

"Mathematics Their Theme."

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This article is a report on the 7 April 1894 meeting of the New York Mathematical Society at which Peirce exhibited an arithmetic by Rolandus (dated 1424). A translation (presumably by Peirce) of Rolandus' dedicatory letter is given in this article. Cited also in Bulletin of the New York Mathematical Society, 3(May 1894), 199-200.

MATHEMATICS THEIR THEME

IS A POUND A QUANTITY OF
MATTER OR IS IT A FORCE?

Prof. Woolsey Johnson's Interesting Lecture Before the New-York Mathematical Society--A Rare Manuscript Exhibited by C.S. Peirce--Its Curious Dedication--Society Proposes to Organize a General Session to be Held During the Summer.

At a meeting of the New-York Mathematical Society, held yesterday afternoon in Hamilton Hall, Columbia College, two very interesting papers on mathematical subjects were presented. The first, read by Prof. Woolsey Johnson, was entitled, "Gravitation and Absolute Units of Force."

The vexed question between absolute and gravitational units was warmly discussed. Is a pound a quantity of matter, or is it a force? Prof. Johnson referred to those who will have it a quantity of matter as "doctrinaries." The "practical men" call the work of raising a pound a foot a "foot pound": the "doctrinaries" want to call it a "foot-pound weight," because it is considerably different in different latitudes. The "practical" men say a pound is a unit of weight, the "doctrinaries" say it is a unit of "mass," or quantity of matter. In England there are two pounds; one is defined as equal to a certain piece of platinum; that, then, is a quantity of matter. The other is the weight of a certain piece of brass, "weighed in air." That, then, is a force. The conclusion reached was that the simple way is to call the quantity of matter a pound, and the force with which it bears down to the earth, a pound weight.

C. S. Peirce exhibited the manuscript of an extensive work on arithmetic from the valuable collection of George A. Plimpton. It was written in Latin, in the year 1424, and has been entirely

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unknown to the historians of mathematics. It was written at the command of John of Lancaster, Duke of Bedford, son of Henry IV. of England, who, after the death of his brother, Henry V., and during the minority of his nephew, Henry VI., was made Protector of England and Regent of France. He was not only one of the most sagacious and virtuous of rulers, but also a man of learning.

In August, 1423, was issued an ordinance for the restoration of studies in the University of Paris, which had shrunk almost to nothing during the wars. It was particularly desired that the studies of logic and of theology, which had been almost exclusively cultivated at that celebrated seat of learning, should make way for a certain amount of mathematics.

The preparation of this textbook of arithmetic, now brought to light, was intrusted to a certain Portuguese physician, Rollandus, who was a minor canon of the Sainte Chapelle, which every tourist remembers, opposite the Louvre.

It is evident from the words of the dedication that the work must have been completed before the great battle of Ivry, Aug. 14, 1424. John himself, according to the preface, took an active part in the preparation of the book, directing what should be included and what excluded. The result was a treatise much superior to any other of the same age; but it was probably found too difficult for the students, since it has fallen completely into oblivion, so much so that not a single copy except that of Mr. Plimpton has ever been brought to notice. The dedication is something of a curiosity. It reads as follows:

To the most illustrious and most serene Prince, the most dread lord, the Lord John, paternal uncle of our lord the King of France and England, Regent of the realm of France, Duke of Bedford, Rollando of Lisbon, physician to the writer of your Highness, has written, in fulfillment of his oath.

Most famous Prince, under whose happy dukedom all France happily increases with a certain high consent of the people, as beseems a Prince ruling righteously, in you charity burns within, piety gleams without, and science sheds its rays both ways. Who purer in feeling? Who more abundant in well-doing? Who more certain in clearness of counsel? I say, weighing my meaning, that you spend your treasures as you might scatter ashes. You immolate yourself as a sacrifice in incessant labors. In order that you might prepare peace for the subjects of our lord the King of France and England and might as Duke lead the realm of France far from the storms of war, by a divine arrangement you were deputed to the rule of the realm, to the general satisfaction, at a time when all hope of human counsel had failed. Nor has any lapse of human faith leavened your most dread dominion. * * * It is to be hoped that by your rule of peace the realms of France and England may receive their liberty. It certainly has deserved such results.

Let France, then, leap for joy; let England hold high festival; let Normandy be glad; let all Gaul sing psalms, because it receives, by the good providence of God, that Governor who lightens everybody's burdens and succors his needs. Such things,

certainly, the dewy emotion of your piety merits, that under the shade of your rule the thirsty may drain the waters of the sciences. Those who even now, under the security of that rule, are crowding from all quarters into the noble University of Paris to preach, methinks, the greatness of your glorious idea that the sounds of the shouters are re-echoed to your Highness from the uttermost distances of the earth.

Now, everywhere men of letters are hastening to come and drink abounding cups. You have raised philosophy from the dust, which used to mourn in the poverty of its beggarhood. Now mathematics rises up before the gaze of your Serenity with unveiled face, which, in her straitened circumstances, she, from bashfulness, had covered with her cloak. She, tender, modest, girdled, and frisky, had preferred a bruised side to entering presently the University of Paris without a safe-conduct. Then, to you she came in confidence. Now she returns joyful, since she sees herself summoned, not as to an alien's domicile, but to her own home. But since the study of philosophy is forced to take up the natures of numbers and curious investigations into natural things, on this account it has pleased your Highness to enjoin and command me, although unworthy and insufficient, to collect in one volume both the theoretical and the practical parts of that art of Arismetick, by gathering the dicta both of the ancients and of the moderns.

Surely, dread lord, although my slender learning cannot rightly fulfill this mandate as is fitting for so great a science, yet, because I can truly say that by the grace of my lord, the Lord Regent, I am what I am, and lest the grace of so great a lord should remain unrequited for the benefit I have received of a prebend from the chapel of the royal palace of Paris, now solicitous to offer what good-will I can to the honor of your Majesty, especially since you have promised your aid, and insist on my performance of the task, I feel the great part you have in it. So that, if it contains anything blameworthy, you have to acknowledge it no less for yourself than for me; for you knew to whom you assigned the charge. Again, if it contains anything useful, to you that also is to be ascribed. For the possession is yours, and the work is yours. What Arismeticians have thought, I quote as much as I can by faithfully compiling and by submitting myself to the correction of your Highness.

And if any persons would have wished to backbite me, first in their demonstrations let them backbite Euclid, Baccius, (Leonardo filius Bonacci,) Campanus, and Jordanus, (Nemorarius.) The conclusions of the irrefragable demonstrations of these doctors are fundamentally solid, so as not to carry the impression of a biting tooth, though it had an adamantine hardness. *** Let the critic, then, embrace what is bitten, at least from the impossibility of that effect, though he be not used to embrace it for the effect of truth. And let him study to offer to your Highness greater things, since in treasures of philosophy he calls himself the richer. Of what sort then this work be, and what its utility for thinking men, it is now time to see.

There were about thirty members of the society present. After

the reading of the papers, it was proposed that the society organize a general session, extending over several days, to be held during the Summer vacation. Such a meeting will be held this year in Brooklyn on Aug. 20, 21, and 22.

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