

my collection an exceptionally qualified collaborator in the late Monsieur RAPHAEL PETRUCCI. To the protracted labours which M. Petrucci devoted to the study of our Ch'ien-fo-tung paintings and their inscriptions between 1911 and 1916 it would be impossible here to do full justice, nor is it necessary to attempt it since a detailed account of them will be found in the initial section of Chap. XXIII dealing with the pictorial remains from the 'Thousand Buddhas'.<sup>34</sup>

Help of M.  
PETRUCCI.

M. Petrucci's premature death, a severe blow to research in varied fields, prevented the large publication which, as the preliminary scheme reproduced in Appendix E, I shows, he had planned on those paintings. The two chapters actually written by him before his last illness, though not completely finished in detail, have been embodied in the same Appendix E. After M. Petrucci's death, in February, 1917, his friends MM. Chavannes, Foucher, and Sylvain Lévi kindly charged themselves with the labour of preparing the large essay on the *Maṇḍala* compositions for the press.<sup>35</sup> The same task was accomplished with much care by Mr. A. D. Waley for the chapter dealing with the votive inscriptions.<sup>36</sup> All the same it is obvious that these chapters cannot present the final shape their author would have wished to give them himself. Finally students of Buddhist art will feel grateful to Mr. Laurence Binyon who, from regard for his friend's memory, readily agreed to replace the concluding chapter in M. Petrucci's original programme by his lucid *Essay on the art of the Tun-huang paintings*.<sup>37</sup>

In respect of other classes of art objects, too, I found savants ready to assist with their expert knowledge. The late Professor Sir ARTHUR CHURCH, F.R.S., gave us the benefit of his lifelong researches when supplying in Appendix D an analysis of the materials used for mural paintings and stucco reliefs at different sites. Professor PERCY GARDNER once again helped us with his wide archaeological knowledge in the determination of intaglios, seal-impressions, etc., showing late classical workmanship or influence. To Professor J. STRZYGOWSKI I am indebted for much stimulating guidance as to the links which are traceable between the ancient art of innermost Asia and that of the Hellenistic Near East. He also very kindly supervised the drawing of some of the plates illustrating the designs of interesting textiles from the 'Thousand Buddhas'. Miss K. SCHLESINGER, from her expert knowledge of the history of musical instruments, kindly furnished instructive notes on those represented in the collection (Appendix H). To Mr. REGINALD A. SMITH of the British Museum I am beholden for the detailed examination of the Stone Age implements found in the Lop desert,<sup>38</sup> and to Mr. R. L. HOBSON, the well-known authority on Chinese porcelain, for much useful help with regard to the finer ceramic relics discovered on my explorations.

Collabora-  
tion on  
other art  
remains.

The late Professor J. VON WIESNER, the distinguished plant physiologist, whose important researches into the development of paper manufacture in Central Asia had been previously served by manuscript finds of my first expedition, made the paper of my Early Sogdian documents the object of painstaking microscopical analysis. It was rewarded by very interesting discoveries as regards the earliest introduction of rag paper.<sup>39</sup> It was through Professor von Wiesner's kindness that the help of his very competent pupil and fellow-worker, Dr. T. F. HANAUSEK, was secured for the microscopical analysis of characteristic fabric specimens from different sites. His results, as recorded in the Descriptive Lists, will certainly prove of value for future investigations into the history of textile manufacture, the spread of cotton cultivation, etc. I must regret that, owing to the death of Professor L. DE LÓCZY and conditions arising from the war, it has not been possible to make accessible here the results of the analysis of the sand samples and other geological specimens collected by me which that eminent authority on the geology of westernmost China had undertaken

Analysis of  
industrial  
relics, etc.

<sup>34</sup> See below, pp. 833 sqq.

<sup>35</sup> Reproduced below, pp. 1400-28.

<sup>36</sup> Cf. below, pp. 1394-1400.

<sup>37</sup> See Appendix E, iv, pp. 1428 sqq.

<sup>38</sup> See below, pp. 356 sqq., 451.

<sup>39</sup> Cf. below, pp. 673 sqq.