

FROM THE EDITORS

The famous eight-volume course written by Landau and Lifshitz between the late 1940s and early 1960s presented a complete picture of the whole of theoretical physics as it was known at that time. It was a beautiful picture and it appeared to have just a few loose ends. Today, making such a comprehensive encyclopedia does not seem to be possible. Indeed it is easy to estimate that high-energy theory alone, represented in the Landau–Lifshitz course just by one volume “Quantum Electrodynamics”, would probably require the whole eight volumes now: two volumes of “String Theory” by Joe Polchinski, three volumes of “The Quantum Theory of Fields” by Steven Weinberg, one volume of electroweak phenomenology and another one on QCD phenomenology and strong interaction physics at large, plus, probably, yet another on applications of field-theoretical methods in condensed matter and related areas. Needless to say, such a Herculean task would require the effort of a large team of experts — the time of great universalists, such as Landau or Fermi, seems to be over.

Our task was much less ambitious: to create a snapshot of theoretical physics, a time slice which would be sufficiently representative and give a (hopefully) full picture of the topics and subjects which excited and inspired the theoretical community at the beginning of the third millennium. We have done our best to make the Collection “From Fields to Strings: Circumnavigating Theoretical Physics”, which the reader now holds in his or her hands, as complete and pedagogical as possible. The Collection contains approximately 50 papers covering all areas of high-energy theory and selected areas of condensed matter. Approximately 70% of the articles are comprehensive dedicated reviews or semi-reviews. Other contributions present original results.

This Collection is dedicated to the memory of Ian Kogan, an outstanding theoretical physicist who died in 2003 at the age of 44. When in 2003 we embarked on this endeavor — making a Ian Kogan Memorial Volume — we could not anticipate that the response of the community would be so powerful. Leading theorists and world experts in various areas of theoretical physics formed a team which without exaggeration one can call remarkable. As a result, a single volume grew into three bulky ones, over 2300 pages

altogether. Of course, it is not only the quantity that counts but, first and foremost, the quality of the material. The Collection spans very diverse topics but every author has made a special effort to achieve a high standard of presentation in spite of the rather compressed time framework they had at their disposal.

The first part of the Collection is nonscientific, it is a tribute to Ian the human being.^a The focus of this part is the emotionally charged memoir of Ilya Kogan, Ian's father; entitled "This is how it was ...", these recollections span six decades of the turbulent twentieth century, and can be recommended even to those who are not particularly interested in the physics part. The latter constitutes the book's main weight, both in the literal and figurative senses of this word. The concluding chapter presents a small selection of Ian's papers intended to illustrate the depth and breadth of his interests. This breadth is reflected in the wide range of topics covered in this Collection.

This publication, which we hope will have a lasting impact in the community, was made possible by the enthusiastic participation of a large group of theoretical physicists from whom we also received much advice and encouragement. We would like to thank them all. We are also grateful to Ben Gripaios for proofreading a large number of manuscripts, Alexey Kobrinskii for assistance with typesetting and Bella Wheeler for help with the English version of Ilya Kogan's memoir. Special thanks go to Poline Tylevich for the graphic design. We are grateful to Lakshmi Narayanan — "our editor" — for unlimited patience and invaluable assistance in the preparation of this publication.

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August 29, 2004

^a A remark concerning a rather confusing situation with the spelling of Ian's name is in order. In Russian it is Ян, which allows two distinct transliterations: Yan and Ian. While in the Soviet Union he used the former; after moving to the West he switched to the latter. So, whether the author of a paper is Yan Kogan or Ian Kogan, it is one and the same person.