HOUSE BILL NO. 246, INDIANA STATE LEGISLATURE, 1897

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This paper has grown out of a number of requests for information over a number of years, by students and others, concerning some supposed action taken by the Indiana State Legislature with regard to fixing the value of *pi*, that is, the result of dividing the length of the circumference of a circle by the length of its diameter, at a certain value that was different from the true value. Of course the interest in and wonder at such an action lies in the presumption of a group of supposedly fairly well educated men to attempt to legislate upon something not in the realm of legislation.

The only reference to this action known to me until recently was an article by Professor C. A. Waldo in the Proceedings of the Academy for 1916. Professor Waldo was a member of the mathematics department at Purdue at the time the action was taken, but he was professor of mathematics at Washington University at St. Louis when he wrote the article. His article is merely a running account based on memory, and unfortunately there are several errors. The date of the action is given as 1899, and the description of the progress of the bill is inaccurate and somewhat misleading, as might be expected in a memory account written twenty years later, probably without any special check being made as to the facts. The error in the date caused me to spend many futile hours searching through the House and Senate Journals for 1899 for some record of the action.

However, during the past summer there appeared in the Contributors' Club of the July, 1935, number of The Atlantic Monthly an article by Professor Thomas F. Holgate, of Northwestern University, entitled "Rules for Making Pi Digestible", in which a statement of House Bill No. 246 was given, together with the correct date 1897. Armed with this information I have attempted to ascertain the facts as to the inception of the bill, its author, the history of the bill in the Legislature, and the atmosphere surrounding it during the successive steps of its progress through the legislative mill. The facts which I present here have been secured from the bill itself, on file in the Indiana State Library, the Journals of the House and Senate for 1897, and the files of the three Indianapolis papers for January and February, 1897. My purpose in presenting this paper is to have on record in an accessible place the facts concerning this most interesting piece of attempted legislation. The drawing of morals I leave to others.

The author of the bill was Edwin J. Goodwin, M. D., of Solitude, Posey County. The bill was introduced in the House by Mr. Taylor I. Record, Representative from Posey County, on January 18, 1897. In the Indiana Historical Library may be seen the handwritten copy together with a typewritten copy of the bill, and a handwritten record of actions taken by the Legislature. Some one has written on the page containing the record of the actions the following: "Dr. E. J. Goodman, No. 72 Ohio Street—Author". However, this is in error, for the author was Dr. E. J. Goodwin. Following is a copy of the bill:

HOUSE BILL NO. 246

A bill for an act introducing a new mathematical truth and offered as a contribution to education to be used only by the State of Indiana free of cost by paying any royalties whatever on the same, provided it is accepted and adopted by the official action of the legislature of 1897.

Section 1. Be it enacted by the General Assembly of the State of Indiana: It has been found that a circular area is to the square on a line equal to the quadrant of the circumference, as the area of an equilateral rectangle is to the square on one side. The diameter employed as the linear unit according to the present rule in computing the circle's area is entirely wrong, as it represents the circle's area one and one-fifth times the area of a square whose perimeter is equal to the circumference of the circle. This is because one-fifth of the diameter fails to be represented four times in the circle's circumference. For example: if we multiply the perimeter of a square by one-fourth of any line one-fifth greater than one side, we can in like manner make the square's area to appear one fifth greater than the fact, as is done by taking the diameter for the linear unit instead of the quadrant of the circle's circumference.

Section 2. It is impossible to compute the area of a circle on the diameter as the linear unit without tresspassing upon the area outside of the circle to the extent of including one-fifth more area than is contained within the circle's circumference, because the square on the diameter produces the side of a square which equals nine when the arc of ninety degrees equals eight. By taking the quadrant of the circle's circumference for the linear unit, we fulfill the requirements of both quadrature and rectification of the circle's circumference. Furthermore, it has revealed the ratio of the chord and arc of ninety degrees, which is as seven to eight, and also the ratio of the diagonal and one side of a square which is as ten to seven, disclosing the fourth important fact, that the ratio of the diameter and circumference is as five-fourths to four; and because of these facts and the futher fact that the rule in present use fails to work both ways mathematically, it should be discarded as wholly wanting and misleading in its practical applications.

Section 3. In further proof of the value of the author's proposed contribution to education, and offered as a gift to the State of Indiana, is the fact of his solutions of the trisection of the angle, duplication of the cube and quadrature of the circle having been already accepted as contributions to science by the American Mathematical Monthly, the leading exponent of mathematical thought in this country. And be it remembered that these noted problems had been long since given up by scientific bodies as unsolvable mysteries and above man's ability to comprehend.

Following the introduction of the bill it was referred to the House Committee on Canals. Just why it should be referred to this committee, frequently called the Committee on Swamp Lands, is difficult to understand. The following items appeared in the newspapers on January 19, 1897, under the heading of New House Bills:

H.B. 246. By Mr. Ricard: Bill telling how to "square a circle". Swamp Lands.[1]
Mr. Recard, H.B. 246—Bill telling how to "square a circle". Swamp Lands.[2]

On January 19, 1897, Representative M. B. Butler, of Steuben County, chairman of the Committee on Canals, submitted the following report:

Your Committee on Canals, to which was referred House Bill No. 246, entitled a bill for an act entitled an act for the introduction of a mathematical truth, etc., has had the same under consideration and begs leave to report the same back to the House with the recommendation that said bill be referred to the Committee on Education.[3]

The bill was accordingly referred to the Committee on Education.

[1]The Indianapolis Journal, January 19, 1897, p. 3, col. 4.
[2]The Indianapolis Sentinel, January 19, 1897, p. 2, col. 3.
[3]House Journal, 1897, p. 213.

On January 20, 1897, the following appeared in The Indianapolis Sentinel:

TO SQUARE THE CIRCLE

Claims Made That This Old Problem Has Been Solved.

The bill telling how to square a circle, introduced in the House by Mr. Record, is not intended to be a hoax. Mr. Record knows nothing of the bill with the exception that he introduced it by request of Dr. Edwin Goodwin of Posey County, who is the author of the demonstration. The latter and State Superintendent of Public Instruction Geeting believe that it is the long-sought solution of the problem, and they are seeking to have it adopted by the legislature. Dr. Goodwin, the author, is a mathematician of note. He has it copyrighted and his proposition is that if the legislature will indorse the solution he will allow the state to use the demonstration in its textbooks free of charge. The author is lobbying for the bill.[4]

The records concerning the bill in the Committee on Education, as given in the House Journal, are somewhat confused. In the Calendar of House Bills Introduced and Action Thereon, the record reads

Referred back February 2 and
Recommitted to the same committee
Reported back February 4.[5]

In the House Journal proper, however, one finds under the date of February 2, 1897, that Representative S. E. Nicholson, of Howard County, chairman of the Committee on Education, reported to the House.

Your Committee on Education, to which was referred House Bill No. 246, entitled a bill for an act entitled an act introducing a new mathematical truth, has had same under consideration, and begs leave to report the same back to the House with the recommendation that said bill do pass.[6]

The report was concurred in, and on February 5, 1897, it was brought up for the second reading, following which it was considered engrossed. Then "Mr. Nicholson moved that the constitutional rule requiring bills to be read on three days be suspended, that the bill may be read a third time now".[7] The constitutional rule was suspended by a vote of 72 to 0 and the bill was then read a third time. It was passed by a vote of 67 to 0, and the Clerk of the House was directed to inform the Senate of the passage of the bill.

After the bill had passed the House the Indianapolis papers reported on it as follows:

NEW MATHEMATICAL TRUTH

Mr. Record's bill "introducing a new mathematical truth", was passed under a suspension of the constitutional rule.[8]

DR. GOODWIN'S THEAOREM

Resolution Adopted by the House of Representatives.

Following is the text of the resolution adopted by the House relative to the mathematical theorem of E. J. Goodwin, M.D., Solitude, Posey County. Whereas, it has been found (The remainder of Section 1 and all of Section 2 is printed).[9]

[4]The Indianapolis Sentinel, January 20, 1897, p. 5, col. 4.
[5]House Journal, 1897, Appendix, p. 183.
[6]House Journal, 1897, p. 489.
[7]House Journal, 1897, p. 588.
[8]The Indianapolis News, February 5, 1897, p. 2, col. 3.
[9]The Indianapolis News, February 6, 1897, p. 11, col. 4.

NO OPPOSITION TO IT

The bill introduced by Mr. Record telling how to "square the circle" was unanimously passed by the house yesterday afternoon. It indorses a mathematical demonstration of which Dr. Edwin Goodwin of Posey County is author.[10]

MATHEMATICAL BILL PASSED

Record's bill containing the discovery of Dr. Goodwin, of Posey County, for computing the area of a circle, was handed down upon second reading. Mr. Nicholson explained that Dr. Goodwin had a copyright on his discovery and had offered this bill in order that it might be free to the schools of Indiana. The bill was taken up and passed under suspension of rules. This is the strangest bill that has ever passed an Indiana Assembly. It reads as follows (The whole bill as given at the beginning of this paper is then printed).[11]

The contents of the bill thus became known in this and other states and, of course, became the target for ridicule. However, let us follow the progress of the bill.

Engrossed House Bill No. 246 was referred to the Senate on February 10, 1897, and was read for the first time on February 11 and referred to the Committee on Temperance. One wonders whether this was done intentionally, for certainly the bill could have been referred to no committee more appropriately named. On February 12 Senator Harry S. New, of Marion County, Chairman of the Committee on Temperance made the following report to the Senate:

Your Committee on Temperance, to which was referred House Bill No. 246, introduced by Mr. Record, has had the same under consideration, and begs leave to report the same back to the Senate with the recommendation that said bill do pass.[12]

On the afternoon of February 12 "Senator Bozeman called up House Bill No. 246. The bill was read a second time by title. Senator Hogate moved to amend the bill by striking out the enacting clause. The motion was lost. Senator Hubbell moved to postpone the further consideration of this bill indefinitely. Which motion prevailed."[13]

This cold recital of Senate action gives no clue as to how these actions were taken but the reports in the papers do, as follows:

House Bill 246, providing for the official adoption of the demonstration for squaring the circle, was killed.[14]

THE MATHEMATICAL BILL

Fun Making in the Senate Yesterday Afternoon—* * *

Representative Record's mathematical bill legalizing a formula for squaring the circle was brought up and made fun of. The Senators made bad puns about it, ridiculed it and laughed over it. The fun lasted half an hour. Senator Hubbell said that it was not meet for the Senate, which was costing the State $250 a day, to waste its time in such frivolity. He said that in reading the leading newspapers of Chicago and the East, he found that the Indiana State Legislature had laid itself open to ridicule by the action already taken on the bill. He thought consideration of such a proposition was not dignified or worthy of the Senate. He moved the indefinite postponement of the bill, and the motion carried.[15]

[10]The Indianapolis Sentinel, February 6, 1897, p. 2, col. 4.
[11]The Indianapolis Journal, February 6, 1897, p. 8, cols. 2, 3.
[12]Senate Journal, 1897, p. 649.
[13]Senate Journal, 1897, p. 677.
[14]The Indianapolis Sentinel, February 13, 1897, p. 2, col. 4.
[15]The Indianapolis News, February 13, 1897, p. 11, col. 3.

WORK OF THE SENATE

A lot of fun was had with Mr. Record's mathematical bill. It came from the House a few days ago and went to the committee on temperance. It was called up by Senator Bozeman. It was indefinitely postponed, as not being a subject for legislation. Senator Hubbell characterized the bill as utter folly. The Senate might as well try to legislate water to run up hill as to establish mathematical truth by law. Leading papers all over the country, he said, were ridiculing the Indiana Legislature. It was outrageous that the State of Indiana should pay $250 a day to have time wasted on such frivolous matters.

STRUCK A POPULAR CHORD

Senator Drummond did not want the rule suspended until he had some information as to the purpose of the bill.

"It may be I am densely ignorant on this question of Mathematics," he said. "Consent! Consent!" said Senator Ellison. There was loud laughter at this sally.

Although the bill was not acted on favorably no one who spoke against it intimated that there was anything wrong with the theories it advances. All of the senators who spoke on the bill admitted that they were ignorant of the merits of the proposition. It was simply regarded as not being a subject for legislation.[16]

Naturally the question arises as to what happened to bring about the defeat of this bill after it had passed the House, apparently had the backing of the State Superintendent of Education, was actively being lobbied for, and had passed the first reading in the Senate without comment. To answer this question one must read Professor Waldo's account.

As the session of the Legislature was drawing toward its close it chanced to be the duty of the writer to visit the State Capitol and make sure that the Academy appropriation was cared for. When admitted to the floor of the House, imagine his surprize when he discovered that he was in the midst of a debate upon a piece of mathematical legislation. An ex-teacher from the eastern part of the state was saying: "The case is perfectly simple. If we pass this bill which establishes a new and correct value for π, the author offers to our state without cost the use of his discovery and its free publication in our school text books, while everyone else must pay him a royalty." The roll was then called and the bill passed its third and final reading in the lower house. A member then showed the writer a copy of the bill just passed and asked him if he would like an introduction to the learned doctor, its author. He declined the courtesy with thanks remarking that he was acquainted with as many crazy people as he cared to know.

That evening the senators were properly coached and shortly thereafter as it came to its final reading in the upper house they threw out with much merriment the epoch making discovery of the Wise Man from the Pocket.[17]

[16]The Indianapolis Journal, February 13, 1897, p. 3, cols. 4, 5.
[17]Proceedings of the Indiana Academy of Science 1916:445-446. 1917.