At the turn of the twentieth century, serological treatment of disease was the most powerful weapon in the therapeutic armamentarium. At the heart of its successful diffusion lay the standardization process, carried on by serologists in serum institutes all over the world. The founding generation all looked to Paul Ehrlich and his procedure of *Wertbestimmung*, and as Hüntelmann shows in an earlier chapter, to Ehrlich’s transformation of immune horse serum into a reliable pharmaceutical, produced and certified under state control. The involvement of the state from the outset meant that by the side of the technical process of standardization, lay the political. The political and economic element in many ways came before the technical: the groundwork for international standardization had been laid during the second half of the nineteenth century in the field of communications and weights and measures. Standardization agreements were commonplaces of international trade. The economist Charles Kindleberger calls them international public goods, like peace, an open trading system and fixed exchange rates.

The International Sanitary Conferences began in 1851, a full decade before the first agreements on communications, but they took much longer to reach any firm conclusion. They were an attempt to standardize port quarantine regulations as part of the international trading system. Each of the states taking part sent one sanitary expert and one government representative. But although agreements were drafted and signed they were never ratified, and so never went into effect. By 1885, 28 states were represented at the Conference. Agreement collapsed on the question of quarantines at Suez, opposed by British trading interests, the argument being that quarantines would force shipping to abandon the Suez Canal route from India into Europe. A limited agreement followed the conference at Venice in 1892, which established a quarantine station at El Tor on the Sinai Peninsula. It was soon famous for its virulent cholera organisms.

The first general agreement on shipping quarantines did not come till the Eleventh International Conference of 1903; it was followed by the formation of the first permanent international health organization, the *Office*
international de l’hygiène publique, set up by the Rome Agreement of 1907, mainly to track the flow of epidemic disease through the ports.\(^5\) Twelve states signed and this time ratified it, including the US, with another 30 adhering later, though neither Germany nor Austria-Hungary ever joined.\(^6\) The officials of the Office were in most cases senior bureaucrats in the health ministries of their states, rather than technical experts. Neville Howard-Jones thinks this was because the International Sanitary Conferences had found it so difficult to get agreement between different scientific points of view, though it seems more likely that the theoretical disagreements on the effectiveness of quarantines had been a smokescreen for interests of state. Standardization as an interest of state was included in the Office’s mandate.\(^7\)

When meetings started up again after WWI, the British Ministry of Health proposed that the Office support free venereal disease clinics in all ports, along with a standardized health card which would allow sailors diagnosed with syphilis to carry on with treatment from port to port.\(^8\) This proposal led to the Brussels Agreement of 1924.\(^9\) For this to work, the Wassermann test for syphilis would have to be standardized. The Danish delegate to the Office, Thorvald Madsen, was commissioned to look into it since his institution, the Statens Serum Institut of Copenhagen, had been doing Denmark’s syphilis testing since 1909.

The League of Nations came into existence under the Treaty of Versailles in January 1920. At first, it was expected that the Office international would amalgamate with the League’s Health Organisation.\(^10\) But that plan fell through, and the Office continued to exist.\(^11\) The Health Organisation’s Medical Director was the Polish bacteriologist Ludwig Rajchman, who worked at the League’s Secretariat in Geneva. Its President was Thorvald Madsen, now Director of the Statens Serum Institut, who was also Chair of one of its subcommittees, the Standardisation Commission. (Figure 7.1).

In the post-WWI world, it would be the Statens Serum Institut, working through the Standardisation Commission, that replaced Frankfurt as the central laboratory for serum and standards. As Anne Hardy shows in another chapter of this book, it was in many ways the natural successor: its leaders all looked to Frankfurt for their standardizing techniques.

The first meeting of the League of Nations Health Organisation held in 1921 decided to work on the standardization of sera and the serological tests for syphilis.\(^12\) Madsen and Rajchman’s list of workers and laboratories for the first Conference was a list of friends and colleagues from the little world of the Serum Institutes.

The knotting of their ties with each other through the League’s Standardisation Commission only formalized old relationships. Except for the group at the Institut Pasteur, the serologists were like-minded: they had mostly been trained in Frankfurt under Paul Ehrlich, and they used Ehrlich’s technique for measuring the antibody content of a serum and the toxicity of a toxin. The idea of state control of standardized sera had originated in