

## Oughtred Society Members of the United States Offered a Diverse Program in Hosting IM 2011

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On Friday morning, September 23, Oughtred Society President Bob De Cesaris warmly welcomed all participants to IM 2011, at MIT, in Cambridge. Bob observed that this was the first international meeting to be hosted by the members from the United States. He went on to note that this year marked the 20<sup>th</sup> anniversary of the Oughtred Society and that the format of this international meeting would be a bit different than previous ones in that the best aspects of both the European and American meetings were being merged. Debbie Douglas, MIT Curator of Science and Technology, echoed Bob's welcome and expressed delight that MIT was able to participate in this first-ever U.S. sponsored international meeting of slide rule and mechanical calculating device collectors and historians and wished everyone an enjoyable and instructive three days. The event attracted over 50 registrants, a third of whom were from overseas.

The program included 14 paper presentations, seven on Friday and seven on Saturday, covering a diverse range of topics. The Proceedings are available for sale, either as a soft-cover bound book or on CDROM (contact Clark McCoy at [oughtredsociety@comcast.net](mailto:oughtredsociety@comcast.net) or visit the OS website). For the most part, authors adhered closely to the theme of the meeting "From the Old World to the New: European Roots of American Slide Rules."

- **Joe Pasquale** could not attend the meeting in person and presented his paper "Mathematical Foundations of the Slide Rule" using an electronic transcription.
- Similarly, **Klaus Kühn** found that he was unable to attend IM 2011 and had arranged for **Peter Holland** to present his paper, "German Roots of Some U.S. Tables of Logarithms." This informative paper emphasizing the contributions of Freiherr Baron von Vega and Johann Theodore (Jean) Peters. He noted that log tables of 100 or more decimal places had been produced!
- **Richard Smith Hughes'** paper, "The Peruvian-German Slide Rule Connection: The ARISTO Nr. 10065 System Gruter" described an unusual and versatile slide rule, pointing out that at least three figure accuracy for multiplication and division and four figure accuracy for logs and anti-logs are obtainable. Richard also discussed the instrument's special applications in land surveying.
- In his paper "Abaci in the Old World and the New", **David McFarland** covered abaci and related calculating aids from throughout history and focused on those in ancient Europe as well as those used by the Incans, Aztecs, and Mayans prior to the Spanish incursion.
- **Tom Wyman** entertained attendees with his paper "Brewing Beer and the Collection of Taxes", which explored the lore and the use of slide rules in producing and taxing beer and merchandising in England, and later in America.
- **Bob Otnes** added to what little is known of William Cox in his paper "William Cox and His Contributions to Keuffel & Esser and to Slide Rule Technology". Cox, an Englishman who came to America, was never a K&E employee but was critical in the development and promotion of K&E products.

- **David Rance** presented an in-depth paper on “The Unique Lawrence” in which he traced the history and defended the Lawrence slide rule that he compared to its “maligned” U.K. counterpart, the Unique slide rule.
- In his paper “Spiral Slide Rules Through the Centuries” that emphasized the meeting’s primary theme, **Ed Chamberlain** traced the roots of the spiral slide rule back to William Oughtred in the 1620’s and then described variations of spiral or “nested ring” slide rules over time, noting that they first appeared in the U.S. in 1900.
- **Peter Hopp** traced the history of 12 families of “Pocket Watch Slide Rules” produced from 1859 to 1950. Most appropriately, his book by the same title first appeared for sale at IM 2011, and was very well-received.
- **Clark McCoy** and **Frank Adorney** in “The K&E Hudson 8 Slide Rule” offered an inside story of a slide rule design project where the object was to simplify the scales so that the student could focus more readily on solving the problem at hand.
- In his paper “Load Adjustors: Getting the Weight and Balance Right” **Ronald van Riet** explained the value and use of load adjustors, the use of which began in the 1930’s and were produced by five makers, and have contributed immensely to aviation safety.
- **Jerry McCarthy** greatly entertained attendees with a short lesson in Danish as he described the use of his “Danish Pig-Feeding Slide Rule” in calculating the amount of feed a given number of pigs required and the farrowing and weaning dates for piglets.
- In their paper “Cones, Discs, Wheels, and Spheres for Area Integration from Bavaria to Boston and Beyond” **Stefan Dreschler** and **Barbara** Haeberlin traced the design and development of the planimeter and other mechanical integrating devices beginning in 1814.
- **Bob De Cesaris**, in his very comprehensive paper “The Fuller Calculator Revisited, Including the Very Short Life of the Fuller Small-Sized Calculator”, reviewed the history of the Fuller long scale slide rule from its beginnings in 1878 to 1900, which he classified as the end of the early production phase. He went on to describe and show several examples of the once mythical Fuller’s “Smaller Calculating Slide Rule”, which was both less accurate and less costly than the larger model.

In the course of the formal program, attendees were invited to offer show-and-tell commentaries on unusual slide rules of their choosing. Friday afternoon attendees visited the impressive collection of historical scientific instruments at the Harvard University Museum, where an early Oughtred circular rule was on open display. They returned to the MIT Museum to participate in the opening of the well-designed and informative slide rule display area.

The technical sessions closed with a panel discussion chaired by Debbie Douglas that offered panelists the opportunity to consider a number of provocative questions. Panelists Richard Hughes, Werner Rudowski, Nathan Zeldes, and Tom Wyman, joined by attendees, opined on such questions as “Mathematics has often been called the ‘Universal Language. Is this true?’”; “Can you envision a possible future role for mechanical calculators beyond collection and preservation?”; and “What is your favorite slide rule and why?”. In the view of this writer, the introduction of a panel discussion was an engaging initiative that should be considered as a program feature at future IM meetings.

The banquet dinner on the final evening of the conference was a festive affair with **Bob Koppany** and **David Rance** each receiving the OS Award for 2011 and **Bob Otnes** being honored as the first recipient of the newly created Robert K Otnes Award for Scholarly Achievement recognizing Bob's outstanding scholarship and intellectual support and encouragement that he has offered members of the Society over the last 20 years. (See the discussion of this event elsewhere in this publication. See the OS Awards section of the OS website.) A number of slide rules that had attracted special attention and had reached the established price minimum during the earlier auction were put aside and auctioned off during the dinner. Every registrant received a special IM 2011 keepsake -- a copy of the map attributed to Henry Briggs produced in 1620 while he was with the Virginia Company, showing California as a large island off the western coast of the New World, along with a short discussion of his involvement in this undertaking.

As the last order of business, President Bob De Cesaris presented to U.K. representative Peter Hopp the rotating drum or "perpetual trophy" that is passed along each year to the country sponsoring the following year's International Meeting – in this case IM 2012, which will be held at Bletchley Park (Station X) in Bletchley, Buckinghamshire, England, home of the WWII code breakers and to Colossus, the World's first Electronic Computer.

On Sunday morning all attendees had an outstanding opportunity to go behind-the-scenes at the MIT Museum to see and handle slide rules from the university's extensive K&E collection. Debbie Douglas and her museum associates graciously hosted this information-filled session and provided important points on proper storage and conservation of important historical items.

In conclusion, Oughtred Society members from the United States distinguished themselves in hosting their first IM meeting. Since the conclusion of the conference, the committee has received many notes of gratitude and congratulation for the outstanding proceedings, presentations, and museum tours. The program and agenda was deemed diverse, informative, and very memorable and the quick feedback highlights both an interested and very engaged audience. The many months of planning and effort that went into making IM 2011 a success was clearly evident and all of those involved with the Meeting and Proceedings Committees deserve a great deal of credit for a job very well done!