



## **Readings II in Faith & Science**

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## **The Spirituality of the Scientist**

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## The Spirituality of the Scientist

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In one sense the spirituality of a scientist need be no different from that of any other member of the Church. Pope Pius XII in his encyclical on the liturgy said, "It is unquestionably the fundamental duty of man to orientate his person and his life to God . . . to Whom our free choice must be directed as to an ultimate objective." (Pius XII, *Mediator Dei*, 1947)

The first pope, Peter, and Paul, the greatest missionary the Church has known, issued a challenge which members of Christ's Church are still to meet. We are called "as living stones built up, a spiritual house, a holy priesthood, to offer up spiritual sacrifices acceptable to God through Jesus Christ" (1 Pet 2:5) and to "present your bodies as a living sacrifice, holy, pleasing to God, your reasonable service" (Rom 12:1). St. Paul charges us to "be not conformed to the world, but be reformed in the newness of your mind, that you may prove what is the good and the acceptable, and the perfect will of God. . . . For as in one body we have many members, but all the members do not have the same office: so we being many, are one body in Christ, and everyone members one of another" (Rom 12:21 4-5).

We scientists are to meet those demands of Christ as all Christians are. Our role in the Mystical Body of Christ (the Church) differs somewhat from those of others, but we are all "members one of another." This particular scientist is convinced that in many ways, in our role as scientists, we have a headstart in our vocation as Catholic Christians. Because our work keeps us in close touch with nature day by day, we have an exceptional opportunity to learn more about natural phenomena and about God Who created the universe and its accoutrements. It is easy to imagine God, as we discover some small part of what He has known all along -- DNA, for example -- turning to the heavenly hosts and announcing with delight, "Folks, they found it! It's only been there for a few million years, and they found it!" The human immune system, for example, presumably has been a part of the human body since humans have existed, yet it was discovered only a few decades ago. We are still in the process of learning how it works and how important it is to health and well-being.

In the physical sciences, researchers are continually revealing hidden marvels, from radio and TV to superconducting supercolliders, laser surgery, computers that handle billions of bits of data in a fraction of a second to the more plebeian, perhaps, magic of caller I.D. and computer photography, none of which is new to God.

Each person chooses what best helps him or her grow in the spiritual life. Different people have different ways of keeping in touch with God. Some may prefer private devotions. All, first and foremost, have a duty -- which quickly becomes a joy -- to participate actively in the liturgy, the public worship of the Church, including the Holy Sacrifice of the Mass and the sacraments. The liturgical year, with its annual cycle of Church seasons -- Advent, Christmas and so on -- inspires us to grow in our knowledge and appreciation of the life of Christ in us and in His Church.

*The Constitution on the Sacred Liturgy*, promulgated on December 4, 1963, was the first Constitution published by Vatican II. It demands full, conscious and active participation in liturgical celebrations on the part of Catholics, as a "chosen race, a royal priesthood, a holy nation, a purchased people." It is their right and duty by reason of their baptism. ("*Constitution on the Sacred Liturgy*," St. Paul Books and Media, Boston, p. 48.)

The purpose and meaning of the liturgy is God's glory. It leads to an increase in faith and grace as well as providing instruction in the meaning of Christ's words. While the chief purpose of the sacraments is our participation in the divine life of grace, our sanctification and union with God, the ultimate aim of this sanctification is also God's glory. If our prayer and sacrifice are liturgical - glorifying God through, with and in Christ - we "put on Christ"

and more closely mirror Him in our lives. As we try to live the liturgy and sacraments we grow in realization and appreciation of the bond which exists among the faithful.

Pius XII [*Mystici Corporis (On the Mystical Body)*] stressed that we can grow in the life of Christ through the liturgy. He pointed out that through the heavenly gifts bestowed on and made operative in the Church by Christ and the Holy Spirit, each member can say “I live now, not I, but Christ lives in me.” While he stresses the Church as the Mystical Body of Christ, Pius also points up the importance of the roles individuals play.

Christ wills that the Church (and each of its members) live His supernatural life. His power permeates the whole Body and nourishes and sustains each of us according to the place which we occupy in the Body in the same way as the vine nourishes and makes fruitful the branches joined to it. The Pope also assures us that in times like ours, when many people and society as a whole seem to have lost any moral sense, we do not struggle alone: “He, ‘the shepherd and guardian’ of souls not only watches over individuals but exercises His providence over the universal Church, . . . by singling out from the body of the Church -- especially when times are grave -- men and women of conspicuous holiness, who may point the way for the rest of Christendom to the perfecting of His Mystical Body.” We -- those in science now in a particular way -- are called to be holy. Even a cursory look at the history of the Church shows us that great saints rise up in the Church mainly in its darkest days. If our times are dark, we have every reason to expect a great flowering of strength and virtue in the Church. Perhaps in us?

The title suggested for this little essay, “The Spirituality of a Scientist,” is realistic and accurate. Human bodies are all built on the same general plan, and our salvation is achieved on an overall common plan. But each of us is unique biologically; so, too, each is unique spiritually. From here on I’ll reflect personally as a scientist on a spirituality based on early exposure to --*Mediator Dei*, *Mystici Corporis*, and on a pastor’s (long before Vatican II) insistence on the importance of lay participation in the liturgy, especially in the Mass. My becoming a biologist and a teacher came later and greatly enhanced what I hope is a steady growth in spirituality. Most often, whatever growth took place was imperceptible to me.

I must admit that I had the advantage of spending my entire teaching life in church-related schools, where speaking of God as Creator and of His providence for His creation was not remarkable and most certainly was not a cause for fear of dismissal. That may not be true now. I’d like to think that my wonder, reverence and awe at the marvel of living things rubbed off on some of my students, perhaps becoming a factor, however slight, in their spiritual growth. I recall a girl stopping in the lab at the end of the year (I was teaching high school biology in a small town in Iowa) and saying something to the effect: “I’ll never again look at any living thing in the same way as I did before.”

On another occasion a college class of seniors in Cell Biology were studying cytoplasmic streaming in the stamen hairs of *Tradescantia* (the plant, wandering Jew). One of the students was so intrigued by the unerring pattern of cytoplasmic flow -- right to left on one side of the cell, left to right on the other side -- that he came back after class with his camera and took a picture of “his” plant. An enlargement of the photo, his gift to me at the end of the course, hung in my office at school for years and is now in my office at home, decades after he graduated. Isn’t there something like this in the scientific experience of each of us? Something that has moved us? Captured us with its beauty?

Anyone teaching biology has a superabundant treasury of reminders of God in the beauty, precision and exquisite patterns of living things. Take a microscope and look at the hairs on a fly wing. Check the meticulous gradation in pore sizes in the test (calcareous shell) of an “empty” sea urchin. Examine the water vascular system of a starfish. Really look at a dandelion gone to seed. Marvel at the shading of hues in a violet or in the flower of a wandering Jew. Wonder at the way blood cells turn on end and distort their shape to squeeze through a tiny capillary in the webbing of a frog’s foot. Instead of immediately swatting the next mosquito that lands on your hand or arm, watch her seemingly fragile body expand like a balloon as it fills with your blood --and then just blow her off so she can deliver her nutritious treasure. Help a toddler open a maple “wing” (samara), pick it apart to show him or her the tiny embryo inside, and share the wonder at the magic of a whole new tree in so small a space.

Scripture is filled with reminders of the goodness of God manifested in nature. The psalms are especially rich in such allusions. One might read, especially, the Hymn of the Three Young Men (in Daniel 3:51-89). Among the psalms, for a start we scientists might try Psalms 29, 33, 72, 78, 105, 111, 135, 136, 139.

For the scientist especially, the Old Testament, particularly Genesis and Exodus, provide rich material for meditation. Were the plagues visited on the Egyptians miracles wrought by God or are they explainable as natural phenomena? What about the parting of the Red Sea? Or the manna and quail in the desert? Did Joshua's trumpet shatter the walls of Jericho as the vibrations of a piercing soprano voice smash glasses on TV commercials? Is it really Noah's Ark that archaeologists have found on Mount Ararat?

The New Testament, too, is filled with allusions to nature and to natural phenomena: the fig tree, the mustard seed, the birds of the air, the lilies of the field, the vine and branches referred to earlier, the weeds and the wheat, the seed sown on various soils, the Gerasenes' swine, the crowing cock. . .

One of the loveliest vignettes of the New Testament took place between Jesus' Resurrection and His Ascension when Peter decided to go fishing with six other Apostles. After a night's efforts in which they caught nothing they headed for shore where Jesus -- though they did not recognize Him -- stood. "Catch anything?" "No." "Cast your nets to the right of the boat." When their nets filled with so many fishes they couldn't haul them in, the light dawned on John who told Peter, "It's the Lord." While the impetuous Peter ran to the shore, the others slogged in, dragging their fish-filled nets. Jesus, with a fish already on the fire and some bread nearby, asked for some fish from their catch, cooked them, and served a shore-line fish 'n' bread breakfast.

How could any field-tripping biologist not follow a Master like that?

## Questions

Can we say that, by virtue of his or her profession, the scientist/technologist who is a Christian has a special kind of relationship to God. If so, how? Is it in the purview of a scientist to point out to others a purposeful design in nature? Can we posit a "creator" or "designer" of nature? If so, how has that been effected?

Why do some evolutionists deny creation and design so vigorously? Is it true that anyone teaching biology has a superabundant treasury of reminders of God in the beauty, precision and exquisite patterns of living things? Is or isn't the last word in the biological world "beauty"?

Maybe we ought to turn the "evolution issue" over to a discussion of beauty. Discuss what this proposal might mean and what good might come from it.

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