Education is not possible for a dog in this sense. Education is possible for a man, outside of Nazi Germany and Japan where nothing but training is permitted. It is very wholesome often to begin with training and develop into education. You remember that the great centers of philosophy in Greece, the academy of Plato and the Lyceum of Aristotle, were both gymnasia. They were originally places for physical exercise which became centers of the greatest schools of philosophy in the world. The medieval universities were primarily technological. They were intended to train men for the priesthood. The modern university is, and in a large measure ought to be, based largely on technology; but these institutions fail terribly of their purposes if they remain training institutions, if they remain merely technological. It is an interesting thing to realize—perhaps it is one of the lessons that the war teaches—that technology instead of making fundamental education in the old sense unnecessary makes it enormously more necessary. The greater the mastery of man over the material world, the more difficult become the relations between men as men, and the more vital becomes real education which doesn't just train men to respond automatically to stimuli but trains them to understand and to want sound relationships, the most precious fruit of which is in cooperative action. No nation that does not have effective cooperation can survive. Pure individualism is only possible to the pioneer in the wilderness. So that the problem is not whether we shall have cooperative action or not, but what kind of cooperative action we have. And there are two ways, these two same old ways, of getting it, training and education. Training is, of course, the easiest way.

Did any of you read (and I hope you have, it's one of the most significant of recent war books) Smith's "Last Train from Berlin"? Among the disheartening things in it are his pictures of the tremendous power and efficiency with which all initiative, all imagination, all sympathy, all human quality is trained out of the victims of the Nazi régime, and the way they are molded into a rigid, utterly heartless, terribly powerful machine. Training is relatively easy, but after all the trouble is that it's inadequate to meet conditions in this changing universe. The moth which flies toward the sun also flies into a flame, the merely trained person, when conditions are altered, when conditions become complex, if he has no education, no orientation, is as likely as not to march off a cliff into the sea. We are witnessing to-day a world struggle between, on the one hand, peoples who are fully trained and on the other hand our own peoples who are half educated. And that is our problem in the Solomon Islands now. We're suffering because we are half-educated people meeting a very fully trained people and our task is, of course, to complete that education in a sense of the understanding of relationships and of the need and possibilities of cooperative action by democratic consent. It would be easy to produce common action by training, but in this country we are trying a more difficult and a nobler experiment. We are seeking to accomplish the aims of national planning by common consent and not by compulsion, to create a new social economy within the framework of a democratic order and without loss of the essential values of the older liberalism. Our success is still problematic. Whether the obstructive forces of ignorance and selfishness can be overcome without Naziism or Fascism is still on the knees of the gods, but on the success or failure of this experiment may depend the course of civilization for a century to come. The problem to-day is: "Can we on our side achieve cooperative action by common consent? Can we do it in the war? Can we do it in the peace that follows?"

The answer, the only possible hopeful answer, lies in the fullness of education, in the development of education to the point that you have visualized in your particular field, but education which comprehends the entire picture of man's life and his relations to the international environment, the world in which he lives. You can truly feel you are doing your part, and you, with leaders in other fields, must go on with the type of education that gives a sense of the fullness of personal health and the fullness of communal cooperative living, not just as an idea, a phrase, but actually as a compelling force in the governance of the motivation of mankind.

NICHOLAS COPERNICUS

THE FATHER OF MODERN ASTRONOMY 1543–1943

By STEPHEN P. MIZWA

SECRETARY OF THE KOSCIUSZKO FOUNDATION AND OF THE COPERNICAN QUADRICENTENNIAL NATIONAL COMMITTEE

ON May 24, 1943, the civilized world—or whatever remains of it—will commemorate the four hundredth anniversary of the death of Nicholas Copernicus, the great Polish astronomer, whose immortal work "De Revolutionibus Orbium Coelestium" revolutionized man's outlook upon the universe.

At the initiative of the Kosciuszko Foundation, which, since 1925, has endeavored to promote cultural relationships between Poland and America, one of the greatest scientific tributes in history is being planned throughout the United States for May 24th, when hundreds of American universities, colleges, private schools and technical institutions will join the Foundation in paying tribute to one of the truly great geniuses of the world. Most of the Canadian colleges and universities and the Royal Astronomical Society of Canada are making similar plans. Appropriately enough in Latin America the initiative was taken by the oldest university on the American continent, that of San Marco in Lima, Peru, which was established in 1551. The New York Public Library, the Library of Yale University and many other scientific and public libraries all over the country are making plans to place in special exhibitions old editions of Copernicus's works and many rare and interesting items pertaining to the great astronomer. These Copernicana exhibition plans have already revealed that there are several copies in the United States, and at least one in Canada, of the first (1543) edition of "De Revolutionibus," the first copy of which its creator beheld on his deathbed on the very last day of his mortal journey. Several of our planetaria are planning special programs for the month of May, demonstrating and explaining the pre-Copernican and the Copernican systems of the universe. At Carnegie Hall in New York, on May 24th, there will be held a meeting in tribute to Copernicus under the auspices of the Copernican Quadricentennial National Committee, headed by Professor Harlow Shapley of Harvard as chairman, whose membership will include distinguished scientists, representatives of the leading learned societies and research institutions, higher institutions of learning and representative Americans.

"Why stop to pay tributes to anybody in times like these, when we are waging a war of the survival?" "What did Copernicus do?" "Who was Copernicus, anyway?" These questions are not intended as an insult to the intelligence of the readers of this journal. They are simply pegs on which to hang one's thoughts. And they are not impertinent, either. They have been raised even by intelligent people. Within one week the present writer met three college graduates whose liberal education was deficient at least in one respect. One frankly admitted he never heard of Copernicus. Another thought that he (*i.e.*, Copernicus and not the college graduate) had something to do with the moon. And the third was sure that judging by the sound of the name, Copernicus must have certainly been a Greek philosopher.

At any rate, who was he and what did he do to deserve such a national tribute as is being planned even in times like these? The answer implies deeper significance than mere recognition of a great scientific genius. It is not alone the transcendent mind of Copernicus the scientist that stirs one's imagination; it is also his heart, the sum total of his interests and his manner of doing things that commend him to our attention, even in times of turmoil like these. He also lived in an age of mental revolution, of spiritual conflicts and of political turmoil. He took active part in the political turmoil, withstood the pressure of spiritual conflicts, and out of the mental revolution he brought us a new conception of the place of this homely planet of ours in the celestial scheme of things. Like the mythical Prometheus, who stole the fire from selfish pagan gods by holding a rod close to the sun, Copernicus snatched a big chunk of truth—to use the college vernacular—from the bosom of stubborn nature which zealously guards her secrets from inquisitive man.

As astronomer and mathematician, for he is generally known as that, he did have "something to do with the moon." But he did more than that. Whether speaking jovially or contemptuously, Martin Luther referred to Copernicus as that "fool who would overturn the whole science of astronomy." That is just exactly what he did. He rebuilt the whole science of astronomy on an inverted order; he bade the sun to stand still and set the earth in motion, set it on its eternal course around the sun. Of course, like Monsieur Jardin who spoke prose all his life without knowing it, the earth was always coursing around the sun; but for centuries laymen and learned men spoke poetry when they maintained the geocentric theory that the earth—whether flat or spherical—was the center of the universe and it was the sun that moved around. By reversing the process Copernicus created the so-called heliocentric (with the sun as the center) law of planetary motions.

This is easier said than done. It took more than daring intellectual courage and fantastic imagination to essay the heights of heavens. It took tact and spiritual courage to maintain his views not as a hypothesis, useful for astronomical calculations though not necessarily true, as some of his friends advised him to do, but as an established scientific truth. By his tenacity he loosened the grip of the dead hand of authority—authority of accumulated scientific and church dogmas, authority of all his learned predecessors and contemporaries, authority of the sense of vision, authority of the stubborn pride of man who, in the geocentric system, saw himself as ruler over the entire center of the universe. According to the Copernican conception, man became just a speck of dust clinging tenaciously for his dear life, on the surface of the earth as it majestically swings around

the sun. Yes, Copernicus showed tact when he dedicated his great treatise to Pope Paul III and pleaded that he also be given the freedom of scientific inquiry—to follow the truth wherever it may lead. In paying tribute to Copernicus of four hundred years ago, the scientific word of to-day reaffirms its own faith in the dignity of free scientific inquiry, which has practically always been the transatlantic American charter. Why do we stop to honor Copernicus to-day? Because his words of courage and his message to the contemporary scientific world are as modern as to-morrow.

But Copernicus was more than a scientist. He was a churchman, a painter and a poet, a physician, an economist, a statesman and a soldier. He was not fully ordained a priest as some people erroneously believe; he had only minor orders. In the church hierarchy he was a canon, charged with the duty of administering church property in the duchy-bishopric of Varmia, the then Polish province but after the first partition of Poland in 1772 incorporated in East Prussia. In his varied career he painted his own portrait. The original, unfortunately, has not been preserved. We know it only from the copy that was produced in the sixteenth century and later reproduced on the astronomical clock tower of the Cathedral of Strasbourg. His first published book, in 1509, revealed him as a poet and incipient man of letters. It was a translation of the epistles of a secondary Greek writer, Theophylact. As a physician he would have made a much greater reputation than that of a poet if astronomy had not absorbed his interest in mature years. Such reputation concerning his medical profession as has come down to us has been clothed more in the garb of philanthropy rather than that of professional shrewdness. Although not infrequently called to the bedside of the influential and the affluent, including ruling princes, in his capacity as physician he is best known by his gratuitous ministrations to the poor. He was also an economist. Called by the Polish king, Sigismund I, to help reform the currency system in the northwestern Polish provinces, Copernicus formulated the monetary law of "good and bad money," which through historical error was ascribed to Gresham and the principle became known as Gresham's Law. Copernicus formulated this law at least 22 years before Sir Thomas Gresham.

And, among his multifarious activities, Copernicus was a statesman and once even a soldier. All his life he was an inveterate enemy of the Knights of the Teutonic Order, whose possessions—East Prussia, then Fief of Poland—surrounded the province of Varmia on three sides. This order, then headed by Albert of Hohenzollern, was the direct predecessor of the present widely heralded Teutonic New Order of Europe, introduced or revived by a formerly much-heard-of Austrian corporal. The former Teutonic Order knew all the tricks of fifth-column work; it tried to create dissensions and foment disorders in the neighboring Polish provinces. Several letters of complaint to the king of Poland, drawn up by the pen of Copernicus on behalf of the bishopric of Varmia, have come down to us. Without mincing words, Copernicus called them "thieves and robbers." While on his business visit to the city of Olsztyn (Allenstein), which was surrounded by armed forces of the Teutonic Order, Copernicus assumed the function of commander in chief.

And now, while the descendants of the Knights of the Teutonic Order have closed the University of Krakow, the alma mater of Copernicus, have imprisoned most of its professors and murdered others, and are trying to destroy all visible monuments of Polish culture, a tribute to Copernicus will give the still surviving Polish scholars and the gallant Polish nation courage to endure.

OBITUARY

HARRY HAMILTON LAUGHLIN

DR. HARRY HAMILTON LAUGHLIN, son of George Hamilton Laughlin, one-time president of Hiram College, was born in Oskaloosa, Iowa, in 1880. He was graduated Sc.D. from Princeton and was given an honorary M.D. degree by the University of Heidelberg. At the age of twenty years he was principal of the Kirksville (Mo.) high school and later teacher of agriculture at the North Missouri State Normal School. At the foundation of the Eugenics Record Office by Mrs. E. H. Harriman in 1910 he was put in immediate charge of its administration, until in 1921 it was incorporated in the Department of Genetics, with him as assistant director.

He early showed a special interest in the application of the principles of human heredity to human affairs. As an expert for the Committee on Immigration and Naturalization of the House of Representatives he played an important part in securing the quota system of limited immigration into the United States from the Old World; and in 1923 he was sent by the Department of Labor to observe and advise concerning the operations of immigration selection in Europe. He was appointed a member of the Permanent Emigration Committee of the International Labor Office of the League of Nations. Later he worked especially on the topic of sterilization as a eugenical measure and published the stand-