

Marian Biskup *

Polish research on the life and wide-ranging activity of Nicholas Copernicus **

FOR MANY YEARS NOW ATTENTION has been paid in the Polish science to the need to show the whole of life and activity of Nicholas Copernicus. It leads to the better understanding of his scientific workshop and the conditions he worked in. Therefore, first a detailed index of all the source documents was published in 1973, in *Regesta Copernicana*, in both Polish and English version. It included 520 the then known source documents, from the years 1448–1550, both printed as well as sourced from the Swedish, Italian, German and Polish archives and libraries.¹ This publication allowed to show the full life of Copernicus and his wide interests and activities. It also made it possible to show his attitude towards the issues of public life in Royal Prussia — since 1454 an autonomous part of the Polish Kingdom — and in bishop's Warmia, after releasing from the rule of the Teutonic Order.

Nicholas Copernicus lived in Royal Prussia since his birth in 1473 and — excluding a few years devoted to studies abroad — he spent his entire life there, until his death in 1543. He was born in Toruń, a bilingual city (German and Polish) which, since 1454, was under the rule of the Polish king. There he adopted the lifestyle and customs of rich bourgeoisie, as well as its mentality, also the political one. After completing studies in Cracow and at Italian universities, as an educated lawyer and doctor, he settled in the second half of 1503 in the bishop's Warmia, at the side of his uncle, his mother's brother, Łukasz Watzenrode, the then bishop of the Warmia diocese with the capital in Lidzbark (Heilsberg).² Thanks to his uncle, he became a canon of Warmia (though without higher ordination), which was to ensure his material basis of existence, and in the future also possibly the bishop's ordination. However, Copernicus, even though he spent almost seven years in the company of Watzenrode in Lidzbark, also as his doctor, and he accompanied him at some of the Royal Prussia Estates meetings, did not want to realise the plans of his uncle — the bishop, and in 1510 he moved for permanent residence to Frombork (Frauenburg) by the Vistula Bay — the headquarters of the members of the Warmia Chapter. It was there where he continued his astronomic research.

In 1510 Copernicus also started his intensive administrative activities as the representative of the Chapter in Warmia itself, as well as at the assemblies of the Estates of Royal Prussia. These activities were various and must have taken up much of Copernicus' time and though they did not preclude him from dealing with astronomy, they restricted his astronomic activities to after administrative duties. And so in 1510, and at the beginning of 1511, Copernicus fulfilled the function of the Chapter's inspector, and thus had to travel to the south of Warmia — to Olsztyn (Allenstein), around which the lands of the Chapter were situated. At the same time, however, in the years 1510 – 1513 he held a responsible function of the Chapter's chancellor, and thus had to write many letters, mostly in Latin, to the Polish King Sigismund I Jagiellon, and in German — to the Grand Master of the Teutonic Order Albrecht von Hohenzollern-Ansbach. As a chancellor he also was responsible for controlling the accounts of some of the Chapter's offices, especially the Custodia, and verified their accounts every year.

Moreover, Copernicus periodically fulfilled administrative and treasurer's functions connected with the management of the Chapter's economy in Frombork itself, e.g. as the head provisions treasurer (1512). He also took part in Chapter meetings concerning important matters of bishop's

* Toruń, Poland; email: m.biskup@neostrada.pl.

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¹ Marian Biskup. *Regesta Copernicana. Calendar of Copernicus Papers*, Wrocław 1973. Polish version: *Regesta Copernicana*, Wrocław 1973, included only 515 items.

² Marian Biskup, *Działalność publiczna Mikołaja Kopernika (Public Activity of Nicholas Copernicus)*, Toruń 1971, p. 19 n.

Warmia, including the election of its new chief. After the death of Łukasz Watzenrode in 1512, the Chapter chose a new bishop — Fabian Luzjański, with whom Copernicus was friendly — and received the consent of the Polish King Sigismund I for such a choice, while granting to the king the influence on a future choice of the elect, who later on could be approved by the papacy. A treatise of the Chapter with the Polish King concerning this, was accepted by its members (including Copernicus) on 26 December 1512. Two days later (28 December) Copernicus, together with other members of the Chapter, made an oath of allegiance to the Polish king.³ This oath is the proof of Copernicus' loyalty to the Polish royal supreme authority.

Copernicus must have fulfilled his duties flawlessly, as on 8 November 1516 the Chapter chose him as the administrator of its property for three years. It was a very responsible office among the Chapter statuses. This required Copernicus to move for this period to the Chapter's castle in Olsztyn. Its lands included about 120 peasant villages, divided between the administrative units of Olsztyn and Melzak (Pieniężno); they numbered ca. 3600 łan (of Chełmno) [łan — former measure of area, field]. The castle in Olsztyn was the headquarters of Copernicus, however he also travelled to some villages and resided periodically in the second castle of the Chapter — in Melzak (Pieniężno). The main task of the administrator was to manage numerous villages, partly destroyed during the past wars with the Teutonic Order. Copernicus handled the settlement of the empty fields by peasants, be it even from the neighbouring villages. He also took care and settled the land deserted as a result of its owners' sickness or death. Special economic books called *Locations of deserted fields* (*Locationes mansorum desertorum*), which were already kept by the predecessors of Copernicus, were used for this purpose.⁴ His first entry dates from the end of 1516, and the last one — of 14 August 1519. During these almost three years 66 entries were made in Latin by Copernicus' hand (on average 22 per year). They are a proof of Copernicus' high mobility, who made transactions with peasants of Warmia (German or Polish) concerning the receipt of a specified number of deserted fields. It is estimated that Copernicus might have visited 41 village settlements in Warmia, mainly in the region of Olsztyn, as well as Melzak (Pieniężno). Part of the entries is only the confirmation of transactions made between the peasants, e.g. through exchange of farms or purchase of land from users unable to work on it. However, most of the entries concern filling, on specified terms, years-long vacancies in the villages of Warmia. Copernicus adopted a human approach towards the swap of farms, respecting the old age of their users. He also settled Polish (Mazurian) peasants and wrote their names correctly. On the whole, his activity was favourable for both the Chapter and the peasants of central and south Warmia.

In this period Copernicus acted also as a doctor as a result of an epidemic decimating the people of Warmia. The infected peasants turned to him and other doctors for council and medications. Also the conflict of Copernicus as an administrator with some of the representatives of the Teutonic Order's authority escalated since 1517, among others in respect of the right of tree felling in the border forests. The disputes were not settled as a result of the warrior-like attitude of the Grand Master Albrecht and took much of the administrator's energy, while being the augury of the coming military conflict between the Teutonic Order and Poland of the Jagiellon.

This conflict, which started after Copernicus' return to Frombork, commenced in 1519 and was to last for almost a year and a half — until April 1521. Bishop's Warmia, part of which was occupied by the forces of the Grand Master Albrecht, was the main victim of the aggression of the Teutonic Order. Frombork was saved and most of the Chapter left its headquarters in February 1520 together with Copernicus, who again moved to Olsztyn. There he served as a chancellor of a group of canons, writing its letters, especially to Bishop Fabian Luzjański. However, Copernicus must have been interested in the growing danger for south Warmia from the forces of the Teutonic Order, which during autumn 1520 besieged Lidzbark (Heilsberg) — the seat of bishop Fabian, and took a number of cities in central Warmia putting Olsztyn in danger. In this difficult situation Copernicus was once again chosen by the canons as the administrator, to prepare the castle and city of Olsztyn for the

³ Marian Biskup, *Nowe materiały do działalności publicznej Mikołaja Kopernika z lat 1512–1537* (*New materials to the public Activity of Nicholas Copernicus in the years 1512–1537*), Warszawa 1971, p. 33 n.

⁴ Mikołaj Kopernik. *Lokacje łanów opuszczonych* (*Locations of deserted fields*), edited by Marian Biskup (Olsztyn 1983), pg. XX n.. 41 n.; *Documenta Copernicana*, t. VI 2, edited by Andreas Kühne and Stefan Kirschner (Berlin 1996), pages 153–225, 245–253 (with editioning errors).

defence. The Chapter, in its letter of 16 November 1520, also turned to the Polish King Sigismund Jagiellon asking him to send military aid to Olsztyn. This letter was written by Copernicus. He ensured in it that the canons of Warmia mean to remain faithful to the king and surrender themselves under his protection.⁵ This letter was intercepted by the soldiers of the Grand Master, still Olsztyn did receive military support from royal commanders, which insured the safety of Olsztyn which was prepared for the defence also thanks to the efforts of the administrator Copernicus. For this reason Olsztyn was not besieged in mid January 1521 by the forces of the Teutonic Order, while Copernicus still made efforts to improve the defences of the castle and the city.⁶

The 4-year truce between Poland and the Teutonic Order at the beginning of April 1521 allowed administrator Copernicus to resume the settlements in some of the peasants villages around Olsztyn. However, in the first days of June he resigned from the position of the Chapter's administrator and assumed the function of the "Commissioner of Warmia", that is the manager of the northern part of Warmia with the desolated Frombork. In the years 1524–1525 he again performed the function of the Chapter's chancellor, taking care of regulating the disputes with the Teutonic Order, which was still occupying the lands and some of the cities of north Warmia. It was only the treatise of Kraków between Poland and Albrecht as a lay vassal prince in Prussia (Ducal) that brought the conflict to an end.

Then the main interests of Copernicus turned to the issue of a monetary reform of Royal Prussia and Warmia. It was connected with their difficult financial situation, resulting from the fact that great Prussian towns, mostly Gdańsk and Toruń, were making still worse coins, with a smaller content of silver. This caused the older and more valuable coins to disappear from circulation. This issue was well known to the merchant families of Toruń, from which also Copernicus descended. He also encountered this problem while at various offices of the Chapter, especially as the administrator. After 1510 the value of the Prussian coin decreased also as a result of minting worse and worse coins by the Grand Master Albrecht. In the years 1515–1516 it resulted in forbidding to take the worse coins of the Teutonic Order as payment and evoked pursuit to issue a new coin of Royal Prussia. Fabian Luzjański, Bishop of Warmia, was in favour of such intentions. It was probably he, who persuaded Copernicus, residing at that time in Olsztyn as the Chapter's administrator, to prepare a theoretical justification for the reform of the Prussian coinage. Copernicus, who was well oriented in the monetary situation of Royal Prussia and Warmia, prepared it in the summer of 1517. Then he prepared the first treatise, written in Latin, called *Meditata (Meditations)*, with the date 15 August 1517. He sent this text to Bishop Fabian, who in turn gave a copy to the city council of Gdańsk and later, in 1519, also to the chambers office of King Sigismund Jagiellon.

This small treatise was a proof that Copernicus, basing on the analysis of Prussian monetary situation which was well known to him, implemented the method of a scientific environment observation in the social and economic phenomena. He saw the source of the coin's value only in precious metals — gold or silver. He also differentiated between value (valor) and estimated value (estimatio) of the coin. He also formulated a law on the pushing the good coins out of the circulation by the worse. This new economic law was later ascribed to an Englishman, Thomas Gresham, and is called today after his name. Copernicus also postulated for the authorities not to gain profit from coin minting.

In the second part of his treatise Copernicus showed current monetary relations in the Royal Prussia, enumerating the kinds of coins and explaining the causes of the fall of their value, among others the abuse of the right to produce coins by some of the great Prussian towns for the purpose of increasing their income, which led to the decrease of the estimate value of the Prussian coin and to pushing out of the earlier good coins by the worse ones, with a bad effect for the whole "Prussian homeland". Therefore, he postulated a reform of the coin by creating a single mint in Royal Prussia which would mint the improved coin under the seal and on behalf of the whole "Prussian homeland". He also proposed a complete withdrawal of the old coin.

The most striking element of the *Meditata* is the astuteness of the insight that Copernicus had on the character and role of the coin in the context of current social and economic relations in Royal

⁵ Marian Biskup, *Nowe materiały do działalności publicznej Mikołaja Kopernika z lat 1512–1537 (New materials to the public Activity of Nicholas Copernicus in the years 1512–1537)*, pages 39–40.

⁶ Marian Biskup, *Działalność publiczna Mikołaja Kopernika (Public Activity of Nicholas Copernicus)*, pages 45–47.

Prussia, and also a good knowledge of Prussian monetary mechanisms. It should also be pointed out that even though he was a son of a bourgeois he was not in favour of the monetary privileges of the great Prussian towns, including Toruń.⁷

However, this first treatise of Copernicus had not been discussed at the meetings of the Prussian Estates until 1522, even though it was known to a group of clergy with bishop Luzjański, as a leading person. This treatise was also translated into German, so the members of the Prussian Council could have a better understanding of its content. However the translation was not done by Copernicus but by one of the secretaries of the city council of Gdańsk. In this version it was presented by Copernicus at the assembly of the Estates of Royal Prussia in Grudziądz (Graudenz) on 21 March 1522, in the presence of a Polish royal legate Maciej Drzewicki, who advocated the need to implement a uniform coin for all of the lands within the Polish Crown, including Royal Prussia. For that reason Copernicus added at the end of his treatise a proposal of equalling the value of the new Prussian coin with the coin of the Polish Crown by minting 3 Prussian solidi (Schilinge) equalling 1 Crown grossus (Polish grosz). This confirmed the understanding for the need to uniform the coins within the territory subject to the Polish royal power, however without cancelling the right of Royal Prussia to mint its own coin. The first treatise of Copernicus was entered in this form into the Gdańsk book of the minutes from the estate meeting in Grudziądz.⁸

However, this treatise titled *Tractatus de monetis alias Monete cudendi ratio* (*The way of minting coins*), was not a subject of discussion because of the change of political conditions in Prussia, and especially the creation of a lay fief in 1525 — the Ducal Prussia, with duke Albrecht as a ruler — and legal and system changes in Royal Prussia, most of all the reforms of its General Parliament with the participation of Prussian nobility in 1526. There was also a growing problem of monetary cooperation between Prussia and the Polish Crown. This was the reason for a years-long discussion, also in Warmia, with the new bishop Maurice Ferber leading it as the head of the Prussian Estates. Undoubtedly, he persuaded Copernicus to bring forward a new version of the monetary treatise, including the changes in the relations between Royal Prussia and Ducal Prussia and approximation to the monetary system of the Polish Crown. Copernicus also enriched his scientific methods, he must have read some of the European publications concerning the monetary issues. He definitely reached for sources from Warmia and to coins minted during the reign of the Teutonic Order, which he compared with coins minted at the beginning of the 16th century both in Royal Prussia and in the Polish Crown. This also made his views on the future monetary reform much sharper.

His thesis, prepared in Latin, was directed to people taking care of monetary matters in Prussia, however it was not published.

Copernicus prepared his treatise, titled *Monete cudendi ratio* most probably by Spring 1526, partly using the text from 1517. The new version was enriched with an introduction, in which the issue of debased coin is presented as one of the main reasons for the fall of the state. Copernicus dramatically accented the dangerous aftermath of the decrease of the coin value, which might have brought real disaster to Prussia. Again, he brought up the law of superseding the older, better coins by worse ones. He also explained the causes of the decrease of coin value which resulted from addition of copper in the minting of gold and silver coins. He presented it through the example of the deterioration of the coin of the Teutonic Order State after the year 1410, which led to ousting of the older, better coins with larger amounts of silver by new, worse coins with bigger amounts of copper and decreased to a quarter amount of silver. This might result in the collapse of trade, also with foreign partners, which could have been a real disaster for the “beloved homeland” (that is Prussia), to which the subjects have the most important obligations, right after God, and should even give their life for it. Because only countries with a good coin flourish, and the ones with bad coin causing the prices to rise as in Prussia, collapse.

As a solution for these issues Copernicus proposed to close down all the mints in Royal Prussia and Ducal Prussia, and to introduce only a single state mint in both countries, which would mint coins with the signs of the whole of Prussian lands, with a royal crown to signify the supremacy of the Polish Kingdom. If Prussian duke Albrecht wanted his own mint, it would mint a coin with his coat of

⁷ Hans Schmauch, *Nikolaus Copernicus und die preussische Münzreform*, Gumbinnen 1940, pages 27–34.

⁸ Hans Schmauch. *Nikolaus Copernicus*, pages 4–5; *Akta Stanów Prus Królewskich*, t. VIII, edited by Marian Biskup, Irena Janosz-Biskupowa, Toruń 1993, pages 219–223.

arms but also with the royal crown above it. But there would still be only two mints in the whole Prussia. One would mint a coin with the royal coat of arms on the face and of Royal Prussia on the reverse, and the second one with royal and ducal coats of arms respectively. The minting of coins in both mints would be done by the will of the king, and both kinds of coins would be accepted in the whole of the Polish Crown. Copernicus also repeated his opinion, although in a more moderate form, that the rulers of both parts of Prussia should not seek profit from the minting the coins, he emphasized only the possibility of return of costs incurred. He also returned to the postulate of complete withdrawal of the old coin from circulation after production of the new one to avoid the danger of its mixing and confusion in the people's life.

There was a completely new part concerning the relation of estimation (price) of gold and silver coins, which should be the same as the relation between pure gold and silver. The new Prussian coin should be also adjusted to the Polish (Royal) coin.

The treatise of Copernicus was praised among modern researchers of monetary and economic history, who emphasized a high level of author's scientific approach. This work showed the widened scientific workshop of Copernicus as well as his realistic view on the essence and function of money, while rejecting the nominalistic and dominion monetary theories. Much attention is also given to the significance of the law of the worse coins ousting the better ones, as it has a European character. Stressed is also the endeavour of Copernicus to bring closer relations of both parts of Prussia with the Polish Crown, also in the issue of monetary uniformity.⁹

The assumptions of Copernicus' monetary treatise were not fully implemented as a result of difference of interests of large Prussian cities and the Prussian Duke Albrecht, although the text was made available to both Ferber, Bishop of Warmia, and the chambers of the duke. Copernicus did take part in some of the sessions of the General Council of Royal Prussia and the legates of Duke Albrecht in 1528 and 1530. At the first meeting he was chosen as one of the experts for the assessment of the Royal Prussia's coin. At the second meeting he voiced his opinion on the value of the gold coin, trying to present the issue on the basis of a purely scientific analysis, to enable the examination of the value of money.¹⁰ However, as a result of the monetary reform passed in 1528 in Royal and Ducal Prussia, even though there were a number of mints established — under the pressure mostly from Gdańsk, Toruń and Duke Albrecht — the Prussian monetary system was adjusted to the Polish one, with the measuring rate modelled on the Polish Crown. In fact, both parts of Prussia joined a monetary union with the Crown.

The years 1516–1530 were the peak period of the public activity of Copernicus, not only in the life of Warmia, but also in the whole of Royal Prussia. It should be noted that these years were also the most intensive period of his scientific activity in astronomy and the very period during which the main part of his work *De revolutionibus ...* was created.

During the last 13 years of Copernicus' life (1531–1543) there was a narrowing of his activities in the internal life of Royal Prussia, while his advanced age played some part in this. It did not mean the withdrawal from public life, but it was restricted to the territory of Warmia and fulfilling limited administrative functions on behalf of the Chapter, e.g. a legate or a supervisor. In 1531 as a legate of the Chapter to Olsztyn, Copernicus created the so-called Olsztyn bread tax, regulating the prices and weight of bread in the towns of Warmia, realizing the rule of a fair price, i.e. including the costs of production and prices of corn. The most important role Copernicus fulfilled for the Chapter was in 1537, after the death of Bishop Ferber, being for a period of time one of the two stewards of the villages and towns of Warmia. He was also on the list of candidates for the new Bishop of Warmia, however he did not have much chance, and the Chapter chose the protegee of the king — Jan Dantyszek (Dantiscum). However, in 1538 he did participate on behalf of the Chapter in the formal

⁹ Jan Dmochowski, *Mikołaja Kopernika rozprawy o monecie i inne pisma ekonomiczne (Dissertations of Nicholas Copernicus on currency and other writings on economy)*. Warszawa 1924, pages 3–13; Stefan Cackowski, *Mikołaj Kopernik jako ekonomista (Nicholas Copernicus as an economist)*, Toruń 1970, pages 35–50; Erich Sommerfeld, *Die Geldlehre des Nikolaus Copernicus*, Berlin 1978, pages 103–110.

¹⁰ *Protokoły Sejmiku Generalnego Prus Królewskich (Protocoles of the Assemblies of the Estates of Royal Prussia)*, edited by Marian Biskup, Bogusław Dybaś, Janusz Tandeci, t.1, Toruń 2001, pages 170; t. II, Toruń 2005, pages 274–275.

assumption of power by Dantyszek and took part in his journey visiting the main towns of Warmia and receipt of the oath of allegiance from his subjects.¹¹

Moreover, Copernicus was still employed as the doctor of the consecutive Bishops of Warmia and some of the Chapter members, as well as of courtier of the Prussian Duke Albrecht in Królewiec (Königsberg, currently Kaliningrad). It was a proof of social service performed most of all in favour of the citizens of Warmia.

A closer look at almost 40 years of activities of Nicholas Copernicus gives us the right to a conclusion that his activity was quite versatile, requiring much effort. It was also characterized by conscientiousness in performance of duties. It resulted in Copernicus being often granted numerous functions in the Chapter of Warmia, or being entrusted with matters requiring special trust, especially during his stay in Olsztyn. The disinterestedness that Copernicus showed while performing his duties was striking, especially in the matters concerning the reform of Prussian currency. He was guided by his sense of duty and attachment to his homeland (*patria*) — the Royal Prussia, the fate and welfare of which concerned him most. This feeling was connected with loyalty for the highest master of Royal Prussia and Warmia — the King of Poland.¹² He considered the connection between Royal Prussia and the Polish Crown as essential, especially in the monetary matters and defence against the aggression of the Teutonic Order. This “recluse from Frombork” was sincerely connected with the most important problems of Warmia and Prussia, with the welfare of his “Prussian homeland”.

¹¹ Marian Biskup, *Działalność publiczna Mikołaja Kopernika (Public Activity of Nicholas Copernicus)*, pages 83–86.

¹² *Ibid.*.