

ST. ALBERT  
THE GREAT



ST. ALBERT  
THE GREAT  
CHAMPION OF FAITH AND REASON

Kevin Vost, Psy.D.

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To Sister Mary Lawrence Green, O.P.  
and the Dominican Sisters of Springfield, Illinois



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Great men are not great for themselves alone; they bear us up; our confidence is implicitly grounded in their existence. With their help, we can make for ourselves a life as great as theirs, except for the disproportion between our powers and theirs.

—A. D. Sertillanges, O.P.<sup>1</sup>

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Author's Preface

# A Great Man for All Seasons

Magnanimity by its very name denotes stretching forth the mind to great things . . . And since a virtuous habit is denominated chiefly from its act, a man is said to be magnanimous chiefly because he is minded to do some great act.

—St. Thomas Aquinas<sup>2</sup>

They [scientists] need courage and initiative in their efforts to fathom the secrets which nature holds, and to adapt their discoveries to the needs of man: that requires magnanimity, which was Albert's most characteristic quality.

—Sr. M. Albert, O.P.<sup>3</sup>

**T**OO few today are truly great. We've become a culture of narrow chests, sloped shoulders, and shrunken heads. And my, what tiny noggins! It seems we just aren't putting enough substantial stuff inside our brains to keep them from shriveling back inside their vacant vaults. No wonder so few of us wear hats today, what with so little cranium to hold them up. We are awash in information, plugged in constantly to electronic media, yet our attention is scattered. Nothing sinks in. What flies in the one ear, flies right out the other, leaving a passage for the next fleeting little sound bite of useless trivia.

There is much truth to a commonplace saying of our day: "Use it or lose it!" We're just not using our minds enough to stop the shrinkage, and we've allowed ourselves to become small, small as individuals

and small as a culture. We've become a "culture of death" because we think too small to embrace the bigness and greatness that is life.

So what do we need to become great, to achieve that quality of magnanimity or "greatness of soul" of which St. Thomas Aquinas speaks?

We need a hero.

We need the witness of people who have become, by the grace of God, great. People who have taken their God-given talents and gifts and run with them. People whose lives, as St. Thomas put it, "savor of excellence."<sup>4</sup>

St. Thomas certainly knew firsthand about greatness of soul. His mind was always stretched toward the greatest of all things—God and also to His creation as it reflected Him. He also studied intently and wrote copiously on this concept of magnanimity, basing his work largely on the efforts of Aristotle, who had stretched his mind like no other before and very few since. And he also had the acquaintance of one of those very few men who were actually called "great" while they still lived on Earth. That man was St. Thomas's teacher, and later, the champion of his thought. He is the subject of this book: St. Albert the Great.

St. Albert stretched his entire being toward many great things. He was "broad of shoulders," "noble in body and mind," with "a wonderful memory for fact."<sup>5</sup> His life savored of excellence in so many different areas. With the eye of the scientist, he plumbed the secrets of nature; with the heart of a saint, he never forgot that nature was Creation. He was grateful to God and to all the living and the dead who had taught him and helped him. He was beneficent and generous like few others, sharing his plenitude of gifts not only with the men and women of his time, but with those of our time and all times.

Please join me, then, as I lay out a plan for stretching our minds toward the life and lessons of this great-souled man, the professor of the University of Paris, the German provincial of the Order of Preachers, the bishop of Ratisbon, the patron of the sciences, the Universal Doctor of the Catholic Church: St. Albert the Great.

## Introduction

# The Least Shall Be the Greatest

They had discussed with one another who was the greatest. And he sat down and called the twelve: and he said to them, “If any among you would be first, he must be least of all and servant of all.”

—Mark 9:34–35

St. Albert can fittingly be called the miracle and wonder of our time.<sup>1</sup>

—Ulric of Strasbourg

**T**HOUGH he wasn’t canonized until 1931, St. Albert of Cologne has been known as “the great” since his own day—the 13th century—due to his incredible breadth of knowledge. It was said that Albert quite simply knew everything there was to know! Throughout these pages, then, we’ll look at how he put his powerful mind to plumbing the mysteries of creation through virtually every science and intellectual discipline known to man—literally from “a” to “z,” with contributions to fields as diverse as anatomy, anthropology, astronomy, biology, botany, chemistry, dentistry, geography, geology, medicine, physiology, physics, psychology, and zoology.

Albert was a master philosopher as well, intimately conversant with the systems of the most profound thinkers of the ancient Greek and Roman worlds. In his mastery of scripture and theology, also, he knew few peers in his time. And Albert did not keep his knowledge to himself. He was a great professor, teaching philosophy and the sciences to grateful students throughout Europe. For these reasons,

and good reasons they are, Albert was called “great” in his own time.

Perhaps you are wondering, though, “If Albert was so great, then why don’t *we* know more about him?” Good question! And the answer, I think, is found in those words of Jesus that began this introduction. It is one thing to be great in the eyes of the world, still another to be great in the eyes of Christ. Albert had *both* kinds of greatness, and it was because of that second, Christlike kind of greatness that he did not seek to draw attention to himself. He did such a good job making himself the least and servant of us all that the world has, in some measure, forgotten his true stature.

We’ll see in the pages ahead how St. Albert has been compared by saints and sages, by professors and by popes, to great men such as King Solomon, St. Luke, St. Paul, and St. Ambrose. But to demonstrate here his understated greatness, I draw your attention to those who have compared him to that voice crying in the wilderness, St. John the Baptist. St. John was a blessed man who devoted himself entirely to God’s works and displayed unmatched humility before Him who was to follow. Like the blessed Baptist who prepared the way for the Lord, so too St. Albert prepared the way for another: the man would become that great defender and lover of Jesus and most profound teacher of the doctrines of Christ’s Church, the Angelic Doctor, St. Thomas Aquinas.

Indeed, today perhaps the one thing that most everybody knows about St. Albert is that he was St. Thomas’s teacher, the man who helped groom the most exquisite mind ever to serve the Church. As the famous story (which I’ll retell later) goes, St. Albert promised that the “bellowing of this ox [that is, the words of St. Thomas], would be heard around the world!” Today it appears that St. Albert’s prophecy has rung so true that the bellowing of that blessed ox has inadvertently drowned out the life and lessons of his own great teacher!

Thus, today there is a relative dearth of recent material on Thomas’s great teacher. In preparing to write this book, I searched the Web sites of the Catholic publishers and booksellers, the major secular bookstores, and even the Library of Congress. I certainly may have

missed some, but the most recent biography I could find on St. Albert was written in 1955—and that’s a fictionalized tale geared toward adolescents.<sup>2</sup>

Other biographies I found, tracked down through obscure and out-of-the-way booksellers, were written in 1948, 1938, 1932, and 1876.<sup>3</sup> Those 20th-century books came out shortly after Albert was canonized and declared a Doctor of the Church in 1931 and declared the patron saint of the sciences in 1941, and they also highlight his lessons for those living in that era in modern history. I was pleased to see that some new books addressing various aspects of Albert’s thought have become available to English-language readers in recent years, and I’ll tell you about them in the relevant chapters ahead. But all in all I could see that it was past time for a new book about St. Albert the Great, one that explained his life and virtues for the general reader of today. Here’s the basic game plan for it.

#### THE LIFE, THE LEGEND, THE LESSONS

This book is biographical in part. I’ll share the many significant events of St. Albert’s life, and in an appendix I’ll even throw in (at no extra charge) a chronology of his life and his influence since his death. Still, in writing a biography of a man so great, and a man who lived so long ago, it becomes difficult at times to separate fact from fiction. As with other saints of centuries past, a great number of pious stories have accrued to Albert’s name over the centuries, and as with any saint, it is not always easy to ascertain their veracity. Specifically to St. Albert, many questionable *scientific*, *technological*, *architectural*, and indeed, even *magical* stories have accrued to his great name as well!

Historians have weighed in on the reasons in favor of believing or disbelieving some of these amazing stories, and I’ll try to let you know when we’ve moved from the pretty well-established facts of the “life” to the more questionable stuff of the “legend,” in case it is not obvious. And no, I’m not going to share any of these wonderful tales right now. You’ll simply have to read along (or skip ahead), but

I do want to make a point about these legends.

Though I am unable to separate the wheat of fact from the chaff of fancy in some of these tales (I'd need the help of St. Albert himself for that), here is a question I'd like us to chew on. If people were someday to craft legends about *you* and *your life*, what might they be? What would you *like them* to be? In St. Albert's case, whether some of these events happened as told or not, we can't say for certain; that these stories *have* been told, of that we can be sure. Further, both the life *and* the legend carry for us important lessons, and those lessons are the main reason for this book. Since he was a teacher and preacher to the core, I feel sure that the great saint himself would want it that way.

#### THE ROLES OF VIRTUES

We'll see in chapters ahead (especially Chapter 12) that our hard-nosed scientist-saint had a soft spot in his heart for our Mother Mary. In his writings on the Blessed Virgin, he emphasized that in being "full of grace,"<sup>4</sup> Mary possessed *all* the virtues and graces available to a human being and personified their perfection. Albert himself was no stranger to the virtues. He wrote complete philosophical and theological works on what virtues are and how to build them. As we examine his life, we will contemplate the multiple virtues that made up the character of this great saint, so that we too might try to grow in like virtues of our own.

Ancient philosophers like the ancient Greek Epictetus and Roman Seneca (St. Albert knew them well) urged us toward lives of virtue, noting that when we desire nothing more than virtue, we will attain great peace, becoming relatively undisturbed by the misfortunes and difficulties that we all encounter. Attaining this inner tranquility is one of the hallmarks of the Stoic sage or wise man. But these were enterprising Greeks and Romans, mind you, not navel-gazers; for the Stoics, once the virtuous soul attains control over his own passions, the question follows, "Now what shall I *do*?"

Epictetus in particular was wont to answer that we should play

the roles the great “Playwright” has assigned to us—be it the role of a citizen, a brother, a sister, a son, a daughter, a father, a mother, a student, a teacher, a soldier, an official—whatever the case may be. In other words, our virtues will be displayed and shared when we perform our work and our duties to others as human beings. Indeed, virtues themselves grow and thrive through their exercise in the active roles we are called to play in the service of God and our fellow man.

As we will soon see, Albert was a man of nearly as many roles as virtues. The Great One was no mere bookworm (or “noodle” as my father-in-law was prone to call the intellectually inclined). The great scholar and teacher was also provincial of his religious order for the entire province of Germany, a bishop of a diocese, a Vatican advisor, and even a preacher of a Crusade—and his virtues shined forth in every role.

#### GREAT IDEAS

We’ll examine virtues themselves, as St. Albert saw them, in some detail in Chapter 4. For now, let me simply note that virtues themselves are *embodiments of excellence*. They are perfections of human powers. They are also ideas, in the sense that we can’t directly see or touch or hear or taste or smell things like courage or humility or justice or kindness, but we can indeed come to know them, experience them, display them, and share them through the use of our intellects and our wills. That’s why each and every chapter of this book will end with a “Great Ideas” section, each focusing on a particular virtue embodied by Albert himself in the subject area of that chapter. I’ll provide definitions, highlight Albert’s examples, and offer practical suggestions for making these great ideas our own.

#### THINKER, DOER, LOVER

The chapters of this book are organized into three parts, based on three parts of the famous motto of the Dominicans (St. Albert’s order):

“To share with others the fruits of contemplation.” The Dominicans sought to study deeply the things of God and creation, and then to preach them, so as to save men’s souls.

Part I, “Thinker,” will highlight St. Albert’s role as an intellectual giant in science and philosophy, that which brought him fame and the title “the great” in his own time. Thinking also ties in most directly to the Dominican call to study and contemplation. Further, thinking calls for virtues of its own—like understanding, wisdom, and even science—*intellectual* virtues St. Albert knew and lived so well.

In Part II, “Doer,” I’ll highlight St. Albert as the man of *action*. St. Albert wasn’t the type to “just think about it,” no, he was also the type to “git ’er done!” Here we’ll see him move from the ivory tower out into the street, as the professor becomes spiritual shepherd to a diocese, as the author of learned treatises becomes the author of peace treaties between warring parties, as the preacher to the novices becomes the preacher of a great Crusade to the Holy Land in defense of Christian Europe. Doing has its virtues too, *natural* or *moral* virtues, and here we’ll see just how St. Albert’s contemplation bore a bumper crop of natural fruits.

When St. Paul proclaimed the highest class of virtues, the God-infused *theological* virtues of faith, hope, and love, he told us the highest was love.<sup>5</sup> Jesus had told us after all that the greatest commandment of all is to love the Lord our God with all that we are, and the second is to love our neighbor as ourselves.<sup>6</sup> St. Albert knew these commands quite well and obeyed them like few others. And as a spiritual son of St. Dominic, he knew as well that those fruits of contemplation were meant *for sharing with others*. In Part III, “Lover,” then, we will examine the true heights of Albert’s greatness, the ways that he showed his love of God, God’s Mother, his fellow religious, and his students.

And just about last, near the end of the day (or at least near the end of this book), we will see how before his death, and after a lifetime of service, he who was so great became again like the least, as the light of his memory and intellect dimmed. But we’ll also see

how the fire of his passion for God burned bright until his last day as a traveler on this earth.

Finally, we'll see how, 650 years after his death, the Catholic Church made official what those who knew him knew all along, that Albert was not only great but a saint, and a Doctor—the Universal Doctor—of the Church. His truly was one of the greatest human minds God has given to the universe. So it's darn well time we get to know him better by sitting at his great feet.



PART I

THINKER



## Chapter 1

# Saintly Scientist

The first [cause], God—the most true, most sweet, most powerful from eternity forever and ever and reigning through boundless ages—can be known in another way, that is, through his effects.

—St. Albert the Great<sup>1</sup>

I recommend to you particularly the virtues of courage, which defends science in a world marked by doubt, alienated from truth, and in need of meaning; and humility, through which we recognize the finiteness of reason before Truth which transcends it. These are the virtues of Albert the Great.

—Pope John Paul II<sup>2</sup>

**P**ERHAPS you’ve heard the tale from history books about how Europe was cast in darkness after the fall of Rome. About how it then endured centuries of “dark ages” and only slightly brighter “middle ages” until the bold humanists of the Renaissance cast off the mental shackles of the Catholic Church; rediscovered the wisdom of the ancient pagans; and brought a rebirth of vitality, science, and intelligence to all the Western world.

Well, I’d like to tell two little stories of my own, the first from one of those very Renaissance men, Francis Bacon (1561–1626).

In the year 1432, a group of scholars had been tirelessly and fiercely debating a question of grave importance for a period of nearly two weeks. They had consulted a vast array of ancient learned texts (no

doubt the esteemed works of Aristotle and the Church Fathers among them) but could find no answer to their dilemma. The mystery itself was that of “the number of teeth in a horse’s mouth,” but alas, none of the ancient wise men had addressed it and thus arose their stalemate.

Well, on the 14th day, a young friar in their company (I suspect a Dominican) asked if he might make a suggestion, which was to go out into the barn and look into the open mouth of a horse and count the teeth. The scholars were “sore vexed” at such a ludicrous suggestion “in a manner so coarse and unheard-of.” Thereupon, they fell upon the young man, “smote him hip and thigh,” and kicked him out. When they had calmed down and regained their composure many days later, one of them declared the problem an “ever-lasting mystery,” since none of the great theologians had ever addressed it, and “so ordered the same writ down.”<sup>3</sup>

That’s some funny stuff—and told so well in Bacon’s own words. But before I make any comment, let’s consider the other story.

On a cold Christmas Eve, 13 centuries after the birth of Our Lord, two young German brothers stole from their beds and trod stealthily toward the family barn, hoping to avoid notice of the watchman pacing upon the stone walls. In a land of many tales, the boys had been told that on the eve of Christ’s birth, the animals of the stable spoke as humans did. The older brother speculated that the ox might say, “O-o-o-omnes”—that means ‘all’—‘Come all ye faithful.’” The younger brother, only seven, had feared that the animals might speak in Latin, in which case his big brother would have to translate for him. In any event, as they sunk down in the hay and began to observe the ox, the younger brother sneezed; a groomsmen heard it, found the boys, and brought them back inside. The younger brother apologized for the sneeze but assured his brilliant older brother that he was so smart that undoubtedly that ox would have spoken just as he thought, since “you’re always right about those things!” But the big brother shook his head and said, “I want to know for *sure* . . . I want to *hear* them—and then we’ll know. You can’t always go by what people say.”<sup>4</sup>

I came across Bacon’s story of the medieval scholars in a history of psychology class I took in 1993, and it has never failed to amuse me;

but as my own knowledge of history and psychology grew, it began to annoy me a bit as well. Bacon presents quite the caricature, portraying the learned doctors of the Middle Ages as unfamiliar with—and flat out opposed to—knowledge of the natural world. That was certainly not always the case, most especially among the friars who wore the habit of St. Dominic!

The second story, the one about the little boys, I came across in *Master Albert*, Sister Dorcy's children's book on St. Albert the Great. The big brother who insisted that he wanted to know *for sure* would one day be known as the consummate medieval scholar: Albertus Magnus, Albert the Great! The events of that tale, by the way, would have taken place more than 200 years before Bacon's little fantasy.

Even if *both* tales are fictional, one thing we'll learn from the life and lessons of St. Albert is that long before the Renaissance, learned men of God had turned the light of their intellects to the natural world as well, and, like God Himself, they declared it good, very good!

#### ON ALBERT'S NATURE

Albert was a consummate naturalist. He was enamored of created things, from the literal birds and bees to flowers, spiders, lizards, dogs, mountains, stones, and stars, from a very early age. But as immersed as he was in the cultural and spiritual milieu of the medieval age, he knew the things of nature were not complete ends in themselves. He saw nature as the handwork of God that also mirrored, though imperfectly, the nature of its Creator.

One of the myriad natural subjects to interest St. Albert was that of individual differences. What makes each one of us unique? He sought answers in the ancient science of *physiognomy*, which sought to examine traits of human character, especially as revealed in facial features. Let's imagine, if you will, the faces of three great saints, and see what they might tell us.

St. Albert was a member and a leader of the Dominican order, whose preacher-friars traveled great distances by foot throughout

all of Europe. If we could look upon the face of St. Dominic himself as he walked along, we might well find him looking down or straight ahead, immersed in prayer or conversing about God with his religious brothers. St. Thomas Aquinas, another saintly Dominican, was famous for his professorial absent-mindedness, unaware of his physical surroundings as he pondered the deepest philosophical and theological mysteries. We'd likely see a far-away stare in his eyes. But St. Albert we would probably see walking with his eyes wide open, looking all around him at the wonders of creation. In fact, it's said that young Albert was so distracted from his spiritual studies by his love of nature that the Virgin Mary, the "Seat of Wisdom" herself, had to come to him to set him straight.

#### ALBERT ON NATURE

St. Albert wrote extensively on the natural world, with books specifically addressing plants, animals, minerals, and more. I've seen only snippets of most of them, but I've been able to acquire a new English translation of his *Questions Concerning Aristotle's On Animals*.<sup>5</sup> Here, in 19 "books," or what we would call chapters, Albert addresses a total of 442 questions on an amazing (and sometimes amusing) diversity of subject matters. Here is a small sample of questions, to give you but a taste of the breadth of his concerns. Some of these may seem rather odd and archaic today and some, perhaps, surprisingly timely:

- Book One, Question 19: Why some animals have feet and some do not.
- Book One, Question 26: Why eyebrows that are straight indicate femininity and pliability whereas ones arched toward the nose indicate discretion and intellect.
- Book One, Question 43: Why a human has such a large brain size in proportion to his body size.
- Book Two, Question 3: Whether the right foot is more unfettered and better suited for motion than the left.

- Book Two, Question 27: Whether the human ought to lack a tail naturally.
- Book Three, Question 27: Whether the marrow is necessary for the bone's nourishment.
- Book Four, Question 6: Whether fish have hearing.
- Book Four, Question 21: Why some people who eat more are thin, whereas others who eat only a little are fat.
- Book Seven, Question 32: Whether pestilential disease arises from an infection of the air.

Here Albert seeks to know the nature and workings of all varieties of animals and of man himself, both inside and out. He seeks to understand the anatomy and habits of fish, birds, camels, and horses, as well as the mysteries of human conception, growth, development, and aging. He ponders the quirky anomalies of the human mind, covering issues as far-ranging as why “madmen” have such great physical strength to why wise men seem prone to having frivolous children. Albert's fascination with and love for all of creation burst forth from every page.

Here is a morsel of special significance to me, because on many a day I have sat in a little swivel rocker, swilling coffee, reading books about St. Albert while one of these little guys peered quizzically at me, just feet away, from his perch on a little tree just outside my picture window. “The pirolus is an extremely lively little animal; it nests in the tops of trees, has a long bushy tail, and swings itself from tree to tree, in doing so it uses its tail as a rudder. When on the move it drags its tail behind it, but when sitting it carries it erect up on its back. When taking food it holds it as do the other rodents in its hands, so to speak, and places it in its mouth. Its food consists of nuts and fruit and such-like things.”<sup>6</sup> He goes on to describe how its coloring varies in Germany (black when young), in Poland (reddish gray), and in Russia (gray). I'd call the ones in my own neighborhood reddish brown, though there are lots of little gray ones in a park just two miles away.

Perhaps you have identified the “pirolus.” I always associate them with that other great saint of nature, St. Francis of Assisi. For me, this may be partly due to that little statue right outside the same window. One rests at Francis’s shoulder while a deer and a rabbit flank his sides. Now though, whenever I see a busy little squirrel, I think of both a great Franciscan *and* a great Dominican saint!

Albert was a wonderful observer and describer of nature. Observation and description are the key elements to a scientific approach to the world, after all. When I taught college psychology, I told my students that the three key goals of psychological research were (1) *to describe* the domain of observational research, (2) *to explain* the domain of experimental research, and (3) *to optimize* the domain of practical application. I’m going to attempt to show in the pages ahead how, though rare for the 13th century, Master Albert was a master of all three.

#### ALBERTUS MAGNUS, SCIENTIST

Some in Albert’s own time considered him a dangerous innovator, potentially drawing pious souls toward philosophy and science and thereby, they reasoned, away from God. Others in his day and in centuries since have considered him a magician, so vast was his knowledge of nature, mechanics, and medicine. Still others, however, in the centuries after his death, and up to the present day, have considered Albert too little the scientist, chastising him for his ostensible gullibility and his close dependence on Aristotle and other ancients. This last is the kind of thing we saw in the tale of Francis Bacon that began this chapter.

Which is it? If the scientist’s goal is to find the truth, based on the evidence, then to find the truth on St. Albert’s role as a scientist we need to go to the evidence available to us: St. Albert’s own writings and achievements.

Some critics have charged that St. Albert followed Aristotle—who made many errors in his writings on science and nature—too uncritically.

But Albert himself pointed out that Aristotle was human and prone to errors. For one example, Aristotle had written that the lunar rainbow occurred only once every 50 years, but Albert reported that Aristotle was in error because he had seen two in the same year himself! And in another instance, where Aristotle had noted that eels feed on nothing but slime, Albert corrects him by noting that he had seen for himself eels feasting on the likes of frogs, worms, and fish. Albert also corrected Aristotle on the number of human ribs and other things.

In reading St. Albert's purely scientific writings, we likewise find errors and gaps in knowledge common to the greatest minds of his day. Sometimes his sources were responsible for the errors (Albert would often qualify in his writings if certain events had only been reported to him rather than be observed with his own eyes). But often he would set about to verify or correct those very sources with his own experiments. It had been reported, for example, that ostriches ate iron pellets, so he tested this and found an ostrich had no taste for them. He had heard that cicadas continued to produce their noise after they'd lost their heads, which he tested and found to be true. In these and other simple experiments and comments, he showed that he did indeed display a true scientific mindset—one guided by evidence, by observation, and where possible, by experiment.

Indeed, should a modern scientist consider St. Albert's understanding of the nature and spirit of the scientific mindset lacking, I would direct him, for a start, to Book 11 of the aforementioned *Questions Concerning Aristotle's On Animals*. The very first question is "Whether there is a double mode of proceeding in science."<sup>7</sup> By "double mode" he refers to two of the same major goals of science I explained to my college students more than 700 years after St. Albert: "one descriptive, and the other assigning causes," that is, to describe and to explain the provinces of observational and experimental research.

But St. Albert does far more than name them. In his analysis of science as proposed by Aristotle, Albert examines deeply the very nature of observation and of experimentation, noting how observation

serves as a necessary starting point to show us the “whats” of nature, while experiment can lead us to the “whys” as well. He analyzes the four great classes of causes (material, formal, efficient, and final), the nature of scientific classification, including the use of genus and species, and so much more, showing true depth of understanding. He also displays something too often lacking in modern scientists: science’s own dependence on philosophy. Philosophy defines the laws of logical reasoning that we apply to scientific observations and experimental findings, both to find truths about the material world and to help us understand the limitations of those findings.<sup>8</sup>

Though many of his findings have been superseded by modern science, with its instruments and technologies far exceeding those of seven centuries ago, Albert helped end a scientific standstill that had lasted about three centuries before his time, and his grasp of the very heart of science remains illuminating even today.

Below is a small sample of a few of Albert’s specific scientific contributions with regard to observation, classification, and predictive theory:

- He isolated arsenic.
- He provided the first description of the spinach plant in Western writing.
- He did early work in the theory of protective coloration of animals—including the prediction that animals in the extreme north would have white coloring.
- He determined that the Milky Way is a huge assemblage of stars.
- He determined that the figures visible on the moon were not reflections of earth’s mountains and seas but features of the moon’s own surface.
- He predicted land masses at the earth’s poles.
- He predicted a large land mass to the west of Europe.
- He determined, with the use of mathematical formulae, that the earth was spherical.<sup>9</sup>

## COURAGE AND HUMILITY

There is no doubt that Albert was a scientist, and in his day a great one. But the true greatness of the saintly scientist today shines forth in his saintliness. For him, science served as a means to understand God through His creation, to deepen our awareness of His majesty in the glorious wonders of the universe that is His handiwork. Saints, of course, are models of virtue, and two virtues ascribed to St. Albert by another man whom people have begun to call “the Great,” Pope John Paul II, are the virtues of *courage* and *humility*.

The quotation that heads this chapter was found in a speech that John Paul II gave in Cologne, Germany, on November 15, 1980, on the 700th anniversary of the great saint’s death. November 15 is the feast of St. Albert, Cologne is one place where Albert taught, and the speech was given to university professors and students. I find this little speech interesting in part because it serves as a preview in miniature to John Paul’s great encyclical of 18 years later, *Fides et Ratio*.

John Paul II exhorted his audience to the kind of *courage* that Albert had displayed. In his day Albert was blasted by some who believed that science threatened the Christian worldview. But Albert knew well though, as John Paul would state eloquently many centuries later, that faith *and* reason are the two wings on which we fly to the truth. Albert also had the courage to speak out boldly against those who spoke out against science, even within his own Dominican order: “There are those ignorant people who wish to combat by every means possible the use of philosophy, and especially among the preachers, where no one opposes them; senseless animals who blaspheme that of which they know nothing.”<sup>10</sup>

St. Albert’s courage to seek the Truth was complemented and perfected by his humility in seeking the Truth, as well. In the words of John Paul II, “Man’s reason is a grand instrument for knowledge and structuring of the world. It needs, however, in order to realize the whole wealth of human possibilities, to open to the Word of eternal Truth, which became man in Christ.”<sup>11</sup>

For St. Albert, the instrumental power that derives from scientific knowledge of the world was not a means to move away from God, or to make man a god, but a way to better conform man to God's image. John Paul II notes that science can lead to great advances for the benefit of mankind and should be pursued wholeheartedly. Still, science cannot give us *meaning*, and science alone cannot guarantee respect of *human dignity*. For these things we need more than mastery of the material world. We also need "science" in its older, broader meaning: the rational, systematic study of any subject matter, including theology, that "divine science" that examines God, the ultimate source of all subject matters. Christian theology, as Albert, Thomas, and John Paul II have told us, stands on twin pillars of reason and faith, of science and revelation. It is in his deep understanding and love of God that St. Albert's true greatness, born of humility, shines through.

In the chapters ahead, we'll go back to the beginning, examining Albert's own life from the days of the youthful falconer, to the days of the great man of knowledge and of action, to the last days of the elderly child of God, waiting patiently to see his Father face-to-face. We'll see how this scientist-saint, this teacher-preacher, this lover of creation and Creator can inspire us to grow in our own love and knowledge as well.

#### GREAT IDEA #1: THE VIRTUE OF SCIENCE

In his papal address of March 24, 2010, Pope Benedict XVI drew the world's attention to St. Albert the Great as a model for the modern scientist to follow in transforming the study of nature into a fulfilling and "fascinating journey of holiness." Pope Benedict spoke of the "friendship" of reason and faith, of St. Albert's realization that reason and scripture are completely compatible, and of God's will that we use both to seek and attain Truth and happiness.

So amazing were some of Albert's actual scientific accomplishments in the 13th century that they gave rise to some pretty fascinating legends, most portraying him as a kind of magician. One tale tells of

how Albert “made summer in winter,” when King William of Holland called to visit Albert in the dead of winter, and Albert entertained him and his party in a plush summer garden. (Albert had most likely crafted an early greenhouse.) In another story, St. Thomas stumbles on the statue of a beautiful young woman behind a curtain in Albert’s laboratory. After the statue greets him in a human voice, “*Salve, salve, salve!*” the startled, gentle giant destroys it, proclaiming, “Begone, Satan!” St. Albert then comes in and chides his young apprentice for destroying the work of 30 years. This would suggest, though we can’t say for sure, that Albert had produced a human doll or robot or sorts, capable of producing speechlike sounds—predating Chatty Cathy by 700 years!

And now for more serious matters. Building on the ideas found in Aristotle’s *Nicomachean Ethics* and other writings, St. Albert wrote about the three *intellectual virtues* of *understanding*, *science*, and *wisdom*. *Understanding* is the grasp of principles, the comprehension of universal concepts and essences of things. It bespeaks the rational or intellectual soul, possessed only by humans among all creatures on Earth. *Science* derives from the Latin *scio*, meaning “to know.” The virtue of science refers to intellectual excellence in grasping the nature of causes and effects. *Wisdom* is the ultimate intellectual virtue, standing on the twin pillars of understanding and science and casting judgment on both the conclusions of science and the principles on which they are based.<sup>12</sup> Wisdom is the stuff of philosophy and theology, subjects in which Albert too was very “great.”

The scientists of today who can find in the universe no room for God have a far too narrow view of the essence of science, assuming that what we can know includes only those material things we can quantify and measure, ignoring the reality of the spirit and of human experience and meaning. They live in a cramped, soulless world and would do well to seek out the Truth to be found in the life and the lessons of a great-souled scientist.