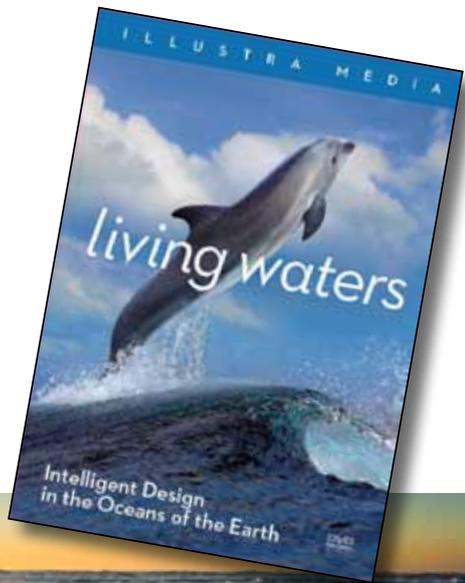
developed and the whole system is up and running. Evolution simply can't account for systems such as this, which are so obviously and clearly designed.

*Living waters* is a remarkable documentary with wonderful visuals of all the creatures discussed. My pre-school children weren't able to follow the discussion, but the close-up videos and computer animations kept their attention. Meanwhile their mom and I were stunned by the sheer brilliance and creativity of God!

I should mention that while mention is made of an Intelligent Designer, He is never specifically named as the God of the Bible. That is disappointing, but every Christian watching this will most certainly give God glory. I can't recommend it enough – this is an amazing look at some seemingly simple but incredibly complex creatures.

*Living Waters*. DVD 69 minutes.

Review reprinted with permission from *Reformed Perspective* October 2015 p. 32



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Its purpose is to discuss the creation model of origin in terms of scientific details.

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# Celebrating Winter Communities

By Moxie

(with Tina and Andrew)

Recently the people of Edmonton have flocked to a new attraction in our part of the world, an ice castle. This edifice features glassy walls that are up to 3 metres thick. There are arching chambers, tunnels, a fountain with liquid water, and slides that the adventurous can ride down on their bottoms. The whole structure weighs about 27,200 tonnes and covers 1 acre. By the time spring comes, about 38 million litres of water will have been used to build and maintain this winter wonder.

During the building phase, water was sprayed every evening onto metal racks. Workers harvested the resulting icicles and then used these as foundations for the walls. The workers then sprayed more water to cement the icicles and increase the size of the structure. The ice castle is certainly a man-made object, but the building material that gives this structure its artistic cachet, comes entirely from the amaz-

ing properties of water. Man did not create or design water, God did. We merely benefit from how water works.

Consider that when water freezes, at 0 degrees C, it expands and actually becomes less dense than liquid water. All water ice on earth's surface is a hexagonal crystalline structure. It can be transparent if it is very pure, but when it contains bubbles or sediment, then it assumes a bluish colour. The thicker the ice, the deeper is the blue appearance. Freezing water sticks to ice which is already present, so icicles and ice formations can be built up by adding more water at cold temperatures. And the hard texture of solid ice allows for the creation of the artistic effects. Scientists are not totally sure what gives ice its slippery quality, but they suspect it has something to do with melting of a thin

layer from friction as an object moves over its surface (as in skating, sliding and skidding). So even in the depths of winter, we can observe the wonderful works of the Creator. On this occasion we are observing some properties of ice and snow.

When you go outside this winter, see if you can observe any beautiful hexagonally shaped snow flakes. Car windshields are sometimes a good place to view these when it is snowing. Perhaps too, you will observe some of the wildlife that manages so well even when the thermometer plummets. That these creatures can survive, is another wonderful design feature, which comes from the hand of God. Perhaps you would like to make a list

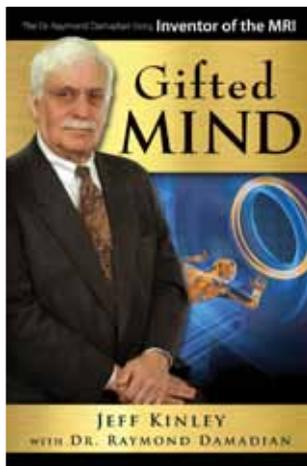
of wonderful things you observe outside during the cold days of winter. You will certainly have some interesting and inspiring information to share with your friends!



© Ingrid VanderGaag



# An Inspiration to us all



Reviewed by  
Margaret Helder

of how God worked in the life of the amazing inventor of the magnetic resonance imaging machine (MRI). This machine has only been available since the 1980s, yet it has impacted for good the lives of millions of people.

The book describes the family background and youth of Raymond Damadian, a New Yorker of recent Armenian/French descent. Through all his life experiences, Dr. Damadian considers that God was in control of his life, even during the time when Dr. Damadian considered himself an atheist. Thus he declares: "Looking back, it is clear that the hand of God was on me for my good. His divine providence was guiding me on a path whose destination was yet unknown to me at the time." (p. 29) And "I have always felt as if God's guiding hand was on me, even through a season of my life where I relegated Him to the back seat of my life. Even then, He was still sovereignly directing my path." (p. 163)

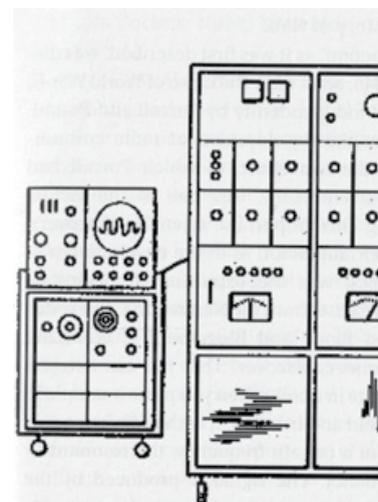
While the core of the book deals with the exciting story of the invention of the MRI, the message is that all Christians have been placed in this world to make a difference in their society. Not only are believers to promote the truth of the gospel, but they are also to work for practical benefits for their fellow man. The invention of the MRI is an example of this. Thus he declares: "Inventions like the MRI simply liberate and unveil His [God's] truth for the benefit of mankind, just as it was His revelation of electricity to Faraday, wireless transmission to Armstrong, electric lighting to Edison, and aerial transport to the Wright brothers." (p. 11) But is not just a few people who are to strive for the truth, all of us are to do so, not just in our homes and church communities, but in all society including academic, legal, political and scientific communities. (p. 20)

It is interesting to read how God

brought Dr. Damadian to a "eureka moment", where he suddenly perceived the potential for a technology that was at the time being used in chemistry (on a very small scale), to be developed on a very large scale for medical diagnostics of living people.

Trained as a medical doctor with research interests in biophysics, Dr. Damadian sought to research electricity in the human body: "Early in my research I became fascinated by the phenomenon that every human being is a walking electrical plant generating his (her) own electricity." (p. 44) This electricity is what powers the body's senses and thinking, as well as motion and muscle contraction (as in the heart). Other scientists had suggested that it was the highly unequal concentration of potassium ions (atoms) inside the cell, with many fewer outside the cell, that allowed for the voltage. But sodium was another possible candidate for providing the voltage. Why was potassium involved, and not sodium (with concentrations inside and outside the cell the exact opposite of that of potassium). There was a theory to explain this, but nobody had been able to establish if it was valid or not.

*The apparatus and method for detecting cancer in tissue", designed by Raymond Damadian*



**NUCLEAR INDUCTION APPARATUS & DISPLAY**

The brand new book *Gifted Mind* has it all: inspiring message, an exciting story with diverse characters, conflict resolution and a happy ending. This is a book that the reader will be reluctant to put down. Best of all, however, this is a true account

In pursuit of some answers, Dr. Damadian and a colleague tried a highly unusual technique, involving a test tube of bacteria placed inside a super strong magnetic field. The resulting signal generated from inside the bacteria, revealed the quantity and location of potassium inside the cells. This was a most remarkable moment, as Dr. Damadian remarked. "Without any invasion whatsoever of the sample itself, [we] measured the chemistry of a compound within the intact *interior* of a living cell entirely *non-invasively*." (p. 53)

At this point Dr. Damadian had a sudden realization: "Do you realize that if we could do such a thing on a human body with antennae external to the body we would be able to track down the live chemistry of any tissue within the body non-invasively?" (p. 53) This set Dr. Damadian on an entirely different research path, this time into medical technology. And the rest is history! However Dr. Damadian kept encountering resistance to his idea. At every step, there was resistance and conflict from some people, and support and assistance from others. The scientific and medical research estab-

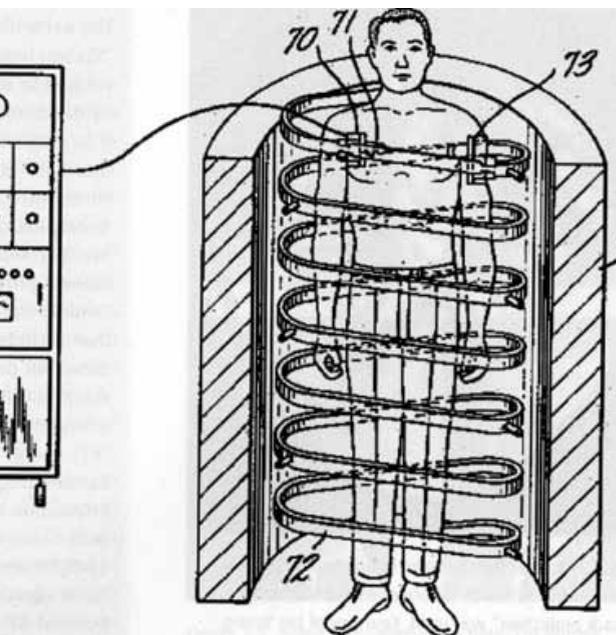
lishments were, for the most part, most unhelpful. Dr. Damadian's applications for funds were turned down time and time again. If it were not for some really miraculous events and support, the MRI would never have become a reality.

The book thus describes the scientific basis for the MRI machine and how the Damadian team worked to overcome many obstacles. Even after his invention became a reality, Dr. Damadian had to fight in court over many years, right up to the Supreme Court, to defend his patent against big business which sought to exploit his invention (without paying royalties). The significance of MRI is that it provides images of soft tissue in the body, even distinguishing each normal tissue type from all others, and diseased tissue from healthy tissue. This is in contrast to X-rays, which provide images of bone, but only poorly reveal soft tis-

ues. In addition, X-rays can damage living cells.

There are many interesting MRI images provided in the book, and a discussion of some of the ways that MRI technology can be used to promote patient care. For those looking for scientific insights, the book provides detailed discussion of the physical processes underlying the MRI technology. For those seeking to learn about the events, the account is lively and interesting. Dr. Damadian also makes it abundantly clear that a literal six day creation (as described in Genesis) provides the basis of his understanding of science and the Gospel. Altogether this book has something for everybody! Highly recommended.

Jeff Kinley. 2015. *Gifted Mind: the Dr. Raymond Damadian Story/ Inventor of the MRI*. Master Books. pp. 240.



# Wonderful Weekend!

*Continued from pg. 1*

(2.25 inches in diameter). When the sample was placed inside the magnetic field, the sample gave off a radio signal. Based on the amplitude (intensity or brightness) of the signal and its decay time (time for the signal to disappear completely), the scientists could tell which sample contained more charge (and more water).

This was the eureka moment for Dr. Damadian. As a medical doctor, he also knew that potassium levels are different in cancerous tissue than in normal tissue and the accompanying water levels would be different too. Cancerous tissue should show a brighter signal and a longer decay time than normal tissue of the same type. Thus Dr. Damadian published a technical article in the journal *Science* in 1971. In 1972 he applied for the first patent in this field, which he received in 1974. Dr. Damadian and his research team next set out to prove that this technique would work on living people.

There was much resistance to Dr. Damadian's proposal. Finally the Damadian team managed to build a prototype machine, after a year of work and with almost no money for expensive components. On July 3, 1977 the first successful signal was obtained from the body of a gradu-

ate student. He had been a reluctant test subject, but all went well. The rest more or less is history. An unexpected bonus to this research was the discovery that the various normal tissues in the body also all display different signals because they all have different amounts of water. So MRIs can image all the normal tissues in the body without any invasive procedures. So this is how a Bible-believing Christian came to make medical history.

On the Saturday evening Dr. Damadian demonstrated the kind of benefits which are possible from MRI scans. He described recent research on the cerebro-spinal tube which conducts fluid inside the spinal nerve and the brain. He showed how imaging can demonstrate if this tube is ruptured from neck injuries and how this might impact neurological health. From there Dr. Damadian transitioned into the topic he is really "passionate about". That is creation. As an introduction to the issue he reviewed the words of some great scientific thinkers of the past on creation and then he looked at the precision of information required for the human body to function. In this context he described the complexities of the human camera eye and the human ear.

People attending Dr. Damadian's lectures were very appreciative of the interesting information that he presented. Many people spoke to him after the sessions and he had time for everyone. Other speakers on Saturday included Margaret Helder who spoke

in the morning on surprising examples of real camera style eyes in some animals with very different body plans (without back bones and some even without brains). This situation demonstrates that a designer was required to confer this eye design on creatures with such different life styles. No spontaneous process could lead to such complex structures in organisms as different as a single cell alga and a coyote! She also discussed the precision of information in an organism's genetic material which is required to produce the organs, tissues and cells that work to support life. She tied this in to the wisdom demonstrated by God in the creation of all living creatures.

Vance Nelson spoke to a large crowd on Saturday afternoon. His theme was "dire dragons," examples of dinosaurs in the art of ancient peoples, which indicate that they had first hand knowledge of such creatures. However he began by discussing examples of living fossils followed by a discussion of radiometric dating of soft tissue in dinosaur and other fossils. All these examples suggest that these artifacts may be only thousands of years old. Vance Nelson's lecture was visually very sophisticated and he had examples of many related artifacts on tables at the front of the hall.

All in all Creation Weekend provided much to stimulate a wide variety of interests. We are most grateful for a wonderful weekend with much to think about in the days ahead.



# How Does Your Garden Grow?

Even in Alberta, there are many crops which we could choose to grow in our gardens. Do you like perennial flowers? Lots of people grow a wide variety of such plants, but maintaining them involves a constant battle with weeds. Others choose edible plants to grow. These may also be artistic, as in some cabbages or large areas planted with lettuce, or string beans. Humming birds love the bright red string bean flowers, so the garden can serve several uses. Other people choose plants that taste good but are not particularly attractive to look at (potatoes for example).

The following is a story which was printed in Dialogue in 1982. It is about some special insects with a special food crop. Enjoy!!

## Ant Gardens

Do you like mushrooms? Very few people have a take-it or leave-it attitude to these expensive items. They either love them or hate them. If, instead of eating one, you were to chop up part of a fresh mushroom, and carefully tease it apart in a drop of water, then under a microscope you would see that the mushroom is made up of many tiny tubes (called hyphae) all clumped together.

For us, mushrooms or fungi are tasty, but they do not give us good nutrition. There is however a group of ants found only in the Americas, particularly the Caribbean islands and tropical North and South America. Not only do they love certain fungi, they actually depend upon them for life.

Can you imagine a giant underground ant nest made up of hundreds

of rooms? These rooms are lined with millions of tiny fungus tubes (hyphae) growing on chewed up leaves. Projecting from the fungus hyphae are fatter structures. Millions of worker ants mill about feeding on the fat fungus structures, and chewing them up and feeding them to young ants and to the queen of the colony. The worker ants also chew up living leaf parts so that

these ants or is it just a tasty extra? When the queen goes on a mating flight, she always carries along a pellet of fungus. As she prepares her nest, she carefully starts a new fungus garden. Why take all that trouble?

It has been found that eating the fungus is essential to the life of the ant colony. The nutritional content of the swollen fungus bodies has been found to be ideal for the growth of the young ants. The fungus is their only source of nutrition. For the adult ants, plant sap appears to be an important part of their diet. Nevertheless if they did not continue to eat the fungus they would be unable to digest anything at all.

The fungus depends upon the ants' activities for its life. It cannot spread itself and it needs chewed plant parts for something upon which to grow. We have seen that the ants similarly depend upon the fungus. How does the queen know enough to carry some fungus with her? How do the workers know

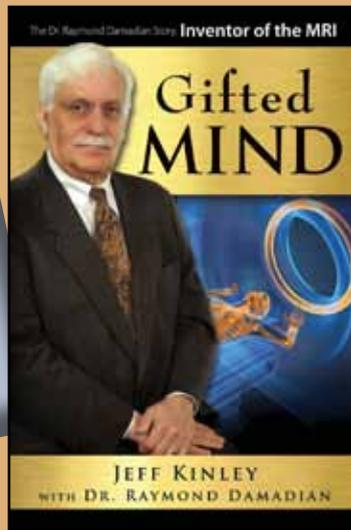
enough to keep the garden going and to feed the young? It was not chance processes but our Creator who gave these creatures their abilities and tasks. How wonderful is our Creator! How wonderful is His Creation!



more fungus will grow. At night, the worker ants, with never a dull moment, sally forth from the nest to gather more living leaves to keep their fungus garden growing. A large ant colony can strip the leaves of an orchard in a single night. What an unpleasant surprise for the farmer in the morning!

Is the fungus really important to

Most people who sit around waiting for their ship to come in often find it is a hardship.  
Got time? Read!



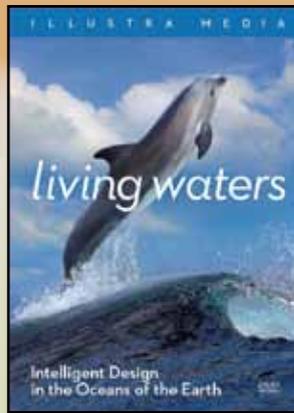
## Gifted Mind

**Jeff Kinley**

The fascinating story of how medical research specialist Raymond Damadian came to invent the MRI and how he sees the hand of God in all this. We also learn why this famous man is passionate about creation science.

*Hardcover/240 pp/full colour*

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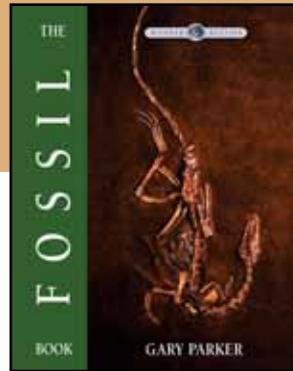
## Living Waters

**Illustra Media**

Another wonderful program on animals, which illustrates their beauty and amazing functions necessary for survival, this time in the sea. Here we discover highly complicated and unique design features in dolphins, Pacific salmon, sea turtles and humpback whales. In all this we see the work of their Creator!

*DVD/68 minutes*

**\$15.00**



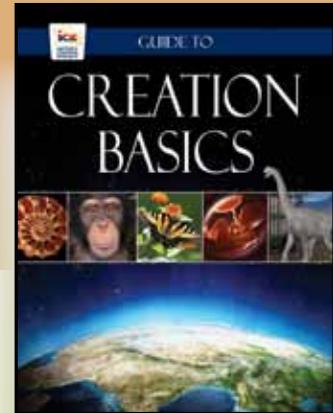
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