

sources. One can separate out certain verses that use the word *El* for God, and another set of verses using *Y'howah*, and make a fair story out of each. But what does it matter, after all? The Word was written so that it should have an internal sense, and that sense is the purpose of it.

They now have the book of Isaiah cut up into not only two parts, but four or five. The first part is up to the 39th chapter; it describes things from the point of view of one who has not experienced the fall of Jerusalem. In the others, Jerusalem is lying in ruins, but God is giving great new promises and new hopes. Supposing there were two authors—does it matter? I think it matters not a whit! The Lord refers to the Psalms as David's, but some of them were not written by David. In Mark 1:2 there is a reference to a prophecy under the name of one prophet when it was written by another! But in those days scrolls were written in such a way that a scroll might begin "The Words of Isaiah the Prophet" and then continue with other prophetic writings appended. I do not know whether it was done in this case; I leave that to the critics, if they like to do that sort of thing. But the spiritual sense in these books, and in the whole Word, is continuous as constructed, and as Swedenborg received it, and as he saw its spiritual meaning.

HUGO L.J. ODHNER

PHILOSOPHICAL NOTES

Mathematicians and Philosophy. Why is it that many philosophers were mathematicians also? One recalls many of them easily—Pythagoras, desCartes, Leibnitz, Kant, Russel—and many others who if not mathematicians used mathematical arguments—Aristotle, Plato—or others whose writings presume to depend upon the strictest arguments of mathematics or logic—Spinoza, Hegel—or those who, although not mathematicians, as philosophers struck out against mathematicians with reasonings solid enough to indirectly affect the course of mathematics itself—Berkeley—or those who if not philosophers applied mathematics to nature in such a manner as to influence the course of philosophy—Kepler, Galileo, Newton, Einstein, Heizenberg, Schroedinger.

Emanuel Swedenborg, while not a mathematician, was a student of mathematics. As a young man he decried the lack of mathematics textbook material in Swedish, his mother tongue, and composed the small book *Regel-konsten*. He was interested in King Charles' concern with number systems. His *Principia* endeavored to make explicit use of mathematical formulations. He appealed to arguments essentially mathematical or logical in form in *The Principia, Rational Psychology, Animal Kingdom*. He was impressed with the idea—not developed but nevertheless the idea—of a “universal mathesis.”

Necessary Conclusions and Truth. There is a lesson to be gained from mathematics. Necessary conclusions follow from logic properly applied to hypotheses. But if the hypotheses be different so will the necessary conclusions. Which are the true necessities? Why jump to a conclusion so fast? Why should either necessity be true? Witness Euclidean and non-Euclidean geometrics.

The conclusions in philosophy and in science, as in mathematics, are necessary if the reasoning be right—but true only if the hypotheses also be right. The problem in the search for truth involves, among other things, the determination of what is right logic and what are right hypotheses.

This applies in two places: in the culture of our day, as in modern science and in modern philosophy; and in the individual reasoning of each of us. This last may be stereotype, cast in the image of the culture in which we live, or it may be original and creative, adding to or in part correcting that culture.

The elemental criteria of “proper hypotheses” and “proper logic” mentioned above are severe ones indeed. And no rule has been designed to apply them. Thus to some, reason appears as a futile faculty. But what is said above is not the whole story.

Logic has defined a concept which is known as “a universe of discourse.” Within such a universe of discourse many necessities have been discovered or created which are very important to our practical life and also to our understanding of creation. These are more important than facts and somewhat less so than truths. Witness Euclidean and non-Euclidean geometrics.

Necessity That Is Non-mathematical. In these notes at various times the term "necessity" has been used as if its meaning were identical with mathematical conclusions. This is perhaps its best modern meaning. Yet not all men now or in the past can follow mathematical arguments, still less perceive their importance. This does not of course lead them to deny to themselves the feeling of necessity. And so necessity has and has had other grounds than mathematical ones.

One of the most important of these in its effect upon social, philosophical and religious thought is the blind necessity of fate. This was known among early men after the fall as the fate of the gods—man ruled by relentless, autocratic dictates. Even the gods themselves often were ruled by fate. Later the early Christian church became governed by ideas that were essentially fatalistic. Protestantism promulgated the doctrine of predestination. And now some modern scientists entertain the idea that the statistical laws *are* the laws of nature.

E.F.A.

WHAT ARE PEOPLE SAYING?

A University of California scientist is working on a plan "to make Venus fit for human habitation." It was mentioned with very little detail in a recent news item. Presumably the scientist recognizes the magnitudes involved, so that his idea cannot be categorized as a quantitative monstrosity, along with such less professional suggestions as "Why don't they use hydrogen bombs to break up hurricanes?" or "Won't all these rockets deflect the moon from its normal orbit and affect the tides?"

Nonetheless, a scientist who makes such statements leaves himself open to a charge of colossal conceit. What are the conditions required for human habitation? We know what degrees of temperature, humidity, pressure, and a few other things make us most comfortable, and to some extent what variations we can tolerate. But what is the ideal level of magnetic flux, gravitational acceleration, gamma radiation, or percentage of xenon in the atmosphere? Could we live without the Van Allen belts around our planet? Their existence was not even suspected