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Richards, Paul G. "In Memoriam—Keiiti Aki (1930–2005)." *Seismological Research Letters* 76 (2005): 551–553.

William H. K. Lee

AL-SHĪRĀZĪ, QUṬB AL-DĪN

SEE Quṭb al-Dīn Maḥmūd ibn Masʿūd ibn al-Muṣliḥ al-Shīrāzī.

ALBERT OF SAXONY (*b.* Helmstedt, Lower Saxony, c. 1320; *d.* Halberstadt, Saxony, 8 July 1390), *physics, logic, mathematics*. For the original article on Albert of Saxony see *DSB*, vol. 1.

Recent research has revealed more information about Albert's life and writings. For example, although his contributions to natural philosophy reflected his reading of John Buridan and Nicole Oresme, they also contained many original elements.

Biographical Information. Albert of Saxony's name appears for the first time in the records in 1351, when he obtained the degree of master of arts at the University of Paris under master Albert of Bohemia. This date implies that he must have been in Paris at the end of 1350. He was probably born in 1320 (not in 1316, as has been traditionally assumed). It is very unlikely that Albert studied at the University of Prague before moving to Paris. The university in Prague was only founded in 1349, and the curricular requirements at Prague and at Paris exclude such a transition. Although there are no records, it is more likely that Albert would have received his early training at schools in his diocese, at Halberstadt or Magdeburg, and then moved to the *studium generale* of Erfurt. Only one work, if it is authentic, dates from the pre-Paris period, the *Philosophia pauperum*, which has references to Erfurt.

Once in Paris, Albert became involved in administrative duties for the English-German nation to which he belonged, and for the entire arts faculty. He was proctor, examiner, receptor, and in 1353 rector. In 1352 and 1355, he was one of the members of the committee who prepared the list of applications for papal benefices for university masters (*rotulus*).

In addition to these administrative duties, Albert was chiefly concerned with teaching and writing. The univer-



King Albert of Saxony. King Albert of Saxony in full military regalia. Circa 1892. HULTON ARCHIVE/GETTY IMAGES.

sity records show the names of approximately forty students who obtained their master's degree under Albert. His more than twenty writings, which cover logic and natural philosophy, but also ethics, are usually in the literary format of commentaries on Aristotle, and all originated at Paris. In addition, he started his study in theology as early as 1353 but he never finished, and there are no writings in this discipline.

Probably in 1361 Albert left Paris. The period 1362–1364 in Albert's career is blank, but the two letters that bind this period indicate that he was busy at Avignon for Pope Urban V and in Vienna at the court of Duke Rudolph IV. He was involved in the founding of the University of Vienna in 1365, and became its first rector. Because of the death of Duke Rudolph IV, and the ensuing rivalry between his two brothers, the university did not flourish and had only a faculty of arts. The university was reestablished in 1383–1384. Albert of Saxony left Vienna within a year, to become bishop of Halberstadt in 1366. He remained bishop until his death on 8 July 1390.

Writings on Natural Philosophy. Although several works by Albert of Saxony have been edited since the original *DSB* article, it is not possible yet to place his thought

within its fourteenth-century context. It seems clear, however, that the assessment in the original *DSB* article that Albert of Saxony depended heavily on the works by Buridan, and lacked originality, needs to be revised. In the past, Albert of Saxony, together with Oresme and a few other Parisian thinkers, has been perceived as a proponent of the Buridan school, with all the connotations that this label may have, such as that of student-teacher relationships, and a unified homogeneous school of thought. Closer examination of the doctrines and dating of texts has replaced this picture of the Buridan school with that of a small intellectual network of nearly contemporary masters of arts, who were familiar with each others' work and at times responded to one another.

Albert of Saxony's most important work in logic is his *Perutilis logica* (Very useful logic), written around 1356. It is a handbook in logic, organized into six treatises. It covers all the basics of medieval logic, such as propositions, properties of terms, consequences, fallacies, insolubles, and obligations. Although the influence of William of Ockham is discernible, it is an independent treatise with its own original twists. Albert distances himself in many respects from Buridan's logic. Another logical work from about the same period is the *Quaestiones circa logicam* (Questions on Logic). This is a set of disputed questions about the signification of terms, reference, and truth. The *Sophismata*, a set of propositions whose interpretation raises semantic problems because of the presence of certain logical terms, shows the influence of William of Heytesbury. Albert's solutions to the semantic difficulties rely on Heytesbury's theory of *sensus divisus* and *compositus*, that is, the position and scope of modal operators in propositions.

One of Albert's most important works in natural philosophy is his *Quaestiones super libros Physicorum*, a question-commentary on Aristotle's *Physics*. It raises many of the problems that are also raised in Buridan's question-commentary. The relation between the two works, however, is more complex than was initially thought. It is clear in the early 2000s that Albert of Saxony had access to a previous version of Buridan's question-commentary on the *Physics*, the so-called *tertia lectura*. In his final version of the question-commentary on the *Physics*, Buridan responded to Albert of Saxony. In other words, Albert's *Quaestiones* on the *Physics* are chronologically located between Buridan's *tertia lectura* and his *ultima lectura*. Albert of Saxony's *Quaestiones super libros Physicorum* are usually dated shortly after 1351. This date is suggested by one of its copies, whose introductory remarks tie the text to Albert's opening lecture (*principium*) on Aristotle's *Physics*, which was held in 1351. This does not imply, however, that the entire commentary was finished by that time. The most plausible conclusion is that the work must

have been finished sometime between 1352 and 1357, before Buridan's ultimate question-commentary.

Buridan and Albert of Saxony held opposing views about the ontological status of spatial extension. In general, medieval thinkers believed that spatial extension belonged in the category of quantity, and that some substances, such as bodies, have extension as their most important feature. However, not only the substance of body, but also many of its qualities were considered to be extended. The dimensions of Socrates's whiteness, for instance, were believed to coincide with Socrates himself, that is, with substance. But is it really accurate to equate quantity with substance and quality, respectively, or should quantity be considered a separate entity? Buridan held the latter view. One of the many arguments in support of this position hinges on the phenomenon of condensation and rarefaction. Experience teaches that the extension or quantity of a given substance can vary, whereas the amount of substance and its quality remain constant: no new parts of substance are added, nor any destroyed (in contrast to the phenomena of growth and diminution). Albert of Saxony defended the position that extension or quantity coincides with substance. He attributes condensation and rarefaction to the local motion of the parts, which supposedly have some kind of elasticity.

On the question of the ontological status of motion, Albert follows the view of Ockham that motion is not something different from the moving body. However, on the basis of an argument involving God's supernatural interference, he concludes that motion is an inherent flux in a moving body. In other words, motion is a distinct property of a body, a position Buridan also defended.

In his discussion of projectile motion, Albert qualifies Buridan's view as the truest view (*quam pro nunc reputo veriorem*). It attributes the projectile's motion to a certain motive force, a *virtus motiva* or *virtus impressa*, an impressed power. Albert does not use the term *impetus*. Buridan introduced this new term only in his last version of his question-commentary on the *Physics*, which Albert did not know. Albert interprets Aristotle's views with respect to motion and velocity, in *Physics* book 7, in accordance with Bradwardine's rules. In an effort to solve the apparent contradictions between Bradwardine's approach and Aristotle's text, Albert states that Aristotle's text has probably been mistranslated.

Albert's discussion of the void shows striking similarities to that by Oresme. He must have known Oresme's *Physics*. Albert's well-organized question-commentary on Aristotle's *De caelo* provides further evidence of his thoughtful and independent approach to contemporary issues in natural philosophy. Albert includes many questions that had been raised by both Oresme and Buridan, but approximately one-third of Albert's fifty-six questions

do not appear in the *De caelo* questions of Oresme and Buridan. Also noteworthy is that, unlike almost all other scholastic natural philosophers, Albert grouped related questions together under three major themes. This broke with the traditional way of organizing questions by simply following Aristotle's text.

What emerges from these varied examples is that Albert of Saxony was not a plagiarizer, but rather that he was well versed in the works of some of his contemporaries and used them in his own philosophical endeavors.

SUPPLEMENTARY BIBLIOGRAPHY

A survey of all of Albert of Saxony's works and the known manuscript sources is provided in Jürgen Sarnowsky, Die aristotelisch-scholastische Theorie der Bewegung (see below). See further Olga Weijers, Le travail intellectuel à la faculté des arts de Paris: Textes et maîtres (ca. 1200–1250), vol. 1 (Turnhout, Belgium: Brepols, 1994); also the extremely useful bibliographical guide by Harald Berger, "Albert von Sachsen (1316?–1390): Bibliographie der Sekundärliteratur" and its supplements (see below).

WORKS BY ALBERT OF SAXONY

Muñoz García, Angel. *Perutilis logica, o, Lógica muy útil (o utilísima)*. México: Universidad Nacional Autónoma de México, 1988. Provides a transcription (and a Spanish translation) of the incunabular edition (Venice 1522) of Albert's logical handbook.

Kann, Christoph. *Die Eigenschaften der Termini: Eine Untersuchung zur "Perutilis Logica" des Alberts von Sachsen*. New York: Brill, 1994. Includes an edition of treatise two of the *Perutilis logica*.

Patar, Benoît. *Expositio et Quaestiones in Aristotelis libros Physicorum ad Albertum de Saxoniam attributae*. 3 vols. Louvain: Editions Peeters, 1999. The authenticity of this question-commentary by Albert of Saxony has never been doubted, except by this editor. He believes that the text is the first version of the commentary by John Buridan, but his thesis is not supported by textual or paleographical evidence.

Fitzgerald, Michael J. *Albert of Saxony's Twenty-Five Disputed Questions on Logic*. Leiden: Brill, 2002. Provides a critical edition of a set of logical disputations, the so-called *Quaestiones circa logicam*.

OTHER SOURCES

Berger, Harald. "Albert von Sachsen (1316?–1390): Bibliographie der Sekundärliteratur." *Bulletin de Philosophie Médiévale* 36 (1994): 148–185.

———. "Fortsetzung und Ergänzungen zur Bibliographie der Sekundärliteratur." *Bulletin de Philosophie Médiévale* 37 (1995): 175–186.

———. "Albert von Sachsen (+1390): 2. Fortsetzung und Ergänzungen zur Bibliographie der Sekundärliteratur." *Bulletin de Philosophie Médiévale* 38 (1996): 143–152.

———. "Albert von Sachsen (+1390): 3. Fortsetzung und Ergänzungen zur Bibliographie der Sekundärliteratur." *Bulletin de Philosophie Médiévale* 40 (1998): 103–116.

———. "Albert von Sachsen (+1390): 4. Fortsetzung und Ergänzungen zur Bibliographie der Sekundärliteratur." *Acta Mediaevalia* 17 (2004): 253–279.

Biard, Joël. "Les sophismes du savoir: Albert de Saxe entre Jean Buridan et Guillaume Heytesbury." *Vivarium* 27 (1989): 36–50.

———, ed. *Itinéraires d'Albert de Saxe, Paris-Vienne au XIVe siècle: Actes du colloque organisé le 19–22 juin 1990 dans le cadre des activités de l'URA 1085 du CNRS à l'occasion du 600e anniversaire de la mort d'Albert de Saxe*. Paris: Vrin, 1991.

Grant, Edward. "The Unusual Structure and Organization of Albert of Saxony's *Questions on De caelo*." In *Itinéraires d'Albert de Saxe, Paris-Vienne au XIVe siècle*, edited by Joël Biard. Paris: Vrin, 1991.

Sarnowsky, Jürgen. *Die aristotelisch-scholastische Theorie der Bewegung: Studien zum Kommentar Alberts von Sachsen zur Physik des Aristoteles*. Münster: Aschendorff, 1989. The most fundamental monograph on Albert of Saxony's physics to date.

———. "Place and Space in Albert of Saxony's Commentaries on the *Physics*." *Arabic Sciences and Philosophy* 9 (1999): 25–45.

———. "Nicole Oresme and Albert of Saxony's Commentary on the *Physics*: The Problems of Vacuum and Motion in a Void." In *Quia inter doctores est magna dissensio: Les débats de philosophie naturelle à Paris au XIVe siècle*, edited by Stefano Caroti and J. Celeyrette. Florence, Italy: Olschki, 2004.

Thijssen, J. M. M. H. "The Buridan School Reassessed: John Buridan and Albert of Saxony." *Vivarium* 42, no. 1 (2004): 18–42.

Johannes M. M. H. Thijssen

ALBERT THE GREAT

SEE **Albertus Magnus, Saint**.

ALBERTUS MAGNUS, SAINT (also known as Albert the Great, A. de Lauing, A. Teutonicus, A. Coloniensis, Doctor Universalis) (*b.* Lauingen, Bavaria, c. 1200; *d.* Cologne, Prussia, 15 November 1280), *theology, moral philosophy, natural philosophy*.

For some time now, historical research has underestimated Albertus Magnus's originality and significance in terms of intellectual history. He has not been considered an independent thinker, but rather has been viewed as a precursor of his disciple, Thomas Aquinas. More recent research challenges this antiquated stereotype, proving that he was a rigorously systematic thinker and the originator of a theologically based system of scientific explication that covers the entire scope of reality as conceived