

Mathematics in the Christian Philosophy of Life  
by C. Ralph Verno  
originally in Torch and Trumpet

IT IS UNIVERSALLY agreed that mathematics is important, that it is indeed very significant in life. This would be admitted even by those who are ignorant of or who dislike mathematics. There would be much less agreement, however, about why mathematics is important or significant. Such disagreement exists even among mathematicians and mathematics educators. Unhappily many of the Christians who think about such things (and there are not very many who think about them at all) basically share the utilitarian view of many non-Christian thinkers, although endeavoring to place it within a Christian context. They think it is wonderful that God has provided such a beneficial tool as mathematics, or that God has given man the ability to develop mathematics in order to serve science. The importance of mathematics in the Christian outlook, as they see it, is in the fact that God has provided it as a remarkably useful vehicle with which to advance the causes of the natural and social sciences, in addition to its usefulness in everyday life.

Such a view of the place of mathematics is, I submit, a shallow and truncated view which fails to appreciate mathematics adequately and which fails to give sufficient honor to God. There is, rather, a much fuller and richer place for mathematics in the Christian philosophy of life. In addition to being shallow, there is something even dishonoring about a strictly utilitarian viewpoint even when one tries to put it within a Christian framework. It is degrading to say to a person. "You are important to me because I can use you." Similarly it is degrading to say the same to mathematics. It is so much greater to say, "You are important because you are you."

In another article (Journal of the American Scientific Affiliation, June, 1968) I submitted that the mathematical way of thinking (i.e. postulational reasoning) is important in sound reformed Christian apologetics and theology. Here, however, I refer to the content of mathematics rather than its methodology. There is in mathematics an inherent beauty, an aesthetic charm. Its enlightened study should produce a feeling of intellectual pleasure, delight and aesthetic satisfaction. It should yield a reaction not unlike that in a person who discriminatingly appreciates one of the other arts. If such a response to mathematics is lacking, it is because its study is unenlightened or because it is approached with the jaundiced eye of prejudice.

Examples of this Philosophy

It is not the purpose of this article to submit detailed examples of such beauty, but we can briefly mention several illustrations of it. There is an abundance of examples of symmetry in mathematics, not only in geometry but also in more abstract areas of mathematics. Numerous striking properties are proven in geometries other than the Euclidean geometry studied in high school. Elegance and beauty inhere in the proofs of various theorems. For example Euclid's proof that there is no end to the prime numbers is a beautiful but simple proof of a significant fact. Another elegant proof is Cantor's proof that the real numbers cannot be placed into a one-to-one correspondence with the natural numbers, a proof which shows that the "infinity" of the naturals is not the same as the "infinity" of the reals. Number theory is replete with many simple but amazing conclusions. There is the sheer fascination

of famous unsolved problems such as Goldbach's number theoretic conjecture that every even number greater than two can be expressed as the sum of two primes; no mathematician has ever proven that this is so and nobody has ever disproven it with a counterexample. Over two thousand years ago the Greeks discovered many of the great number of extraordinary properties of the parabola, ellipse and hyperbola (known as conic sections because they are obtained by the intersection of a plane with a cone in various ways). One of the most astounding sequences of numbers in mathematics is the Fibonacci sequence, namely, 1,1,2,3,5,8,13,21,34,... This sequence is formed by beginning with one as the first two numbers and then each number thereafter is the sum of the two numbers before it. This sequence is intimately related to a very special irrational number known as the Golden Ratio or Golden Section. Both the Fibonacci sequence and the Golden Section have an almost incredible number of very remarkable algebraic and geometric properties; furthermore both occur in many amazing ways in biology, botany, art, architecture and other areas of life.

The foregoing are but a few of the many aspects of mathematics which display a wealth of sheer beauty and fascination. Even knowledgeable people who are not Christians should see much of this beauty in mathematics. They should see mathematics as an art as well as a science. The Christian however, should see in this beauty more reason for praising the sovereign God of the Bible. The believer should be able to look at mathematics and exclaim to his God, "How great thou art!"

#### Man in this Christian Philosophy

To say this is not to deny man's role in the development of mathematics. Indeed we can properly speak of man's creativity in mathematics as we can in music, art and other aspects of culture. Men have inductively discovered various properties, patterns and relationships, and then with God-given wisdom have developed consistent sets of axioms by which they can prove these and other conclusions. Man's creativity is not purely arbitrary, but rather is related to the universe in which he finds himself. Furthermore man does not fundamentally create mathematical properties. Man did not create, but rather discovered the remarkable properties of number theory, for example. He may provide a rigorous, axiomatic development of Euclidean geometry, but he did not create the fact that the angle bisectors of a triangle are concurrent nor the amazing properties of the conic sections. In other words, God has not been surprised nor has he learned anything new when mathematicians have created mathematics. Indeed God knows now the mathematics that has not yet been created by man.

God in his providence equipped men with minds capable of logical reasoning and with the desire to explore, investigate and discover. By the grace of God men have created mathematics with all its beauty, mathematics already known to God. The God of order, who does not contradict himself, built into man the concern for consistency in the mathematics which he explores and creates. So the praise belongs ultimately to God. Certainly man should be commended. God hasn't let a body of mathematics down from heaven on a sheet. It is sad that the historical and cultural significance of mathematics and mathematicians is so little appreciated by well-educated people. We need to do more in our educational process to bring this out. Surely in Christian education we should properly point out man's role in mathematics in history and culture. Ultimately, however, the glory is God's. God deserves praise for the very commendation due to men.

We ought then to advance far beyond a mere utilitarian view of the place of mathematics in life and in the Christian philosophy of life. We should behold and appreciate its beauty and charm. We should see revealed in it the greatness, glory and wisdom of the God of inscrutable majesty and incomprehensibility. We should look at mathematics not simply as a highly useful tool, but much more as a beautiful creative art, and then we should glorify God.