Codex L. VI. 45 29r–29v della Biblioteca Comunale di Siena

Filippo Calandri (b. circa 1467)*

Composed circa 1500

Introduction

Calandri is the author of one of the earliest printed arithmetics, it being published at Florence in 1491. The title page bears the legend *Pictagoras arithmetrice introductor*.

⟨81v⟩ The second: that one takes in the matches which are to be made as many of the matches to be observed that each of them has to make of them in order to have the game. Whence that if the first has 4 matches there remains to him to make two matches in order to make the game; the second who has 3 matches there remains to him three matches to make and therefore the second has to endure one and one-half times the difficulty of the first and this is why the first will have to withdraw one and one-half times as much as the second: that each time the first withdraws 3 the second withdraws 2. Now one has to divide 120 S between the two, the first has to withdraw 3 and the second 2, I wish to know that which each will receive. And making it you will find that the first will have 72 S and the second 48 S; but because it is a game of chance one does not stand as guarantor that this is the precise truth.

⟨97v⟩ Three persons play with the crossbow for 3 Denier in such a way that the one who first has 3 hits in the target wins and obtains 3 Denier. And shooting with the crossbow the first has made 2, the second one, the third has no coups.

It happens by chance that one crossbow is broken and they are in accord that each takes that which comes to him. I wish to know how much each will receive: I say thus, that it is well from chance and that is taken in 2 ways. The one is to take that which they have done and the other is ⟨98r⟩ to take that which they have to do and that which is the better is not determined and this is why that of the two which one takes matters not.[1] Therefore we will take that which takes that which remains to do and we say thus:

*English paraphrase by Richard Pulskamp, Department of Mathematics, Xavier University, Cincinnati, OH. Created on January 31, 2009.

[1]Of these methods, the first is unsatisfactory in that the third player receives nothing. As to the second method, the three players lack, respectively, 1, 2 and 3 coups. The third has one and one-half times the difficulty of the second, the second twice the difficulty of the first. Therefore, if the first player should

how many coups at most will there be that those there are able to make? There will be 7 of them.[2]

Therefore if the first has two of them he has $\frac{2}{7}$ of the game and the second $\frac{1}{7}$ and between them two they have $\frac{3}{7}$, a part that one take out of 3 Denier and that one distributes to the first and to the second; next of the $\frac{4}{7}$ which remains each himself shares $\frac{1}{3}$ and you will find that the first will receive $1\frac{3}{7}$ and the second one and the third $\frac{4}{7}$.[3]

receive 6, the second receives 3, and the last but 2. Therefore we have the division as $\frac{6}{11}$, $\frac{3}{11}$ and $\frac{2}{11}$.

[2]If the game is won with three coups, it is clear that if each sustains 2 wins — in all 6, the next round will terminate the game.

[3]Clearly, Calandri has introduced yet a third method of division. This method does not make use of the notion of difficulty expressed in the first problem.