Problem of Meiji Japan in the History of Science in East Asia*

Japan achieved great success in the latter half of the nineteenth century in the adoption of Western science and industrialization. This success was so impressive, and so different from what happened in other East Asian countries, that a great deal of attention has been given to understanding and explaining it. In fact, Japanese scientific and technological development in the Meiji 明治 period (1867-1912) is considered such a success story that it is seen as an exception. It is, however, precisely the exceptional nature of this case that suggests the possibility of a different interpretation. And this will be the subject of the present paper.1

We are accustomed to viewing this phenomenon simply as part of ‘early modern’ East Asian history in which an East Asian country was more successful than its neighbors in adopting and assimilating science and technology from the West. The emphasis here is on the notion that the Japanese development of science and technology took place after the Western countries had already developed them. But is this view correct? Couldn’t Japanese development have been a part of the development of science and technology that was going on at the time in a few leading countries of the world? This is the question I will attempt to tackle in various forms in the remainder of this paper.


1 The examples I will mention in this paper are fairly well known and available in many secondary sources. The useful English materials, from which most of my examples have been drawn, are: James R. Bartholomew, The Formation of Science in Japan: Building a Research Tradition (New Haven: Yale University Press, 1989); Tessa Morris-Suzuki, The Technological Transformation of Japan: From the Seventeenth to the Twenty-first Century (Cambridge University Press, 1994); Scott L. Montgomery, Science in Translation: Movements of Knowledge through Cultures and Time (Chicago: University of Chicago Press, 2000), part 2; Morris Low, Science and the Building of a New Japan (New York: Palgrave Macmillan, 2005). These works contain citations to many references in the Japanese language. I will not try to identify the original Japanese sources for the information I use in the present paper.
A source of the problem is that those holding this conventional view see the
West as one single unit, and Japan on the outside, and not part of it. This makes
us look at the transmission of Western science to Japan in a manner entirely
different from the ways we view scientific transmissions from Europe to the
United States or among European countries themselves. It forces us to treat the
Japanese case strictly as an ‘inter-cultural’ transmission between the West and
East Asia and precludes the possibility of viewing it together with the other
cases of ‘intra-cultural’ transmission among Western countries. But is the dis-
tinction really so clear-cut? Was the transmission of science and technology
from the West to Japan so very different from the transmission of such knowl-
dge from, say, Germany to England, or from England to the United States?

Now, if we look at the scientific and industrial development in the Western
countries of the period more closely – and especially if we take note of the
dates when the various events took place – what happened in Japan could, and
I think should, be seen as part of the single development of science and indu-
trialization of the leading Western countries that was going on in the latter half
of the nineteenth century. Japan was taking part in this competitive process. To
look back now at the scientific and technological development of various
countries at the time, we cannot but notice that in many respects Japan was
either on a par with, or even ahead of, major Western countries, and was doing
similar things in similar ways. Whether the Japanese at the time realized it or
not, much of what Japan did was not vastly different from what the leading
European countries or the United States did in the late decades of the nine-
teenth century when they found themselves lagging behind others in some
aspects of science and technology and made an effort to catch up.

This was very unlike what other East Asian countries were doing: China and
Korea were not consciously participating in that competitive process, but were
trying to import and adopt what they thought had already been accomplished
in the West. The Chinese and Korean people’s sense of the situation was not so
much that they were ‘lagging behind’ in the competition with the Western
powers, whom they could hope to catch up with, as that they were confronted
with Western powers, whom they had to cope with in order to survive.