

BOOKSHELF

Weaving the Web – The Original Design and Ultimate Destiny of the World Wide Web by its Inventor by Tim Berners-Lee and Mark Fischetti, Harper, San Francisco, 1999, ISBN 0 060 251586 1 (\$26).

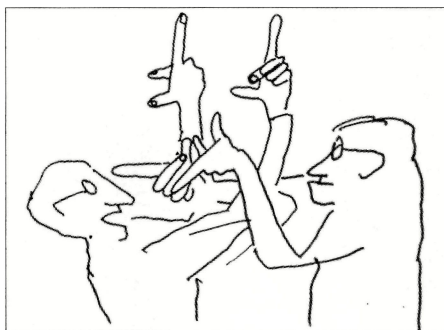
If you've ever wondered what goes on in the mind of an inventor you could do a lot worse than delve into Tim Berners-Lee's *Weaving the Web*. In it he and co-author Mark Fischetti explain the origins of the ideas that are now revolutionizing the communications landscape, and the vision that lies behind them.

From a childhood spent discussing maths at the breakfast table and building mock-up replicas of the Ferranti computers his parents worked on, Berners-Lee moved on to building his own computer out of salvaged pieces of electronics and an early microprocessor chip.

In 1980, he went to CERN on a six-month contract. There he wrote a hypertext program called Enquire to help him keep track of the complex web of who did what on the accelerator controls project he worked on. Back at CERN at the end of the decade, Berners-Lee transported the idea behind Enquire to the Internet, with the now well known results.

Berners-Lee's book is a very personal account, and it's all the more readable for that. Like most of us, Tim Berners-Lee has a mind that's better at storing random associations than hierarchical structures. And, like most of us, his mind is prone to mislaying some of those associations. Enquire began as an effort to overcome that shortcoming and evolved into something much bigger.

Berners-Lee is an idealist, driven by the desire to make the world a better place and the profound belief that the Web can do that. Now far from the rarefied air of a pure research laboratory, Berners-Lee gives credit to the atmosphere in which his ideas were allowed to mature. "I was very lucky, in working at CERN, to be in an environment... of mutual respect and of building something very great through a collective effort that was well beyond the means of any one person," he explained. "The environment was complex and rich; any two people could get together and exchange views, and even end up working together. This system produced a weird and wonderful machine, which needed care to maintain, but could take advantage of the ingenuity, inspiration, and intuition of individuals in a special way. That, from the start, has been my goal for the World Wide Web." James Gillies, CERN.



Magnetic discussion – a sketch by Bruno Touschek.

The Standard Model in the Making – Precision Study of the Electroweak Interactions by Dima Bardin and Giampiero Passarino, Oxford, International Series of Monographs on Physics, August 1999, ISBN 0 19 850280 X (hbk £80, 680 pages).

The past decade of particle physics experiments has been devoted to the testing of the standard electroweak theory, mainly at LEP, SLC and the Tevatron. The goal has been to probe the theory at the quantum-loop level by comparing the quantitative predictions on radiative corrections to experimental data, for as many measurable quantities as possible.

From the theoretical side, the preparation of these precision tests has been a tremendous task that has involved hundreds of theorists for over 20 years. This book offers a complete compendium of the techniques and results in the calculation of radiative corrections.

No other book offers a complete, exhaustive and authoritative description of the electroweak theory predictions for precision tests. All calculations are described in detail and the results are reported explicitly. Different techniques and approaches are introduced and compared. Most of the results are explicitly derived and discussed. The tree level results and the quantum corrections for all relevant physical processes and quantities are studied in detail.

The exposition is clear and only a basic knowledge of quantum field theory is assumed. Thus, the book qualifies as a complete reference handbook for this domain of contemporary physics. Those interested in the overall physical picture and the main implications of precision tests can find more-readable reviews elsewhere. However, this work will be invaluable for professional theorists looking for state-of-the-art reviews. Guido Altarelli, CERN and Rome III.

Bruno Touschek and the Birth of e^+e^- Physics edited by G Isidori, INFN, Frascati, ISBN 88 86409 17 6.

Volume XIII in the Frascati Physics Series contains the proceedings of the memorial meeting held in Frascati in November 1998. The meeting marked the 20th anniversary of the death of electron-positron collider pioneer Bruno Touschek. The meeting was reported in *CERN Courier* (February 1999 p17).

Touschek made physics and physicists realize the importance of particle-antiparticle colliders, and opened the door to one of the most fruitful periods of particle physics research. Touschek himself was also an interesting and flamboyant figure. The presentations at the meeting underlined the importance of his contributions and his special character.

Chapters include: The Frascati decision and the AdA proposal, by Giorgio Salvini; Remembering Bruno Touschek, his work his personality, by Carlo Bernardini; From AdA to ACO – reminiscences of Bruno Touschek, by Jacques Haissinski; The ADONE results and the development of the quark-parton model, by Massimo Testa; Electron-positron storage rings from ADA to LEP, by Emilio Picasso; Physics at present electron-positron colliders, by Guido Altarelli; Physics at DAFNE, by Paolo Franzini; Status of DAFNE, by Miro Andrea Preger; The physics at an e^+e^- linear collider, by Marcello Piccolo. The book also has a list of Touschek's scientific papers, some photographs and a few of Touschek's sketches.

For more information on Touschek see *The Bruno Touschek legacy*, by Edoardo Amaldi.

Beyond Conventional Quantization by John R Klauder, Cambridge, ISBN 0 521 25884 7 (hbk £55/\$85, 300 pages).

Extensions of conventional quantum pictures can sidestep some quantum embarrassments. This book is useful to someone with a deep feel for quantum field theory.

CP Violation by I I Bigi and A I Sanda, Cambridge Monographs of Particle Physics, Nuclear Physics and Cosmology, ISBN 0 521 44349 0 (hbk £60/\$95, 380 pages).

With new results from the classic kaon sector and with new B factories now coming on line, CP violation is a major boom area in particle physics. This carefully written book would make a useful introduction and guide to the difficult theory of this phenomenon.