

J. W. T. Youngs, Mathematics



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Professor

J. W. T. Youngs was born in Bilaspur, India, and educated at Wheaton College and Ohio State University, where he received a doctorate in 1934. He taught at Ohio State, Purdue, and Indiana University, where he received a doctorate in 1934. He was at Indiana for eighteen years as a member of the mathematics faculty, and served as chairman of the department for the last eight of them. In addition to spending some time with the United States Air Force during the Second World War, he was a Guggenheim Fellow, and a consultant to Sandia, Rand, and the Institute for Defense Analysis. He edited several mathematical journals and was a Trustee of the Carver Research Foundation Institute at Tuskegee.

In 1964 Mr. Youngs came to Santa Cruz, as one of the first of the faculty appointed by the Chancellor, Dean McHenry. Besides devoting himself to building up the faculty in mathematics at UCSC, he served as Chairman of the Academic Senate and on several University committees of considerable importance. Professor Youngs initiated a course at Santa Cruz on "The Nature of Mathematics," designed originally for students who were not planning to major in mathematics and who had no great background in the subject. His catalog description of that course may give a hint of his own intellectual style: "This course will be designed to introduce the student to the nature of mathematical thinking, and to reveal the grace inherent in the discipline, independent of its application to other fields. The course will involve discussion of a sequence of mathematical topics, each largely self-contained and chosen to illustrate the beauty of the subject." The J. W. T. Youngs Mathematics Prize is intended to encourage and sustain a concern for the grace and beauty of mathematics.

Cowell College Professor Nicholas Burgoyne writes of his work as a mathematician:

Ted's work and interests in mathematics covered a wide range and at best these few paragraphs can only touch on certain highlights.

From the time he was a student until this last summer he worked continuously in mathematics but his many published works reflect only a part of his contributions to the subject. He was particularly good at working together with others and as a young man was undoubtedly influenced by working alongside the famous

Hungarian, Tibor Rado. In later years many younger mathematicians in turn profited from working together with Ted.

When Ted was a student the subject of topology was just developing and showing its power to solve old questions. Many of the best mathematicians were drawn to it and it was natural that Ted should want to start his career in this active and competitive field. Though he obtained many important results in the succeeding years, his best work was concerned with the abstract concept of a surface. While, at first sight, it is perhaps intuitively clear what is meant by a surface, a deeper study soon shows that the question is subtle and anything but intuitive. In a series of papers in the late 1940s and early 1950s Ted completely settled the outstanding problems connected with this question.

Without doubt Ted's most famous work was on the old Heawood conjecture and its solution certainly gave him very great and well-deserved pleasure. The conjecture concerned an apparently simple problem in geometry about the chromatic number of surfaces of higher genus, and was first raised about 90 years ago, but the simplicity was deceptive and by 1960, when Ted first studied it, no solution had been found. It took about seven years of continuous work until Ted, working jointly with Gerhard Ringel, found the answer.

The solution which Ted and Ringel gave was long and exceedingly intricate, and during these last two years Ted's main task had been to clarify, explain and simplify this work. It is fair to say that his work on the Heawood conjecture will live beyond the span of all our lives and keep his name alive for many a generation of mathematicians.

To hold Professor Youngs' name in affectionate remembrance, Cowell College and the Santa Cruz campus have established annual Youngs Prizes in Mathematics. It is hoped that they will be an encouragement to students at Santa Cruz to share in "the excitement and elegance possible in mathematics."