

# Professor Fred Schuh and his Puzzle/Game *UNICUM*

by Fred Horn

## A puzzle and a game by Fred Schuh

In all publications on Professor Fred Schuh there was only one game mentioned as a published game: *Ratio*, or “The Soldiers Game” as it was known in France, or *De Reus en de drie Dwerfen* (“The Giant and the three Dwarfs”) as Schuh named it in a book he published in 1943. See also the article on Schuh and his game *Ratio* in *The Quarterly* of Fall 2017 (1/3).



Figure 1. Cover of *Unicum*

But later in 2017 I found a puzzle/game called *Unicum*, which turned out to be a publication from the year 1946. It is a domino game and puzzle invented by Schuh, as Rob van Linden found out. As far as we know its existence is really a “unicum” = “unique (thing)” for we could not find another example or even a reference to this game.

## Game rules for the domino game

The rules are simple (see Figure 2). Play like domino with the red and green eyes, thus always laying red to red and green to green. This results in a straight row of pieces. The black eyes at the outside under and above the row are not used in the game.

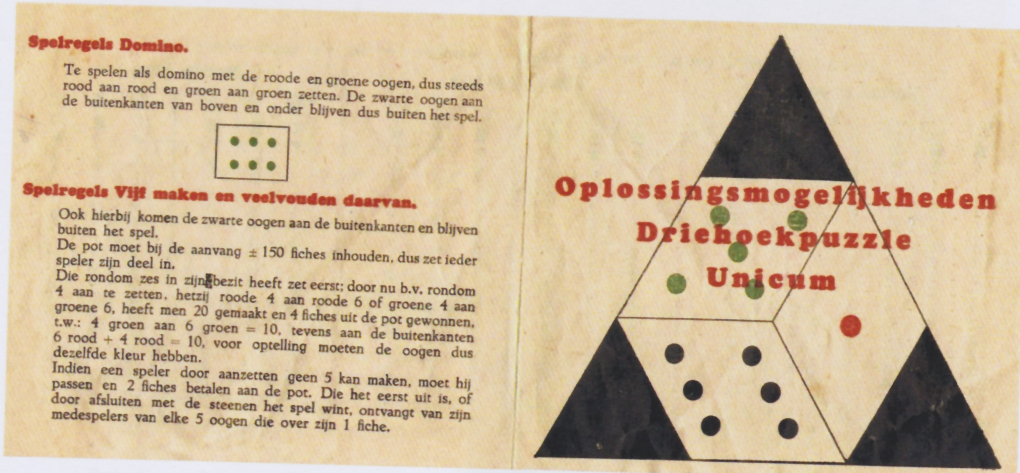


Figure 2. Game rules for the domino game (top left) and the making Five game (bottom left)

## Game rules for the making (multiples of) Five game

Again, the black eyes do come at the outside and stay out of the game. The 'pot' must be containing ca. 150 fiches, so all participants put in their share. Note that all triangles are dealt out between the players (F.H.).

The one who owns the triangle with all sixes starts by putting it down on the table in the middle (F.H.); then, when possible, having the right numbers (F.H.) continues by laying down a green 4 to the green 6 and a red 4 to the red 6 scoring 20 and winning four fiches out of the 'pot'. That is: 4 green to 6 green = 10, also at the outside 6 red to 4 red = 10, to add points, the eyes must have the same colour. Like the domino game, this results in a straight row of pieces.

When a player has no legal move (cannot place a triangle adding up to a multiple of 5), he has to pass and pays two fiches in the 'pot'. The first one without triangles or by blocking the possibilities (to lay down further triangles, F.H.) wins, he gets one fiche for every five eyes they still possess, from all other players.

Please note that these rules are not as clear as you could have expected from professor Schuh.

## The puzzle

The puzzle is easier to understand because at the flipside of the rule sheet (shown in Figure 3) the solutions are given. In the lid of the box on the inside one solution is printed, just to put the triangles in the correct way into the box (Figure 4).

Deze tabellen geven de omtrekken aan; in de driehoek dus steeds dezelfde kleuren en getallen tegen elkaar.

Eerste groep			Tweede groep			Derde groep		
linker-kant	rechter-kant	onder-kant	linker-kant	rechter-kant	onder-kant	linker-kant	rechter-kant	onder-kant
R	G	Z	R	G	Z	G	Z	R
•	•	•	•	•	•	•	•	•
1	- 1	- 1	4	- 1	- 4	4	- 1	- 4
2	- 2	- 2	4	- 2	- 3	4	- 2	- 3
3	- 3	- 5	4	- 3	- 2	4	- 3	- 2
4	- 4	- 4	4	- 4	- 1	4	- 4	- 1
5	- 5	- 3	4	- 5	- 6	4	- 5	- 6
6	- 6	- 2	4	- 6	- 5	4	- 6	- 5
1	- 1	- 6	5	- 1	- 3	5	- 1	- 3
2	- 2	- 5	5	- 2	- 2	5	- 2	- 2
3	- 3	- 4	5	- 3	- 1	5	- 3	- 1
4	- 4	- 3	5	- 4	- 6	5	- 4	- 6
5	- 5	- 2	5	- 5	- 5	5	- 5	- 5
6	- 6	- 1	5	- 6	- 4	5	- 6	- 4
1	- 1	- 5	6	- 1	- 2	6	- 1	- 2
2	- 2	- 4	6	- 2	- 1	6	- 2	- 1
3	- 3	- 3	6	- 3	- 6	6	- 3	- 6
4	- 4	- 2	6	- 4	- 5	6	- 4	- 5
5	- 5	- 1	6	- 5	- 4	6	- 5	- 4
6	- 6	- 6	6	- 6	- 3	6	- 6	- 3

Figure 3. Table of groups of three

**Remark by the CFF editor**

The 36 triangular pieces represent all ways that a red number (in the range 1..6) can, clock-wise, be followed by a green number in the same range, followed by a black number that is chosen such that the sum of the three numbers is a multiple of six.

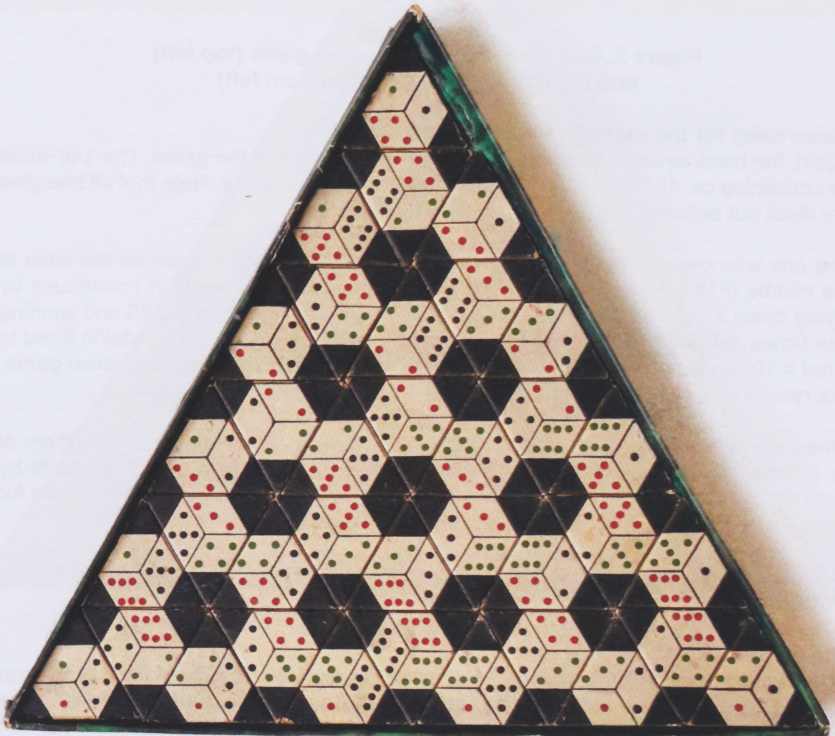


Figure 4. Packing solution

### Who was Schuh?

Schuh (Figure 5) was a very prolific writer of textbooks on mathematics and mechanics (in his lifetime he produced more than 30 titles, often as a number of books for one title). He was also editor and/or subscriber for a large number of magazines on those subject in the Netherlands.



Figure 5. Professor Fred Schuh

For example, as early as 1913, he started publishing in the, in that year founded, "Nieuw Tijdschrift voor Wiskunde" (New Magazine on Math) and delivered, besides tenths of articles, each year also the detailed solutions for the examinations of the teachers-training. In that respect he did not spare his criticism to the authors that phrased the questions. Often, he named a question "more of a puzzle than a questionnaire"!

Schuh was born on February 7, 1875 in Amsterdam; was married and had two sons and two daughters. He studied at the H.B.S. in Amsterdam, where he received a golden award for his answer in a mathematical contest. Going to the University in his hometown, he did promote "cum laude" in 1905. Becoming a teacher in Apeldoorn and Sneek, he soon was working at the Groningen University. In 1907 he was inaugurated as Professor at the "Technische Hoogeschool" (Technical University) in Delft until his given accorded emeritus status in 1945. In his private life Schuh was not a "dull" person. Many anecdotes exist about his "wild times", not sparing to mention the booze and also his fondness for women. He died in The Hague on January 6, 1966 (see the funeral announcement in Figure 6).



Heden overleed tot onze diepe droefheid onze lieve  
Vader, Grootvader, Overgrootvader en Huisgenoot,  
**prof. dr. Frederik Schuh,**  
oud-hoogleraar te Delft en Groningen,  
op de leeftijd van 90 jaar.  
Eindhoven: J. F. Schuh  
E. E. Schuh-Moreno Barranco  
's-Gravenhage: K. A. Schuh  
Hilversum: H. D. van Engel-Schuh  
A. C. van Koppel  
Amsterdam: C. Klint-Schuh  
I. Klint  
's-Gravenhage: Klein kinderen en achterkleinkind  
M. Oosterveer  
's-Gravenhage, 6 januari 1966.  
Van Boetzelaerlaan 28  
De bijzetting in het familiegraf op „Oud Elk-en-Du-  
nen“ zal plaatsvinden maandag 10 deser omstreeks  
11.30 uur.  
Vertrek van het sterfhuis om 11 uur.  
Algemene kennisgeving.



Figure 6. Funeral announcement of prof. dr. Frederik Schuh