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Nicolas Copernicus as a Physician in the Time of Polish Renaissance

Николай Коперник — врач эпохи польского Возрождения

Mikołaj Kopernik lekarz polskiego Odrodzenia

The United Nations proclaimed 1973 as, A Commemoration Year of Copernicus, the universal astronomer and creator of the greatest scientific revolution.

The era, in which Nicolas Copernicus lived, was picturesque and eventful and lead to an enormous cultural and philosophical revolution. Science broke away from the medieval way of life and thinking, and humanizm became a slogan of Europe's progressive society. The criticism the authorities recognised to that time, formed the belief that man should get to know the world, which surrounds him, through his own experience and understanding. Copernicus was active at the end of the medieval era and during the begining of Renaissance's prime, up until the time of Reformation and Counter-reformation. So, this was a period of clashes and contradictions which ran through the whole of Europe. „To stop the Sun and move the Earth” it was necessary to change time-honoured traditions and dogmas.

In those times Poland was a country of developing culture and science, and was respected by the whole world. The Renaissance trend spread among intelektualists at the Jagellonian University in Crakow, in the royal courts and in the court of high ranking state officials and among the rich middle class. At this time the „Vitula Society of Sciences” was founded. Members of the society came from different social classes, but they all were stimulated by enthusiasm in studying the powers which govern the world and man.

In tolerant, enlightened and rich Poland, where freedom patronized courageous quests, the thought of great discoveries, which would point out the cosmos's horizon to mankind, could freely ripen.

Nicolas Copernicus started his studies in Toruń and then in Włocławek and Chełm. In those schools he came into contact with Nicolas Wodko (Albstemius) physician and astronomer, who during the years 1479—1480 lectured at the Bologna University. The school in Chełm was under the influence of the Brothers of Community Life and had a high educational standard. It exerted a deep ideological influence, not only on its students but also on establishing ideological notions of the middle class. Maybe, already here Copernicus had assimilated humanistic views and attentiveness to intellectual training, just as well as to the development of social virtues.

During the year 1491—1495 he studied at the Faculty of Arts (Facultas Artium), at the Jagiellonian University in Crakow. The University at this time was one of the most famous in Europe, and it was why one third of its students were foreigners. Entrance to Alma Matris Cracoviensis was open to anyone, irrespective of class differences. In 1494 Hartman Schedel wrote in the *World Chronicle* about the Crakow Academy that it was: „rich in many eminent and very learned men, and when it came to astronomy there is no other University that is so renowned [...]”. Here Nicolas Copernicus came into contact with many world known scientists, among them were Gregory from Sanok, Wojciech from Brudzew, Wawrzyniec Korwin, but first and foremost John Ursinus, lawyer and physician, one of the most outstanding Polish humanists. He advocated anatomical sections and believed it was the only way to learn about diseases and bodily changes caused by them. Copernicus also listened to lectures given by Bernard of Biskupie, a known doctor of medicine. And so, in an atmosphere of science and new ideas Copernicus's interests, criticism and conviction about the necessity for new scientific ascertainments were formed. Copernicus's stay in Crakow was the most crucial period in the shaping of the ideas and personality of the future astronomer, physician and economist. In Crakow, the progressive modern capital of Poland with international influence, Copernicus developed his love of ancient literature and culture. It was not then surprising, that like other progressive people of those times, the future great astronomer and physician used a letter seal which figured Apollo with a lyre, a symbol relating to the fact that Copernicus was for the new trends. He often visited Crakow during his life time, because this town influenced not only a person's mind but also his personality, as Copernicus himself stated: „yes I confess that everything that I am I owe to our Academy”, Crakow never failed him in difficult times, for just as Salamanca and Oxford, it never officialy condemned his theories,

whereas they were condemned by the Sorbon and most of the protestant universities.

During the years 1496—1501 Copernicus lived in Italy. He studied law in Bologna, listened to Dominic Novarra's lectures on mathematics, geometry and trigonometry. In 1500 he gave public lectures on astronomy in Rome at the pope's University of Sapienzo. He took lessons from the humanist Antony Urceo, attended Peter Pompanazzo's lectures on philosophy and learned the art of painting from Francii Raibolini. During his studies at this most famous Italian university, he did not neglect astronomy from which many problems he had already overcome in Poland.

In the spring of 1501, he returned to Poland and lived in Warmia, there at the Chapter there was no doctor. Therefore Copernicus asks for permission to study medicine, which he obtained: „*Post maturam deliberationem Capitulum votis utriusque condescendit, maxime ut Nicholaus medicinis studere promesi Consulturus olim Antistiti nostro Reverendissimo ac etiam dominis de Capitulo medicus salutaris*”. In spite of this decision the sense of Nicolas Copernicus's life was still astronomy. For in the middle ages there existed a far advanced connection between astronomy and medicine. One came across professors of medicine engaged in astronomy, just as professors of astronomy practicing medicine. Macrocosm — the world of heavenly bodies was reflected in microcosm — which was presented by man's organism. There is no doubt that only the person, who knew these two sciences to their depth, could write:

„And in the centre of all the Sun has its abode — Medium naturae et medium loci —. Would it be possible, in this most wonderful sanctuary, to place this everburning fire in a different or better place than this, from which it can light everything at the same time, and the Earth is fertilized by the Sun — Datur Vitae and becomes pregnat to give birth each year.”

It maybe that Copernicus's decision to study medicine was influenced by a born in France, new direction in medicine „Iatromathematics” that is astrological medicine. Copernicus's later medical practice proved that he was far from giving himself uncritically to this direction, and tried in another way to give medicine a real scientific character by introducing into it mathematics for the first time. Johann Schoner writing about Copernicus in 1529 stated:

„Ein Arzt ohne Astrologie ist gleichsam wie ein Blinder ohne Lehre”, and in another place „Wiewohl die Arztsneiene lautere wahre Kunst, so ist doch kein Arzt vollkommen ohne die edle Kunst Astrologie.”

Nicolas Copernicus, future defender of Poland, decided to study medicine in Padua, because the university had a number of privileges which guaranteed freedom of convictions, and lectures were given by

councillors. He comes into close contact with philosophers, astronomers, mathematicians, and continues his studies of law, which he crowns by obtaining the title of doctor of Ecclesiastical Law on the 31st. May, 1503. He finishes medicine as a licentiate which allows him to practice medicine. In this way medicine and astronomy intertwine in his mind and he with his vision of genius crates a true picture of man and of the structure of the universe.

He arrived in Frombork at the end of 1503, and next during the years 1504—1512, he lived in Lidzbark Warmiński, carrying out duties as the secretary to Bishop Waczenrode and to the Chapter. He devoted himself to the wide medical practice as well as to astronomical observations. Most probably in Lidzbark he started to think that the time had come to stop foretelling people their future by the stars, and to begin foretelling the destiny of the stars.

In 1509 he translates from Greek and publishes the letters of Teofilak Symonkatta. In 1513 Copernicus sends to Rome a project reforming the calender, and in 1520 he commands the defence of the castle and town of Olsztyn, besieged by the Teutonic Order. In 1526 he writes an economical treatise *Monete Cudende Ratio* full of new thoughts, and works upon the preparation of the first Polish geographical map. He formulates a new revolutionary theory on the structure of the universe — heliocentrizm, with which he acquaints his closest friends. It was not until 1530 that the first news of his conception of the structure of the universe reached Rome, Vienna, Wittemberg, awakening in some interest and in others disbelief or sneers. His answer to the latter was:

„Just in case there are thoughtless people who know nothing about any part of mathematics and who nevertheless want to express their opinion based on strained interpretation of parts of the Holy Bible, and dare to criticise and condemm my work”, I declare: „I disregard them and despies their thoughtless opinions.”

None of Copernicus's achivements were appreciated during his life. His life's work *De Revolutionibus Orbium Coelestium, Libri VI* was sent to Basle to be printed shortly before his death. It was recognised only after the death of its creator.

Nicolas Copernicus settled in a small town — „*Ad ostia Vistulae fluminis*”, on the periphery of cultural life, far from large scientific centres, among a small group of friends, about which he himself wrote: „that it puts a spiritual union above physical friendship”. During his life he was more known to the wide community as a physician than as an astronomer. Nowadays, taking into account the lapse of time and common acceptance of the Copernican theory, one cann't be suprised that Nicolas Copernicus as a physician, inspite of his remarable medical achievements, stands in the shadow of Copernicus — the astronomer.

In astronomy he expressed himself most fully, and his heliocentric theory gained appreciation and universal significance. A more exact analysis of his medical activity shows, that also in this field Copernicus's statements were progressive, original and bold.

Copernicus being a humanist and an inquisitive representative of science, was interested not only in a ill person but also in a healthy one. He wanted to know a man comprehensively, and to find the reason for his ailment and to prevent it. A great influence on the forming of Copernicus's medical intellect had the works of Miechowita, famous throughout Europe rector of the Jagiellonian University, who Copernicus kept contact with. And so, the path of this great learned man lead always through work to the s'ars „*per aspera ad astra*”. Copernicus looked upon diseases not as plagues, but occurrences caused by specified reasons. His attitude as a physician had an investigative character, tending to revel not only the nature of things, but also to discover and ascertain association and correlation between individual aspects of a given phenomenon. He noticed e.g. that the



Fig. 2. A portrait of Nicolas Copernicus from the 16th century (according to Birkenmajer)

cause of many diseases was contaminated drinking water. First by his own hand he works out plans, and next supervises the realization of the waterworks in Frombork, to supply the town with pure healthy water. The grateful community of this town wrote:

„What nature had grudged people Nicolas Copernicus gave them.”

When bakers badly under-baked bread and it was unhealthy, he passed on a special baking recipe, which the people called doctor Copernicus's recipe. During the cholera epidemic, at Copernicus's suggestion, the people who had come into contact with the ones who had cholera were moved out of Fromborg. With his prophylactical, sanitary arrangement Copernicus was far ahead of this time in this field of medicine. This also proves the fact that Nicolas Copernicus, knew and lived with the problems of his region. That is why Nicolas Copernicus was acknowledged as the author of the treatise entitled *Regimen Sanitatis*. This work discusses advice on hygienic set down for individual months of the year.

At the beginning of his medical practise, prescriptions written by Nicolas Copernicus were often very intricate and contained many ingredients derived from vegetable, mineral and animal sources. And so, for example, on the cover of Euklides's book *Elementa geometrica* there is Copernicus's recipe which contains 23 ingredients. This is a typical medieval recipe. In Mateus Silvaticus's *Opus pandectarum* from the year 1498, there is also a recipe by Copernicus „*contra amorem*” containing the following text:

„Confert patientibus amorem que dicitur hereos, nam facit eos dormire [...] inebriat potantem.”

In this period Copernicus also prescribed caesarian pills for good humour and a bright mind. However in John Mesus's book from the year 1502 *Opus medicinale cum expositione Mondini*, in the chapter on oral cavity diseases one can find, among other remarks, Nicolas Copernicus's recipe „*contra putridinem gingivarum*” which reads:

„Take 2 or 1.5 as. *Aquilegia vulgaris*, 1 as. *Herba Rutae* and make a decoction in an sufficient amount [...] add honey and with all this wash your gums each morning and night, and then always apply with the following lubricant: take an egg white and *Herba Rutae*, grind and then strain through a clean cloth, add powdered green *Rhizoma Caricis*, apply this in the amount necessary to the gums, after the mentioned mouth wash. Hardly anything can measure up to this. It has been tried.”

However, in result of medical experience and owing to unusual hard work and persistent observation, he was the first to state a small efficiency of sometimes renowned recipes of a long and complicated

* 1 As — a measure unit until 1555.

composition and turned to employing straight forward ones. He felt that it was better to prepare short prescriptions, but with sure and tried substances. When administering help to the sister of a Warmia canon in 1532 who was gravely ill, he prescribed stomach pills made up from the following prescription:

„*Corrallorum rubr.*
Cinamonii am drachm 1
Specierum diarod abbat drachm 2 1/2
Zuceri albi 1bS (= libram semi)
Aq. destillst. g.s.ut. fiat confecto in rotulum”.

Some of the medicines used by Copernicus such as, *Rhizoma Tormentillae*, gold, sandal-tree or *Herba Rutae* are still used nowadays. In the light of some documents, Nicolas Copernicus was a reformer in the field of drug dosage as he adopted Archimede's law of mathematical equilibrium. Copernicus thought, that to remove illness a precise dosage of drugs was needed depending on the exacerbation of the illness just as much as on the weight of the patients body „*datum pondus data potentia movere*”. Basing the dosage of drugs on calculations, he introduces „astrological” medicine a scientific method based on the „science of sciences” that means on mathematics, in this way reducing life occurrences to physical changes.

He constantly deepens his medical knowledge, and buys numerous medical works, on which he often makes remarks and notes, called „*marginalia*”, as for example, on Arnold de Villa Nova's book *Breviarum practica medicina* from the year 1497. He systematizes and gives the reasons for the medical information acquired with the aim to base medicine of those days, which was often composed of loose, inconnected observations, on substantial, scientific grounds. Among others, in *Practica Medicina* from 1490, he writes out individual bodily organs and next to them the names of particular diseases. He collects an impressive, as for those times, library and on many books in his own hand writes his own observations, from which one can infer that he was interested in practical medicine. For example, he answers the question, „What should be applied in the case of a bite by a mad dog” and gives a prescription against diarrhoea: „Take enough clove powder — *Flores Caryophyllorum*, pour it into warm red wine, drink one mouthful in the morning and one at night.” In his notes he doesn't even omit cosmetic recipes to remove unwanted hair, and how to make hair dye etc. In the last period of his medical practise he prescribes mainly herbs.

However Copernicus's genius shone in another field, and this gave



Fig. 3. Copernicus — an etching from the turn of the 15th century (according to Birkenmajer)

him everlasting fame, it must be clearly stressed that during his life-time he was more known as a physician than as an astronomer. It is therefore not strange, that on the oldest authentic portrait painted by Thomas Strimmer just as on later likenesses, Copernicus holds in his hand a branch of *Convallaria majalis*, or *Radix Taraxaci*, which were the symbols of the medical profession in those times, and not the symbol of astronomy — astrolabium. Szymon Starowolski publishing Nicolas Copernicus's biography in 1627 wrote in *Scriptorum Poloniarum Hecatontas*, that „in medicina velut alter Aesculapius celebrabatur”. Besides contemporaries call him „Artium et medicinae doctor Copernicus”, which proves, that the creator of the heliocentric system of the universe, also belongs to the medical community who during and after his lifetime highly respected him.

Nicolas Copernicus was a physician not only to notables and the rich, but also to the common people, among whom he had an extensive

practise and by whom he was worshiped and adored. He knew many medicines, which he prepared, tried and named, and often supplied poor patients with free drugs. His friendly attitude towards peasants expressed itself not only in free medical help, but also in his projects of changes in the peasants, legal and property status. Copernicus was the author of a draft law „*Locationes mansorum desertorum*”. His outstanding personality caused that, even during his lifetime he became a legend. He was a physician, who knew how to combine what he saw with what he thought.

He never refused medical help to anyone, no matter of distance, time of day or year. His medical practise reached far and was not limited to Lidzbark, Frombork or their districts. Manytimes he travelled to Princes's Prussia, Gdańsk, and Olsztyn. Religious and nationalistic hate was unknown to him. He proved this, when he cured canon Scultetus, who openly supported Luther, and when in 1541, at the age of 68, in answer to a written request by prince Albrecht of Prussia, who wrote: „Would Dr. Nicolaus like to render his skill given by God”, he came to Królewiec to save the life of the prince's friend and advisor, with whose illness no other doctor could cope. He was a physician of extraordinary knowledge, but regardless of this, in exceptionally complicated cases he sought advice either oral or written from other great physicians, or sent his patients to them, prompted by his conscientiousness and concern for the patients. He consulted Jan Salfa, court physician to king Zygmunt and Wawrzyniec Wille, prince Albrecht's physician. Joachim Retyk the know Crakowian physician and astronomer, was his friend. Thanks to him the immortal work *De Revolutionibus Orbium Coelestium* was published. His attitude to a patient, based on the classical principal „*Salus aegroti Suprema Lex*”, his extraordinary personality, goodness, compassion, and vast knowledge earned Nicolas Copernicus the title of the second Polish Aesculapius.

It is no wonder that more notice was given to Copernicus as a genial astronomer, but there is no doubt (though it is not easy to estimate great scientist's contribution to knowledge) that his genius also stamped medicine, making him the first physician among the very best — *primus inter pares*.

Copernicus died on the 21 V 1543 in Frombork, in the time when his book *De Revolutionibus Orbium Coelestium* was just published, and as Jan Sniadecki said:

„It was a sunrise of immortality at the time of the death of a fading man” who „Stoped the Sun and moved the Earth, and the Polish race bore him.”

For indeed, Copernicus's family was of Polish peasantry and was traced back to the village Copernici in the Otmuchów district. Nicolas's father was already a merchant-wholesaler living in Crakow, and next he moved to Toruń, and took Barbara Waczenrode as his wife. The Waczenrode family came from the village of Pszenna, in the Swidnica district. Lucas Waczenrode, the brother of Nicolas Copernicus's mother, and an advisor to three Polish kings, was a Warmia bishop, and fought manytimes with the Polish armed forces against the Teutonic Order. In this way two families, originating from the Polish Śląsk, were joined. Both families were of peasant decent, but in the 14th century they advanced to the middle class, and in the 15th century owing to their hard work and great vitality they settled down among the town patricians. In this society on the 19th February 1473, Nicolas Copernicus was born, and like his parents and family he loved Poland, the country on the Vistula, and served her throughout his life, until the end of his days.

STRESZCZENIE

Autor określa wkład M. Kopernika w profilaktykę i medycynę praktyczną. Niezwykła osobowość, dobroć i miłosierdzie oraz ogromna wiedza medyczna, zjednała Kopernikowi miano drugiego, polskiego Eskulapa. Kopernik był lekarzem nie tylko dostojników i ludzi zaможnych, ale leczył także lud, wśród którego miał rozległą praktykę i przez który był uwielbiany i czczony.

„Choć wstrzymał słońce i ruszył ziemię, a polskie wydało go plemię”, to za życia był znany przede wszystkim jako lekarz. Jest oczywiście sprawą naturalną, że po ogłoszeniu *De Revolutionibus Orbium Coelestium* najwięcej uwagi poświęcono Mikołajowi Kopernikowi jako genia'nemu astronomowi.

OBJAŚNIENIA RYCIN

Ryc. 1. Recepta wypisana przez Mikołaja Kopernika (wg Roztworowskiej)

Ryc. 2. Portret Mikołaja Kopernika z XVI wieku (wg Birkenmajera)

Ryc. 3. Kopernik. Akwaforta z przełomu XVI i XVII wieku (wg Birkenmajera)

РЕЗЮМЕ

Автор определяет вклад Н. Коперника в профилактику и практическую медицину. Необыкновенная личность, доброта и милосердие, а также огромные медицинские знания — все это дает нам право назвать

Коперника вторым, польским, Эскулапом. Коперник лечил не только знать и богатых людей, он был также врачом бедных, которые его любили и уважали.

„Хотя он остановил солнце и привел в движение землю, польское его произвело на свет племя”, Коперник при жизни был известен прежде всего как врач. Вполне естественно, что после опубликования *De Revolutionibus Orbium Coelestium* больше всего внимания посвящается Николаю Копернику — гениальному астроному.