

## ONLY GOD COULD HAVE MADE THE DEFENSE SYSTEMS OF THE HUMAN BODY

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*Belief in God is the greatest need of the peoples of the world today. There are many things in biology for which evolutionists have no explanations. One of these, that demands the infinite intelligence of God, is how the human body defends itself against germs.*

*The skin, the tears, mucous in the nose, the saliva, and digestive juices all contain antiseptics against germs.*

*Breaks in the skin are a common place for germs to enter the body. One of our greatest defenders are the leucocytes, which surround and kill germs. Another line of defense involves the macrophages.*

*In addition to leucocytes and macrophages, the human body opposes germs by antibodies. By means of antibodies a person can gain immunity against germs.*

*Such wonderful defenses for our bodies could not have come about by evolution. Only God could provide them.*

### Introduction

Everybody knows that Communists all over the world have rejected God. Sad to say, and far more than we realize, the intelligensia of the Western world have also rejected God although they are not so vocal about it as the Communists. Evidence of this is beginning to appear in the magazines. One of the most thorough discussions of this point is a main article in the March, 1970 issue of *Reader's Digest* entitled, "Is There a Substitute for God?"<sup>1</sup> This article demonstrates man's unsuccessful attempts to remove God from his consideration.

The evolutionary theory has caused many educators in biology, geology, and related subjects to reject the Bible along with its author, God. Anyone who understands biology realizes that it is extremely complicated. Evolutionists, in their arguments, simplify biological phenomena grossly. If one looks into the various sciences related to the study of life, he will realize that life could not possibly exist without the infinite intelligence of God.

This article is an attempt to show that the defenses of the human body against disease germs could not possibly have evolved by unguided evolutionary processes.

### Many Advances in Last Century

Although men have studied the ailments of the human body for millennia, only in the last 100 years have they made any appreciable advancement. In fact it is only in the last 50 years that spectacular progress has been made.

Most of the progress in studying the body's natural defenses has to do with things invisible to the unaided eye. Until the invention of the microscope and the wonderful work of Pasteur in the middle of the 1800's, the basis of most diseases was not known. Germs and viruses were

not recognized, and were beyond the reach of real study. Pasteur laid the foundation upon which much of modern medical research has been built.

Although there is very much to be learned yet about the physiology of the human systems, what we know already should convince us that no one but God with his infinite wisdom could have planned it, let alone have brought it about. It is unthinkable that the human body could have come about by evolution, that is, by chance.

Since germs are invisible to the unaided eye, we have no empirical knowledge of how many of them might contact the body both externally and internally in a given interval of time although the best estimates indicate at least a billion daily. Of course only a few of these may cause disease in humans. However, the defenses of the human body are prepared for them all.<sup>2</sup>

### Portals of Entry of Bacteria

Let us begin with those germs that make contact with the outside of the unbroken skin. One would not think of the human skin as being to any extent antiseptic, but it is. For instance, the virulent dysentery germ can live for hours on a microscopic slide yet on the palm of the hand it lives only 20 minutes. Of course not all germs are equally vulnerable, as some can live indefinitely on the skin surface.

On the second trip to the moon, two of the astronauts in the capsule got very minor scratches on their skin. On earth these small scratches would not have been noticed, but on the trip the scratched places became infected, and one spot developed a severe itch. The unknown factor here is probably the atmosphere. Evidently, in the different atmosphere of the capsule, the body systems did not function as usual.

Tears, that keep washing the eyes, contain one of the body's simplest defenses. Suppose a fleck of dust carrying a disease germ enters the eye.

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In the tears there is a powerful antiseptic named lysozyme. Believe it or not, this antiseptic is so powerful that one tear drop in a half gallon of water will still kill some kinds of bacteria.

One of the commonest places where germs can enter the body is by way of the mouth. The saliva is the first line of defense. In the saliva there is also lysozyme aided by three other antiseptics named leukins, lysins, and plakins. These have not been well studied as yet. Those bacteria that pass through the mouth and reach the stomach are mixed with digestive juices. These juices are destructive of most bacteria so that very few reach the intestines.

Another avenue of entrance into the body is the nose. The mucous fluid attracts germs similarly as flypaper attracts flies. Thus bacteria are likely to be sneezed out or running mucous secretion may wash them out. Tiny hair-like fibrils are constantly moving in the mucous so that germs go toward the stomach where they are destroyed.

Even a break in the skin can admit germs at a fantastic rate. A given germ doubles every 20 minutes and this would multiply it to a million in seven hours and several quadrillion by the next day. To offset such an increase, inflammation occurs and involves a release of chemicals throughout the body. Then these chemicals cause relaxation in the blood vessels which allows plasma to seep out. This attracts the leucocytes, white corpuscles, that constitute one of the greatest defenses of the human body. Also there come certain chemicals which retard bacterial growth.

#### Internal Body Defenses

The leucocytes are the body's greatest "police-men" against germs. They are somehow attracted to the point of infection. Researchers report that it is exciting to watch under the microscope as leucocytes come up to an invading bacterium, push it against some solid surface, flow their jelly-like mass around the bacterium to kill it and then move on to attack another germ. Millions of leucocytes are assembled to the point of invasion. Not only do "active" leucocytes arrive but "reserves" also move into the fight.

Some of the chemicals released during the battle enter the blood stream and stimulate release of leucocytes. Within minutes millions of added leucocytes enter the blood stream. Usually when a physician suspects a serious infection inside the body, he counts the number of white cells in the blood. If the count is abnormally high it proves that leucocytes are being released to fight a concentration of germs somewhere in the body. Bone marrow is stimulated to speed up synthesis of leucocytes.

Fibrinogen, the blood clotting material of the plasma, quickly solidifies into a network of strands which gathers the leucocytes into a wall around the "battlefield," thus localizing the struggle and forming pockets of pus in boils and abscesses. Perhaps if the human mind had planned the body defenses it would have been satisfied at this point, but the battle of the germs would not necessarily have been victorious at this stage. The God-planned defenses have further provisions.

Additional defense is needed since some germs are coated with a repellent which keeps leucocytes away. Some even have power to kill the leucocyte that envelopes it, but *even in death* the leucocytes continue to release chemicals injurious to germs.

#### Leucocytes, Macrophages Are "Defenders"

To handle these bacteria that are harmful to the leucocytes God has planned another line of defense. Such cells are larger than leucocytes, but are still microscopic. Known as macrophages, they can eat any bacteria and may also consume the leucocytes that contain live bacteria within them. But some bacteria can survive even in the potent macrophage cells.

God has planned yet another defense against this source of danger to the body—the lymphatic system. It is a network of filters that removes germs from the blood, and carries them to glands in the neck. The lymph glands discharge the macrophage, bacteria, and infected leucocytes into the blood stream at a point where the blood enters such disposal organs as the liver and spleen.

God's wonders to protect the human body are still not exhausted. One may well wonder how the leucocytes and macrophages are able to distinguish invading germs from the cells of your own body. Mysterious as this may seem, God has given the body a way of labeling invading particles. These labels are called antibodies. Recognizing the labels the leucocytes and macrophages rapidly attack the labeled germs.

In cases of germs never previously encountered by our bodies, it takes the body a little time to develop suitable labels for the new germs. In such a case the patient may get worse while the invading germs multiply. But, in a short time, when the body produces a suitable label (antibody) for these germs, leucocytes and macrophages then attack the new germs, and the patient begins to improve and usually gets well.

In cases where antibodies have been produced for a particular kind of germ, the ability to produce these labels remains in that patient. If those same germs enter the body a second time,

body defenses are available immediately. In this case the individual may not even be aware of the attack and rapid conquest.

### Immunity Can Be Produced

Vaccination is a method of causing the body to prepare specific antibodies before a person contracts a disease. These antibodies can keep his "defenders" alerted for the germs of that particular disease so he may never become ill. Newborn babies are protected by antibodies of the mother until the new individual is able to produce antibodies. There are many kinds or "strains" of virus which cause influenza ("Flu"). Antibodies against one strain do not protect a person against the virus of another form.

Antibodies circulating in the blood are in that part of the blood plasma called gamma globulin. Gamma globulin can be extracted from donor individuals who have developed antibodies for certain disease germs, and when injected into other persons it gives them immunity to those diseases.

The various means of body defense function together. It would be difficult if not impossible to imagine how each one might have developed

by evolution because each is inadequate by itself.

Since gene mutations are notoriously harmful, it is obscure just how such gene changes might have originated and coordinated these fascinating safeguards.

On the other hand all of these separate but interacting lines of resistance give clear testimony of the Creator's provision for man's well-being. Although we may only speculate about the balance of nature before man's Fall, it is clear in the Bible that God did not intend that man should live forever on the present sin-cursed earth. But it is also obvious from biology that, in the meantime, God has equipped man with intricate defenses against invading micro-organisms—defenses which defy evolutionary explanation.

### References

- <sup>1</sup>Klein, David Raphael. 1970. Is there a substitute for God?, Reader's Digest, March, pp. 51-55.
- <sup>2</sup>Brecher, Ruth and Edward. 1970. How your body keeps you well, Reader's Digest, February, pp. 89-93.
- <sup>3</sup>Singer, S. J. 1957. The specificity of antibodies, *Scientific American*, 197(4), October, pp. 99-106.

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## COMMENTS ON SCIENTIFIC NEWS AND VIEWS

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### Dr. Shute Against Evolution

Many readers will doubtless be familiar with the work of Dr. Evan Shute of London, Ontario, Canada, who has published papers from time to time in the *Quarterly* of this Society. Recently some of his work appeared in a publication devoted mainly to medical matters.<sup>4</sup> The report is based on a paper which he gave at the Bible-Science Seminar held at Hamilton, Ontario, Canada, on June 14, 1969. The paper contains a wide range of facts which may be used against the dogma of evolution.

### Bats and Bioengineering

It is reported that Mexican free-tailed bats have muscles in the middle ear to dampen the stapedius muscle attached to the stapes. This muscle contracts before each of the bat's own squeaks, thus turning off the ear for a short time and avoiding confusion between external sounds and the sound made by the bat.<sup>2,3</sup>

This is remarkably similar to the "T-R" and "anti-T-R" switches used in radar for the same purposes: to avoid overwhelming the receiver with the transmitted signal. The application

to radar was invented about 1940; now it turns out that the bats have been using the same principle for thousands of years.

It would be a useful work if some one were to compile a book of as many of these wonders of nature as possible. There is a precedent for such a work; that is, an ancient book of marvels of nature ascribed to Aristotle. If such a book should be compiled, it might be a most useful thing for engineers and inventors. It happens over and over that some problem arises in technology which has previously arisen in nature. (Aristotle, indeed, remarked that art—or technology—imitates nature.) Thus imitations of nature might provide good solutions to many technological problems.

And the obvious question: How could anyone believe that this arrangement of muscles just happened to evolve at the same time as the other characteristics that the bat needs for navigation appeared? This is an engineering solution to an engineering problem, and only the great Engineer of the universe could have designed it.

### More About the Cony

A matter which has been much discussed is the true identity of the hare, which is said in

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