

of non-locality, but at present twistor ideas appear more as the desire for a physical theory than the embodiment of one.

Regarded as a scientific treatise, *The Road to Reality* is in many ways problematic. By nominally addressing a substantive discussion of frontier issues in theoretical physics and cosmology to a popular audience, an author deprives himself of the discipline of having to provide details, to address concrete experimental issues, or to pitch the level of his argumentation to peers capable of judging them critically. Galileo pulled this off brilliantly, but times were much simpler then! The worst parts of the book are the chapters on high-energy physics and quantum field theory, which in spite of their brevity contain several serious blunders: The Cabibbo angle does not govern the mixing of K^0 and \bar{K}^0 mesons to make the long- and short-lived K_s . There are not alternative directions of electroweak symmetry breaking. And no associated disorder arises at that symmetry-breaking transition, any more than at the analogous transition in ordinary superconductors.

To summarize, there's much to admire and profit from in this remarkable book, but judged by the highest standards *The Road to Reality* is deeply flawed.

References

1. R. Penrose, *The Emperor's New Mind: Concerning Computers, Minds, and the Laws of Physics* (Oxford Univ. Press, Oxford, 1989).
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A DAY OUT: BIOGRAPHY

Refuge from Berlin's Bustle

John Bohannon

"The sailing ship, the distant view, the lonely walks in autumn, the relative silence, it is paradise." This is how Albert Einstein described his summer home just outside Berlin in the village of Caputh, where he lived from 1929 to 1932. He could not have known these would be the last carefree years of his life. When the Nazis seized power in 1933, he was visiting the United States and he settled there. Soon, helplessly, he would witness his wife Elsa's death from a painful illness and later the application of his revolutionary theories in the creation of the most destructive weapons ever known.

Einstein's Summer House in Caputh

Einstein Forum, Am Neuen Markt 7, 14467 Potsdam, Germany.
www.einsteinforum.de

Einstein is receiving even greater attention than usual in this pleasingly symmetric year, 50 years after his death and 100 years after the publication of his world-changing trio of publications on the quantum theory of light, Brownian motion, and special relativity. For those seeking a more private glimpse into his life, a trip to Berlin would be timely. In preparation for visitors, the Einstein Forum (an interdisciplinary institution formed in 1993 to promote innovative thinking and engage the public) is renovating the Caputh summer house and plans to offer tours starting in May.

Walking along the damp path through the birch trees, slipping through the back door of the house, and opening the wide windows to gaze out over the gracious curve of Templiner Lake, one immediately sees what Einstein meant by paradise. The house was an escape from the intruding outer world.

By 1929, Einstein was already a household name. Ten years earlier, his general theory of relativity had been triumphantly confirmed by the observation of starlight bending around the eclipsed sun, and he had received the 1921 Nobel Prize in physics (although the citation mentioned the photoelectric effect, not relativity). As word spread of his 50th birthday, Einstein was inundated with letters and presents from around the world. But what he most wanted was a quiet refuge where he could entertain friends, spend time with his wife and two stepdaughters, and think about the unified field theory, which he would pursue for the rest of his life and which still eludes physicists today. And so, using most of his savings to buy the land and build a house, he got his retreat.

Einstein's desire for a wooden house attracted the architect Konrad Wachsmann, who designed the block house at Caputh and became a dear friend. Acting from Princeton, Einstein later helped him flee Nazi Germany for the United States. There, in the 1940s, Wachsmann worked with Walter Gropius. Together they developed a system for producing prefabricated wood houses that would gain him an international reputation and help radically alter the suburban landscape. As one of his earliest designs using wood, the Caputh house has an added historical significance.

As Einstein no doubt would have wanted, the house has not been turned into a shrine. Instead, it continues to be used for the annual Nobel lectures held by the



Forum and for academic retreats. Rather than rummaging for furniture in antique shops to match the original contents (which were lost in the years of first Nazi and then communist East German control), the Forum is fitting the house with functional, tasteful equivalents. As the Forum's Rüdiger Zill puts it, this is the "honest" approach.

A 15-minute drive away in Potsdam, black-and-white photographs from Einstein's Caputh years are on display at the Einstein Forum. One can't help but smile seeing these images; some are iconic, such as Einstein setting off in Tümmeler, the beloved sailboat he kept moored on the Templiner. But many others are intimate and spontaneous: His stepdaughters recline in sunchairs with obvious pleasure. Einstein emerges serenely from the door in rumpled clothes or gazes out the window with a look of utter peace. These reveal Einstein at his most unguarded and, perhaps, optimistic.

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BROWSINGS

Einstein 1905. The Standard of Greatness. John S. Rigden. Harvard University Press, Cambridge, MA, 2005. 185 pp. \$21.95, £14.95. ISBN 0-674-01544-4.

Between March and September 1905, Einstein wrote five *Annalen der Physik* papers that would greatly influence 20th-century physics. These present the argument, from considerations of entropy, that light consists of quanta; Einstein's dissertation on the determination of molecular dimensions; his theory of Brownian motion; the theory of special relativity; and the derivation of $m = E/c^2$. For each paper, Rigden discusses the background, underlying ideas, content, and organization before surveying its reception and impact. General readers who wish to understand the magnitude of what Einstein accomplished during his *annus mirabilis* will find this lucid, nonmathematical account ideal.

The reviewer is at Choriner Strasse 74, 10119 Berlin, Germany. Web site: www.johnbohannon.org