BIRKENMAJER Ludwik Antoni—doctor of philosophy, professor of Jagiellonian University, b. May 18, 1855 in the vicinity of Lipsko (at that time the Cieszanowski district). d. November 20, 1929, an active member of PAU, commander of the Order of Polonia Restituta, commander of the Swedish royal Order of the Polar Star, member of many scientific associations, a Franciscan tertiary.

Between 1873 and 1878 he studied in Vienna and Lwów (Lvov), mainly under the direction of the eminent Polish mathematician Professor W. Żmurek, and also Professor Staniecki, Fabian, Radziszewski, and others. In 1879 with his work *O ogólnych metodach całkowania funkcji algebraicznych i przestępnych* [On general methods of integrating algebraic and transcendental functions] he obtained the degree of doctor of philosophy. Between 1878 and 1909 he was a teacher of physics and mathematics in an agricultural middle school in Czernichów near Kraków. During that time he obtained his habilitation as a docent of theoretical physics at Jagiellonian University (1881) where he gave lectures on the history of the mathematical sciences. From 1909 he was permanently associated with Jagiellonian University. In 1893 he was accepted as a corresponding member of the Academy of Applied Knowledge in Kraków, and in 1927 he became an active member.

His unquenchable scientific interest assisted by his exceptional abilities bore fruit in over a hundred publications in the mathematical sciences and the history of these sciences.

The first group of questions that interested him concerned mathematical analysis, geometry, theoretical physics, geophysics, and astronomy. The following are noteworthy: (1) contributions to the theory of kinetic equilibrium of a liquid in a uniform vortex, the graviational field, and the shape of the terrestrial spheroid; (2) observations of inequality in the movements of double stars and the first determination in the world of the position of a satellite's orbit in relation to a straight line that connects a double system with the Sun (the results were made public in 1886); (3) thermometric studies of lakes in the Tatra mountains (results made public in in 1901); (4) the gravimetric studies in Poland, and the sixth in the world, using Sterneck's pendulum (series I—1897, series II—1918). Birkenmajer documented this part of his scientific work in the following works: *O równowadze kinetycznej płynu nieściśliwego* [On the kinetic equilibrium of a incompressible liquid]; *O postaciach masy płynnej ożywionej jednostajnym ruchem obrotowym* [On the forms of a fluid mass animated by uniform rotary motion]; *O działaniu w dal niejednorodnej kuli według dowolnego prawa* [On the action at a distance of a non-uniform sphere according to an arbitrary law]; *O związku twierdzenia Wilsona z teorią reszt kwadratowych* [On the connection of Wilson's theorem with the theory of quadratic remainders].

The second group of questions he studied concerned the history of the mathematical sciences, chiefly in the fourteenth and fifteenth centuries. Here Birkenmajer's work was dominated by his intention to write an exhaustive biography of Copernicus in which the basic emphasis would be on the history of that scholar's thought. He studied manuscripts in Polish, German, Swedish, Italian, and British libraries, and on their basis wrote a fundamental monograph: *Mikołaj Kopernik. Część pierwsza. Studia nad pracami Kopernika oraz materiały biograficzne* [Nicholas Copernicus. First Part. Studies on the work of Copernicus and biographical materials]. The whole work was to be composed of six parts, but in the course of the work he encountered new facts, as well as many gaps and difficulties that required new studies. In connection with this, instead of a second part, he only published the article (with L. Collijn as co-author) *Nova Copernicana* (Bulletin International de l'Académie Polonaise des Sciences et

des Lettres 6 (1909), 20–36). He was especially passionate about the question of the influence of the science of Kraków astronomers on the thought of Copernicus and a search for the roots of his Polish character (which had significance in the Hakat period, a period of a German nationalist and anti-Polish movement), in the face of other tendentious biographies (e.g., Prowy in 1886 in reference to Poland's political and literary history).

Birkenmajer's short treatise, *Filozoficzne podłoże odkrycia Kopernika* [Philosophical foundations of Copernicus' discovery] (Archiwum Komisji do badania Historii Filozofii w Polsce [Archive of the commission for the study of the history of philosophy in Poland], Kr 1917, I 2, 261–271) is important with respect to the philosophical foundations of Copernicus' conception. The author emphasized in the introduction that the philosophical aspect rather than observations was the determining influence on the formation of Copernicus' theory. He also publish *Marco Benevento, Kopernik, Wapowski, a najstarsza karta geograficzna Polski* [Marco Benevento, Copernicus, Wapowski, and the oldest geographical map of Poland] (1901); *Niccolo Copernico e l'Università di Padova* (1922); *Mikołaj Kopernik jako uczony, twórca i obywatel* [Nicholas Copernicus as scholar, creator, and citizen] (1923); *Stromata Copernicana* (1924); *Mikołaj Wodka z Kwidzyna, zwany Abstemius* [Nicholas Wodek of Kwidzyn, called Abstemius] (1926).

Another important work (together with Jan Łos and Eugeniusz Barwiński) was *Sprawozdanie z poszukiwań w Szwecji dokonanych z ramienia Akademii Umiejętności* [Report on the searches in Sweden performed under the auspices of the Academy of Applied Knowledge] (Kr 1914), which concerned the plunder of Polish manuscripts during the Swedish wars (it turned out that the plunder was systematic and planned). The Swedish wars were connected with literature, the history of the Church, and the ascetic-theological problematic. The work also concerned mathematical, legal-economic, catalogues of collections of Polish historical manuscripts and printed works, printed works in Hebrew, and materials in Russian.

Besides Copernican studies, Birkenmajer is known as a historian of the mathematical sciences from a monograph about Marcin Bylica of Olkusz (1892–1893) and works on Stanisław Pudłowski (d. 1645) and T. L. Burattingi (d. 1681). Due to Birkenmajer's efforts the following works were also published: Marcin Król's *Geometria praktyczna* [Practical geometry] (1895); Wojciech of Brudzew's *Commentariolum super theoricas planetarum* (1900); Bartholemew of Valencia's *De diebus naturalibus* (1912); and Marcin Biem's *Nova Calendarii Romani reformation* (1918).

W. Horbacki, *Ludwik Anton B.*, Łódź 1930; T. Wąsowicz, *Życie i działalnoŶć naukowa Ludwika Antoniego B.* [The life and scientific activity of Ludwik Antoni Birkenmajer], Wiadomość Matematyczne [Mathematical news] 34 (1932); J. Dużyk, *Prace Ludwika Antoniego B. nad życiem i dziełem Mikołaja Kopernika* [Ludwik Antoni Birkenmajer's works on the life and work of Nicholas Copernicus], Roczniki Biblioteki PAN w Krakowie [Annual publications of the Library of the Polish Academy of the Sciences in Kraków] 20 (1974), 141–188; J. Dużyk, *Tatrzanskie wędrówki Ludwika Antoniego B.* [Ludwik Antoni Birkenmajer's travels in the Tatra mountains], Wierchy 43 (1974), 113–126; P. Rybka, *Prace xwiązane z historią astronomii w Polsce* [Works connected with the history of astronomy in Poland], in: *Historia astronomii w Polsce* [History of astronomy in Poland], Wr 1993, 223–226.

Paweł Tarasiewicz, Zbigniew Pańpuch