

Contents

Preface	v
Contents	xiii
Remarks on the notes and bibliographies	xviii
List of archival sources consulted	xix
List of abbreviations	xxi

PART I. THE POST-WAR EMERGENCE OF HIGH-ENERGY PHYSICS

1 From cosmic-ray and nuclear physics to high-energy physics 3

Ulrike Mersits

1.1 The scientific situation in 'elementary-particle physics' around 1945/46	4
1.2 Institutional changes in nuclear physics due to the war	11
1.3 The post-war accelerator programmes	13
1.4 Experimental particle physics: developments from 1946 to 1953	24
1.5 The theoreticians: from the first Shelter Island conference to the Rochester conferences	32
1.6 Concluding remarks	41

PART II. THE PREHISTORY OF CERN, 1949–FEBRUARY 1952

2 The first suggestions, 1949–June 1950 63

Dominique Pestre

2.1 The years following the war	64
2.2 Two proposals for European collaboration in November 1949	69
2.3 The European Cultural Conference, Lausanne, 8–12 December 1949	72
2.4 Attempts to implement the suggestions	75
2.5 The fifth General Conference of UNESCO, Florence, June 1950	82
2.6 The situation in June 1950	88

3 The fusion of the initiatives, June–December 1950 97*Dominique Pestre*

- 3.1 The promotion of the Florence project, June–October 1950 98
- 3.2 The meeting between Auger and Dautry and the decision to call a gathering of scientists in Geneva in December 101
- 3.3 The Geneva meeting of 12 December at the Centre Européen de la Culture 109
- 3.4 Immediate reactions to the 12 December meeting 112
- 3.5 Conclusion: Ideas and motivations behind Amaldi's, Auger's, and Dautry's proposals 116

4 The period of informed optimism, December 1950–August 1951 123*Dominique Pestre*

- 4.1 The implementation of the resolution of 12 December: French, Italian, and Belgian roles in the organization of the project, December 1950–May 1951 124
- 4.2 Meeting of consultants at UNESCO in Paris, May 1951 130
- 4.3 Discussions arising out of the consultants' report, May–July 1951 134
- 4.4 The intergovernmental meeting is called 140
- 4.5 A marriage of convenience 141

5 The period of conflict, August–December 1951 147*Dominique Pestre*

- 5.1 The gradual emergence of an alternative programme, August–October 1951 148
- 5.2 Second meeting of consultants, Paris, 26 and 27 October 1951 157
- 5.3 Tension peaks, late November–early December 1951 163
- 5.4 The roots of the division 169

6 The establishment of a Council of Representatives of European States, December 1951–February 1952 179*Dominique Pestre*

- 6.1 The intergovernmental conference in Paris, 17–20 December 1951 180
- 6.2 Negotiations between December and February 188
- 6.3 The second session of the conference, Geneva, 12–15 February 1952 194
- 6.4 Concluding remarks on the respective roles of scientists and politicians in the process of establishment of the Council 198

PART III. THE PROVISIONAL CERN, FEBRUARY 1952 – OCTOBER 1954**7 Survey of developments 209***John Krige*

- 7.1 Establishing the study groups and the secretariat 211
- 7.2 Fixing the energies of the accelerators 211
- 7.3 The discovery of the strong-focusing principle 213
- 7.4 The choice of a site for the new laboratory 213
- 7.5 Britain takes the plunge 215
- 7.6 Consolidating the scientific work 216
- 7.7 The Convention and its signature 219
- 7.8 The new mood in CERN 222
- 7.9 Putting down roots in Geneva 223
- 7.10 The nomination of the first Director-General 225
- 7.11 The ratification of the Convention 226
- 7.12 The philosophy of the organization 228
- Appendix 7.1 Scale of percentage contributions to the permanent organization applicable during the period to 31 December 1956 231
- Appendix 7.2 Rates of exchange used for accounting purposes (a) as from 1 December 1952 and (b) as from 1 January 1954 231
- Appendix 7.3 Dates of deposit of instruments of ratification of the Convention at UNESCO House in Paris 232
- Appendix 7.4 Official delegates to the nine Council sessions 232

8 Case studies of some important decisions 237*John Krige*

- 8.1 The choice of a site 238
- 8.2 The Convention. Two key clauses 246
- 8.3 Financing the interim organization 252
- 8.4 The nomination of the first Director-General and its aftermath 261
- 8.5 The strong-focusing principle: the decision and its early consequences 273
- 8.6 Planning the future laboratory 282

Bibliography for Parts II and III 293*John Krige and Dominique Pestre***Collection of photographs and documents of historic interest**

PART IV. NATIONAL DECISIONS TO JOIN CERN

9 French attitudes to the European laboratory, 1949–1954 303

Dominique Pestre

- 9.1 The French political and diplomatic context, and nuclear policy 305
- 9.2 The French scientific context, 1945–1955 309
- 9.3 French initiatives regarding the UNESCO project, the decision-making process, 1949–May 1952 317
- 9.4 Towards the signing of the Convention, February 1952–July 1953 328
- 9.5 The debate surrounding French ratification, July 1953–September 1954 334
- 9.6 Concluding remarks 342

10 The Italian scenario 353

Lanfranco Belloni

- 10.1 CNR and the ‘Years of Reconstruction’ 354
- 10.2 Rome physicists’ involvement in the European project 359
- 10.3 CNR and Italian support of the European laboratory project 369

11 Germany’s part in the setting-up of CERN 383

Armin Hermann

- 11.1 Up to the UNESCO conference in Paris 384
- 11.2 Heisenberg’s appointment as German delegate 393
- 11.3 Heisenberg’s rôle at the UNESCO conference 399
- 11.4 The ratification 405
- 11.5 German positions 413

12 Britain and the European laboratory project: 1951–mid-1952 431

John Krige

- 12.1 The period of detachment 433
- 12.2 The UNESCO May report and the mounting opposition to it on the continent and in Britain 438
- 12.3 Forging the alliance: the offer of the Liverpool cyclotron and the Paris conference 445
- 12.4 Confronting the new question: Should Britain join the Council of Representatives? 454
- 12.5 The Cabinet Steering Committee reconsiders the case 462

13 Britain and the European laboratory project: mid-1952–December 1953 475*John Krige*

- 13.1 The emergence of the Harwell group 477
- 13.2 The polarization of the scientific community 482
- 13.3 Progress at governmental level 487
- 13.4 Refocusing the issue: the ‘discovery’ of the alternating-gradient principle 490
- 13.5 Britain joins CERN 495
- Appendix 13.1 A short survey of the committees involved in the CERN decision 503
- Appendix 13.2 Decision-making at the science–government interface: some general comments 506

PART V. CONCLUDING REMARKS**14 The how and the why of the birth of CERN 523***John Krige and Dominique Pestre*

- 14.1 A brief narrative account 524
- 14.2 A classical interpretation of CERN’s origins 525
- 14.3 The first group of actors: the physicists 529
- 14.4 The second group of actors: high-level science administrators and some diplomats 530
- 14.5 The activities of the ‘CERN lobby’ 532
- 14.6 The reactions of the member states 535
- 14.7 The motivations in governmental circles 536
- 14.8 CERN, an American puppet? 537
- 14.9 CERN, an organization of military importance? 539

Appendix 1. Who’s who in the foundation of CERN 545*Armin Hermann***Appendix 2. Chronology of events 567***John Krige and Dominique Pestre*

Name index 587

Thematic subject index 594