Review of "Der Beweis"

by L. Wörl
(S. Fischer Verlag, Stockholm, 1943)

Jorge Luis Borges[1]

Ohne echtes Wissen, ist das Leben Tod

J. Kepler

How deep are the roots that bind a scientist to truth? This short novel (whose real author I suspect to be French, despite – or because of – the use of a certain florid German style) presents dual (shall I say, mirror?) aspects of this question.

We first encounter X (the only name used in the book). X is a brilliant mathematician. He is attuned to enthusiasm and to arrogance (the quiet disdain that she directs towards this man is the first indication that the author is a woman); but his talent (the reader is left to decide if it reaches genius) is made unmistakably clear. The year is 1935, the place Germany – X is a follower of a man whose name I will not spell.

That other man has become infatuated with problems of "pure" mathematics. Did the epithet "reine" suffice? Did some evil muse whisper in his hears of the towering achievements of Gauss, Riemann,

[1] This book review was scheduled to appear in the review *Sur*, Buenos Aires, in June 1944; it was replaced at the last minute by an account of the last news from Normandy; it appears here, in English translation, for the first time.

Dedekind, finest examples of aryanic insight? X has recently proudly proclaimed that he has found the clue to the proof of the famous Goldbach Conjecture; the dictator embraces in a fiery speech this forthcoming triumph of true German science.

Enters our second protagonist, Y. I believe that "he" is a representation of the author; I have said "he", although no indication of "his" sex appears in the text (I have read it twice, after my friend JF pointed this out to me). Through hints, details, which pattern times and places in the life of Y and that of E. Noether, we see that that following (or obeying, or mocking) an old tradition, a sharp-minded woman is at work here.

She presents Y as an equally passionnate mathematician; she describes in achingly beautiful words, void here of all unnecessary ornementation, his early delight in geometric puzzles, his student evenings spent in awe of the Basel formula, her struggles to read the French memoirs of Poincaré, the beauty and inner joy of the first theorem that is hers; but also her anguish when the little man reaches power, when T. Mann is exiled, her friends leaving – her teachers, so precious, following. And Y is also one of the few specialists of analytic number theory who have kept trying to understand Goldbach's Conjecture.

At first, Y will only compete fairly with X. Solving the problem would be a sign against fascism; a failure, and X's success, crowned with glory, will be sign of darkening skies, a temptation for others to follow the lure.

But X is also truly entranced by the Goldbach problem; by day, he stalks the last few remaining Jewish professors at the University of G

(those who are yet briefly, fatally, protected by service in the "Great" War); but every evening, every night to exhaustion, he is shut within his thinking unpoisoned mind, grasping towards a hint – it is not far; is it closer?

I cannot compliment this book more than by stating that the last chapter is as powerful as the first of "The Sound and the Fury". Y understands that he will not find a proof. After "Kristallnacht" – may its memory be erased, – Y decides that she has no other hope (or choice?) but to *write a wrong proof*.

The flaw must be slight, but deadly (the word occurs in the novel; we are left to wonder if the alternative was a murder). Y knows X (I believe that X is also a real person; I believe that losing him to darkness is one cause of Y's despair) and knows his weakness: he, who alone could find an error, will not read the paper until the end; he will forfeit if he is convinced that he has missed some simple idea. She switches the arguments in this binary problem – a simple sieve and a numerical computation lead to the Goldbach Problem (who will check that the value of this integral is less than $1/3$? shouldn't it necessarily be so?).

What remains afterwards? In the Epilogue, the dictator has found more victims. Y emigrates, taking a position at some unnamed institution in North America. X thinks of other problems, founding other theories. Among Y's papers, the confession of the mistake is already hidden.

I have shown this review to my friend JF, a mathematician; he has confirmed to me that the Goldbach Problem remains desperately unsolved; the nightmarish insight of Y borrows a genuine discovery of

H. Iwaniec, but it has not sufficed to bring a solution. E. Noether, the towering genius of abstract algebra, who founded algebraic topology, who probably taught Y, died in 1935 in exile during a routine operation. He has also told me that the name of the man who was truly X will (also) live forever, well beyond the acts that sullied his work; and I hope that Y, who is L. Wörl, somewhere, has found another love.

Translated, from the Spanish, by H.A.H.