

A Day With Norman J. W. Thrower

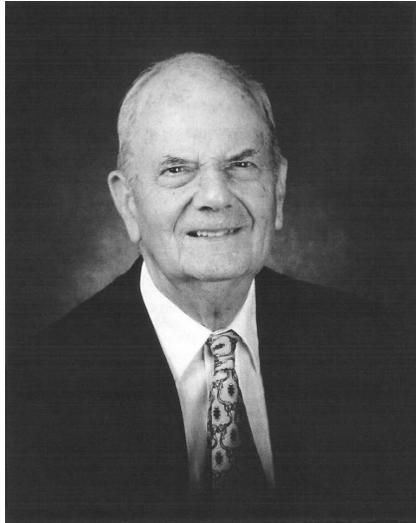


Figure 1. Norman J.W. Thrower, Courtesy Norman J.W. Thrower. (see page 76 for color version)

Author's note:

On June 9, 2006, I spent a day with Norman Thrower with the intent of interviewing him for an article tentatively titled, an Interview with Norman Thrower. We met in the UCLA Geography Department library, a congenial setting for Norman, surrounded by books, globes and other accouterments of academia. I was armed with a tape recorder and a list of apposite questions. However, as anyone who knows Norman Thrower well can attest, he is a raconteur and each question brought an answer and a story; I quickly realized that a simple Q&A article would not reveal nearly as much about Norman the cartographer, the scholar, the teacher, and the man, as a narrative that included the byways, de-

tours, and back roads. Our "interview" lasted four hours including lunch at the faculty club and a return to the library. Here then, rearranged for chronology, interwoven with snippets from previous conversations and Norman's autobiography, is "A Day with Norman J.W. Thrower."

In the 1950s several important cartographers formed the first cadre of academic cartographers. Among these were Arthur Robinson, George Jenks, and John Sherman in the United States, and Eduard Imhof in Switzerland. Another who received wartime training in cartography is Norman Thrower who is better known for his work in history of cartography and exploration than research in production cartography, although he was involved in both in a career that is now in its seventh decade.

WWII

Norman was born in Crowthorne, England, a Victorian "new town" in the Thames Valley in 1919. At an early age he showed a talent for art and won several prizes for his work; he attended art school and took some art classes at Reading University from prominent artists who lived in the Thames Valley including Robert Gibbings, a well-known graphic artist of the time. Norman says he would probably have become a commercial artist if WWII hadn't interfered. However, at age 21 he joined the British Army and was placed in an artillery regiment. On December 7, 1941 he was on a ship off the Cape of Good Hope headed for duty in North Africa. The bombing of Pearl Harbor resulted in the ship being diverted to India where his regiment would be decimated in the bloody campaign in Burma. Norman believes his ability to draw saved his life. During his artillery training he took and passed an examination for the Survey of India and was transferred from artillery to engineers for cartographic training. Instead of going to Burma, he was sent to the summer capital of the British Raj, Simla in the Himalayas.

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In the early days of the war, the Survey of India was still creating topographic maps by field surveys and printing them from flat lithographic stones. At about the time of Norman's arrival, photogrammetry was introduced to the Survey and printing was done by photo-lithography. Norman was trained in this technology and although the training was to prepare him to serve in field mapping units at the front, he was instead sent to Delhi and later Murree, now in Pakistan, where he was employed in mapping and instructional projects. At the end of the war, Norman returned to England with four years of cartography and photogrammetry behind him and joined the Directorate of Colonial Surveys (later the Directorate of Overseas Surveys) located in Bushy Park near London where he worked on photogrammetric surveys of Gambia and Jamaica.

It was in England that he met his wife Betty, a nurse, who was an officer in the United States Women's Army Nurse Corps. Betty was a remarkable person in her own right; she had a BS in biology and an MS in nursing, unusual for a woman at that time. Although an American, Betty was the daughter of a medical doctor who was a medical missionary and spent her first fifteen years in India. They married in England and remained devoted partners for over 50 years until Betty's death. Norman credits Betty's support and good advice for many of his successes.

University of Virginia

Norman applied for a cartographic position at the recently founded Geographical Institute at the University of Virginia 1947. His work with the Institute gave him degree credit for certain projects and also allowed him to meet and work with a number of prominent cartographers of the time. Among those were Count Geza Teleki (son of Count Paul Teleki, former Prime Minister of Hungary and also a cartographer); Armin K. Lobeck, noted for his work on block diagrams and physiographic diagrams; and Richard Edes Harrison famous for his wartime maps in *Fortune Magazine*.



Figure 2. Norman Thrower in raconteur mode, June 9, 2006, Photo by Gerald E. Tyner. (see page 76 for color version)

The most important influence on Norman during his time at the University of Virginia was Erwin Raisz who left Harvard University when that Geography Department was eliminated. Norman considers him the greatest figure in academic cartography at that time. While at Virginia Norman also took classes in art including History of Art from John Canada, a well known art critic who wrote for the New York Times. Norman received an honors BA in Geography and wrote his BA thesis on block diagrams. In later years, students in his Advanced Cartography classes, struggling to create their own block diagrams with T-square, triangle and other tools, would watch in awe as Norman would create magnificent renderings on the blackboard with only a piece of chalk. Figure 3 is an

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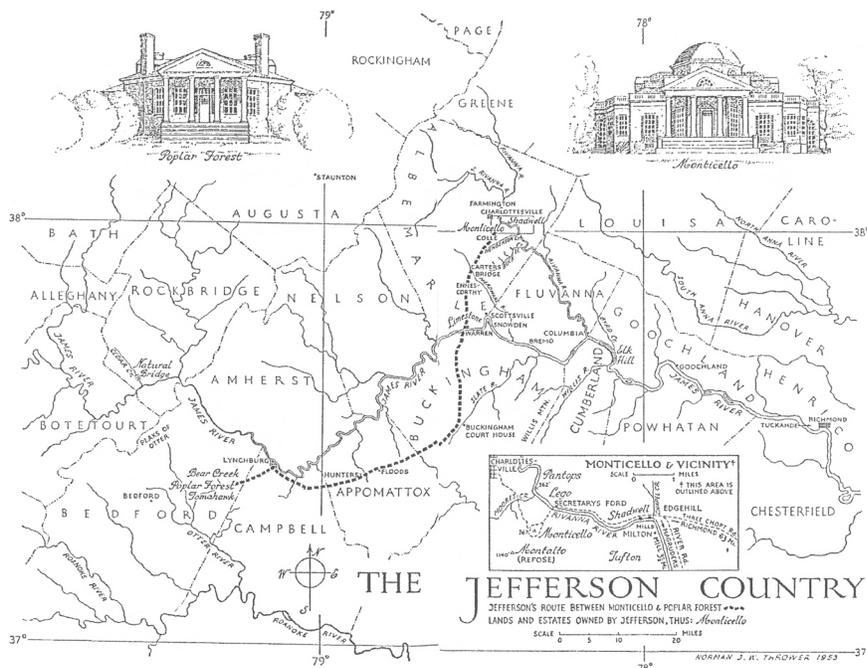


Figure 3. Jefferson Country, Courtesy Norman J.W. Thrower.

example of Norman's cartography during the Virginia years and demonstrates his artistic ability as well.

While at Virginia, Norman and Betty's first two daughters, Page and Anne were born and the young family lived in temporary student housing. A third daughter, Mary, was born after Norman and Betty arrived at UCLA.

University of Wisconsin

In 1953, Norman and his family moved to Madison, Wisconsin where he had been offered a 4-year graduate fellowship to work with Arthur Robinson, then an upcoming young professor. Norman was in Robinson's first group of Ph.D.s in the 1950s.

While Norman worked with many prominent cartographers including Erwin Raisz, he considers Robinson to be the biggest influence in his career. Robinson was, he said, a scientist, a deep thinker, and a decision maker. Robbie let Norman loose on projects and let him follow his own methods. He remembers Robbie advising him "This [the dissertation] is just an exercise, you don't stop here, you go on."

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While a graduate student at Madison, Norman worked on a variety of projects, some quite well known. Robinson had received a military contract to do a landform representation at topographic scale. Norman and Arthur based their work on that of Kitiro Tanaka and created a method called ‘traces of parallel inclined planes’ that creates a planimetrically correct, but artistic rendering of the landscape at scales of 1:62,500 and larger. Two joint articles resulted from this work (Robinson, 1957; 1969). Figure 4 is an example of the technique, drawn by Norman for the report.

Figure 5 is a less well-known example of Thrower’s cartography. Graduate students with the ability to draw maps in those “hand drawing days” were frequently employed making maps for faculty research and even dissertations by fellow students. Norman was asked to create this map for a general geography text, but knew he would not be credited for it in the book so he worked his name into the hachures (Finch, 1957). Later editions of the book give him credit in the caption.

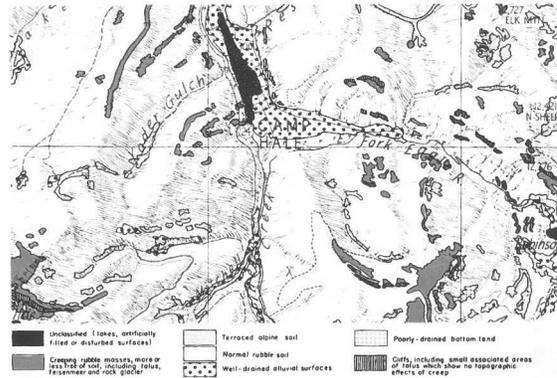
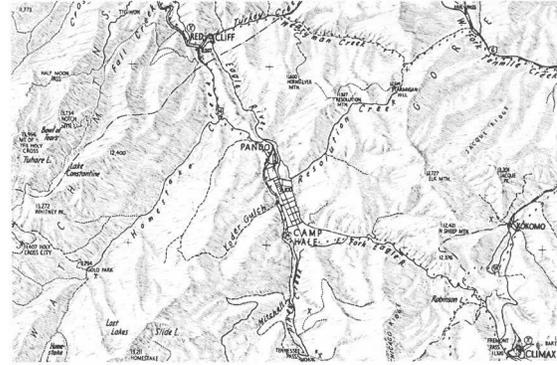


Figure 4. Camp Hale maps produced using parallel inclined traces for the United States Army, Courtesy Norman J.W. Thrower. (see page 76 for color version)

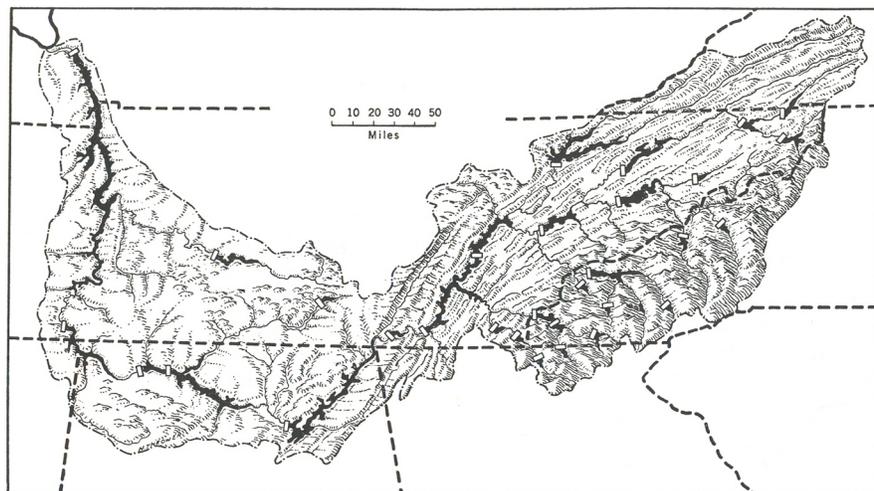


Figure 5. Tennessee Valley Map with “N Thrower” hidden in the terrain. In Finch, V. et al, 1957. Elements of Geography, New York: McGraw-Hill, 406. Reproduced with permission of McGraw-Hill Publishing Company.

Norman's dissertation was on cadastral mapping. When he first attempted to publish an article from his dissertation, the editor of a major geographical journal rejected the subject as of little interest and believed that the surveys were not accurate. His dissertation was later published by the Association of American Geographers as AAG Monograph number 4 (Thrower, 1966). Norman says he is still proudest of his work on American cadastral mapping, which he considers a much-neglected area. He notes that most of the work in this area has been done by researchers from outside the United States and speculates that Americans, having grown up with the PLSS simply don't find it unusual or worthy of study.

UCLA

In 1956, before his dissertation was complete, Norman met the Chair of the UCLA Geography Department, Henry Bruman, at a professional meeting, and Norman was persuaded to go to UCLA. UCLA enhanced the offer by providing the highest rank possible for a faculty member without a Ph.D.: Acting Assistant Professor, step 2. Norman came to UCLA in 1957, was quickly put on the regular track, and rose through the ranks. He eventually reached the highest rank possible at the time, Professor step eight, which is given only to those who have made significant contributions to their field.

In a special issue of *Cartography and Geographic Information Systems* (McMaster, 1991), UCLA was not a featured program. However, for a short period during the late 1950s and into early 70s the program had a 'golden age'. Norman and Richard Dahlberg, both trained by Robinson, joined the faculty, and Henry Leppard, who had retired from teaching, was producing the Goode's series of base maps in the Department. Students were offered a wide range of classes (which was novel for that time period), including beginning, intermediate and advanced cartography, remote sensing, and a variety of individual study classes. Dahlberg, before leaving for Syracuse and Northern Illinois, taught the beginning and intermediate classes; Norman taught the advanced class, which included terrain representation and the history of cartography. He also introduced the remote sensing class (originally called *Air Photo Interpretation*). In later years, he introduced a class on geographical exploration. As the resident Brit, he often taught the Geography of Europe.

Norman describes UCLA as a "congenial place" for him. A major draw for his research interests were the Special Collections Library on campus, and the William Andrews Clark Memorial Library, a 'treasure-house library' owned by UCLA that specializes in 16th-18th century works. Also nearby are the Huntington Library and the Getty Museum.

Although Norman describes himself as now "unemployable in cartography" because he has not been involved with computers and GIS, he made many contributions in applied areas of the field. In his early years at UCLA he wrote two articles on "Animated Cartography," (Thrower, 1959; 1961) which were some of the first articles on the subject, and are still widely cited.

He was the third map supplement editor for the *Annals* of the Association of American Geographers after Erwin Raisz and Richard Edes Harrison, and in that role he authored two and edited five poster size maps. He also created the first map supplement under the editorship of Harrison, a landform study of Cyprus (Figure 6), which is a tour de force in cartography. The sheet is full color, and consists of six different maps showing terrain types with hand shaded relief, hypsometry, general and reference maps, and text. To those who came of cartographic age after computers, this map is worthy of study. The Cyprus map was his "swan song of

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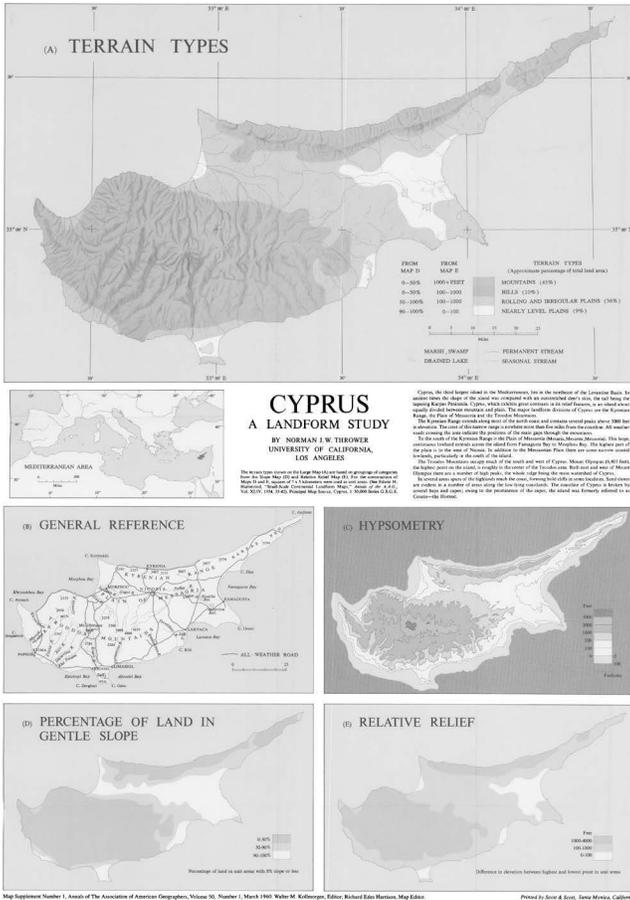


Figure 6. *Annals Map Supplement # 1, vol. 50, no. 1, March 1960.* Reproduced with permission of *Annals of the Association of American Geographers*, Blackwell Publishing. (see page 76 for color version)

production cartography,” although he did design maps which others drew. In 1950s and 1960s academia, the research involved in creating an original map was not considered ‘real research’ or ‘real geography,’ and Norman realized that in order to be promoted, “words, not maps, were what counted;” written productions were the only path. This was not an onerous task for Norman, but rather allowed him to pursue his scholarly interests.

When Norman was a Ph.D. student at Madison he was required to have a Ph.D. minor. Not surprisingly, his was history of science. To him, history of cartography is where the histories of art and science come together. It was also at Madison that Norman serendipitously came across a map that led him to one of his major research subjects, Edmond Halley. While browsing in the library, he found a copy of Halley’s Atlantic chart in a journal of geophysics. This chart, published in 1701, shows lines of equal magnetic declination (isogones) and was the first published use of an isometric line. Norman feels that this chart and Halley’s other charts had been overlooked by cartographers, and Halley has remained a continuing thread of Norman’s research. (In 1963 Norman received a Guggenheim Fellowship to continue his research on Halley in England). He considers his two-volume work *The Three Voyages of Edmond Halley in the ‘Paramore’, 1698-1701* (Thrower, 1980) to be his major achievement.

If, as it has been said, history is about chaps and geography is about maps, then we can describe Norman’s major research projects in history of cartography as about chaps who made (or used) maps. In addition to his work on Halley, he also wrote about Prince Henry the Navigator, Samuel Pepys, William H. Emory, Piri Reis, Sir Francis Drake, and in recent years doctors and maps.

At UCLA, for a period of over fifteen years beginning in 1975, Norman had a reduced teaching load while he headed various special projects. In 1973, he was appointed by Governor Ronald Reagan to the Sir Francis Drake Commission and in 1975 assumed the Presidency of the California branch of this British-California Commission to celebrate the 400th anniversary of Sir Francis Drake’s circumnavigation of the world. For Norman, personally, this was a great experience because he got to meet Queen Elizabeth II and Prince Phillip, and the Prime Minister, Edward Heath. As Norman describes the event, he “got to shake the Queen’s glove.” UCLA and geography graduate students also benefited from the Drake celebration. Numerous events were held on campus, at the Clark Library, and at the Huntington Library with lectures by a number of visiting scholars on Drake and the period. Norman’s students were invited to attend all of the lectures and to meet the scholars. A summer institute was held at the Clark Library where a half dozen post-doctoral ‘Drake Fellows’ did research on the period, and met in seminars and over lunch and coffee with the visiting scholars including David Woodward, Helen Wallis, Coolie Verner, and Jeanette Black.

When the Drake Commission reached the end of its charter in 1980, Norman was appointed William Andrews Clark Memorial Library Professor, and then Director of the Clark Library from 1981-1987. Among other events during that period was an international conference on Newton and Halley, and again Norman was able to bring visiting scholars in the

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history of cartography to the University. Two books were a direct outcome of Norman's tenure at the Clark Memorial Library: *The Complete Plattmaker* (1978) and *Standing on the Shoulders of Giants* (1990), both of which he edited and for which he wrote chapters.

Norman's last formal position at UCLA was as director of the Columbus Quincentenary Programs, 1989-93. Once again, he was able to bring internationally known scholars to the campus and met another Queen. This time, he had an audience with Queen Sofia of Spain at her 'small' palace outside of Madrid. He was also greatly honored to receive the Orden del Mérito Civil from King Juan Carlos I, which is given in recognition of service to Spain.

Although he no longer produced maps himself, Norman Thrower was editor and/or cartographic advisor for a number of different maps and atlases. One of the best known of these projects was *Man's Domain, a Thematic Atlas of the World* (Thrower, 1968), which went into 3 editions and multiple printings. He also edited and supervised the cartography of the *Chile-California Mediterranean Scrub Atlas: A Comparative Analysis* (Thrower, 1977), which was a product of an International Biological Program. The U.S. biologists on this project came from universities that had no geography departments so Norman became "Mr. Cartography" for the project.

One of Norman's best known contributions is his brief history of the field *Maps and Civilization: Cartography in Culture and Society*, (1996) which was originally called *Maps and Man: an Examination of Cartography in Relation to Civilization* (1972). This work is unusual in that it carries history of cartography to the last decade of the twentieth century with GIS, planetary mapping, and animated cartography and ties trends in history to development of maps. Norman is pleased to point out that it has been translated into Spanish and Japanese.

Norman is known for his energy and his wide range of interests and knowledge. While involved in teaching and research projects, Norman also found time to serve as President of the Society for the History of Discoveries, as an International Representative of the Hakluyt Society, and charter president of the California Map Society. He also served twenty years on the Board of the Guggenheim Foundation, and had the honor of recommending Arthur Robinson for a Fellowship in 1977. The Association of American Geographers presented him the Lifetime Achievement Honors award in 1998.

Reflections on the Field and on a Career

It is expected that one should ask the interviewee about the current state of the field and his opinions. History of cartography has gone in some new directions. In *Maps and Civilization*, Norman has a footnote commenting that many historians of mapping have never made a map and thus, are not familiar with the practical considerations of making a map. By the same token, he notes, practitioners are often so involved with technology that they are unaware of the broad scope of the field (1996, 261). Therefore, I asked what he felt about the new directions. He simply noted that the post-modern works are part of a growing corpus within the history of cartography and expand the field.

When asked about the advancements of technology related to cartographic production that make it easier for more people to make more maps, and specifically what has been lost, i.e. what critical skills are people not learning, his answer was short. "In a word, design." He is critical of the many poorly designed maps that are now produced. He notes that there is a lack of rigorous training in cartographic design. On the other

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hand, the drudgery has been taken out of map making. He also points out that the technology has made color less expensive. “Some maps cry out for color,” and in the past, color was often rejected owing to costs.

Of course, I asked the requisite question, “is cartography dead?” He replied, “If so it had a very short life, since the term was only introduced in the mid-nineteenth century; but what’s in a name. There will always be something under that umbrella. There is a need for [cartographic] display.”

When asked, what of his many activities had given him the greatest satisfaction, teaching, administration, or research, not surprisingly, he said research. He enjoys the creativity of writing and publishing, and finds it intellectually rewarding. He also felt he was able to reach more people and that there is permanence in the work. Norman continues with research and publishing; as a testament to his productivity, in 1999, the University of California presented him with the 1998-99 Constantine Panunzio Award for being the most productive Emeritus Professor of the system’s nine campuses.

He does not feel he was an especially good teacher, but his former students would disagree with that assessment and, in fact, in 1991 he was given the Outstanding Mentor award by the National Council for Geographic Education. Three of his earliest Ph.D. students (John Estes, John Jensen, and Judith Tyner) presented papers in his honor, and it was pointed out that they might retire before Norman did. The students he supervised were not required to confine their interests to historical subjects, but wrote theses and dissertations on such topics as television news maps, remote sensing, and persuasive cartography. Like his mentor Robinson, Thrower turned his students loose on their projects, but gave guidance when it was needed and ensured that they wrote readable prose.

In any conversation with Norman, the question “what are you working on now?” comes up. Usually there are multiple projects. This day was no exception. Eight short pieces for two different encyclopedias are in press, and he is working on four articles for two volumes of the *History of Cartography*. These articles cover Edmond Halley in the eighteenth century and Erwin Raisz, Thematic Mapping, and Scientific Discovery and Exploration for the twentieth century. He would be presenting a conference paper in a couple of months on Doctors and Maps. There is also a work in press “Compass, Chart and Course: Ottoman Cartography in Context” that is the result of an invited paper at a Turkish symposium on the admiral/cartographer Piri Reis.

Once as a young faculty member, I asked him how he managed to work on so many projects at the same time and he quoted a ship-building maxim: “You have one on the drawing board, one being built, and one being launched.” It was an excellent piece of advice. For this interview, I asked, “What keeps you working, what drives you? After all you have been ‘retired’ for over 15 years.” His answer was “The alternative is boredom, isn’t it?”

Thank you Norman for a day of recollection that was anything but boring.

REFERENCES

Finch, V., *et al.*, 1957. *Elements of Geography*, New York: McGraw-Hill, 406.
McMaster, R.B., 1991. Special issue *History of Academic Cartography, Cartography and Geographic Information Systems*, 18:3.

Robinson, A.H. and Thrower, N.J.W., 1957. A New Method of Terrain Representation, *Geographical Review*, 47: 507-520.

_____, 1969. On Surface Representation Using Traces of Parallel Inclined Planes, *Annals of the Association of American Geographers*, 59: 600-604.

Thrower, N.J.W. 2004. *From the Stone Age to the Electronic Age: The Saga of a Cartographer in the Twentieth Century and Beyond*, Occasional Paper No. 8, California Map Society.

_____, 1959. "Animated Cartography" *Professional Geographer*, 11:6: 9-12.

_____, 1961. "Animated Cartography in the United States" *International Yearbook of Cartography*, 1: 20-30.

_____, 1966. *Original Survey and Land Subdivision: A Comparative Study of the Form and Effect of Contrasting Cadastral Surveys*, AAG Monograph no. 4, Chicago: Rand McNally and the Association of American Geographers.

_____ (Ed.) 1968, 1970, 1974. *Man's Domain: A Thematic Atlas of the World: Mapping Man's Relationship with His Environment*. New York: McGraw-Hill.

_____, 1972. *Maps and Man: An Examination of Cartography in Relation to Culture and Civilization*, Englewood Cliffs, NJ: Prentice-Hall, Inc.

_____, (Ed.) 1978. *The Compleat Plattmaker: Essays on Chart, Map, and Globe Making in England in the Seventeenth and Eighteenth Centuries*, Berkeley: University of California Press.

_____, 1980. *The Three Voyages of Edmond Halley in the 'Paramore' 1698-1701*, Second Series, v. 156 text, v. 157 maps, London: Hakluyt Society.

_____ (Ed.) 1990. *Standing on the Shoulders of Giants: A Longer View of Newton and Halley*. Berkeley: University of California Press.

_____, 1996. *Maps and Civilization: Cartography in Culture and Society*, Chicago: University of Chicago Press.

Thrower, N.J.W. and Bradbury, D.E. (Eds.) 1977. *Chile-California Mediterranean Scrub Atlas: A Comparative Analysis*. Stroudsburg, PA: Dowden, Hutchinson and Ross, Inc. For the International Biological Program.