BOOK REVIEWS:

Tokei Kogyo no Hattatsu
(“The Evolution of the Watch Industry”)
By Hoshimi Uchida, Hattori Seiko, 1985, 494 pages.

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In recent years, interest in the watch industry and the history of timepieces has increased. In addition to *Revolution in Time* (1983) by D.S. Landes and *Histoire du Temps* (1982) by Jacques Attali, in “Peasant Time and Factory Time in Japan” (*Past and Present*, 1986, no.111) by T.C. Smith, how the time-consciousness and time-discipline of Edo Era peasants contributed to the success of Japan’s modernization and industrialization is discussed. Many developing countries are even now said to be “countries without time,” and when the impoverished state of their modern time-consciousness is considered, it is no wonder that attention is drawn to the time-consciousness and time-discipline of the Japanese, who succeeded in industrialization.

Japan now has the world’s most advanced watch industry. The progress of Japan’s quartz watches and electronic watch industry is certainly well covered both by Landes and Attali, but the development of the modern watch industry in Japan before the war is completely ignored. This is because there was no systematic study of the history of Japan’s prewar watch industry. The publication of an opus to fill this void by Professor Hoshimi Uchida is timely, and should be highly evaluated as the fruit of research in Japanese economic and business history. This volume is one result of research into the history of the Japanese watch industry undertaken as joint research organized by the Japan Business History Institute, originally as one part of the project for the compilation of the company history of Hattori Seiko.

The intent of this work was to approach the subject from the viewpoint of the formation process of Japan’s modern watch industry in the period after Meiji following the First World War, focusing on production technology and the management and administration that corresponded to it. The work is in three sections, the first dealing

with the development of watch manufacturing technology in Europe and the U.S., the second with the beginnings of the modern Japanese watch industry, and the third with the progress of Seiko's watch production technology. Each section is large enough to make up a separate volume, and has independent contents.

The first section outlines the development of the watch industry in Western countries, particularly the U.S. and Switzerland. In it, a particularly interesting problem, whether the origins of the Japanese watch industry can be traced back to the Japanese-style watches (*wadokei*) of the Edo Era, is discussed. European mechanical watches were first brought to Japan in the late 16th century, and after that Japanese people modified them so that the current lack of fixed time rules would fit into a time-measuring system, making unique mechanical watches unlike those found in other parts of the world. These were the *wadokei*, which are highly valued today as objets d'art. There is a theory that the superior technology of *wadokei* may have become the basis for the creation of the modern Japanese watch industry after Meiji. But the author argues that the technological gap between the production technologies for *wadokei* and those for the modern watch industry was large, that there was no reason that *wadokei* technology as it was should serve the modern industry, and that there was a technological hiatus between the two. If confined to the technological problem, this is almost certainly so, but no doubt the problem should rather be in what form the traditional craftsmanship that produced the unique *wadokei* by imitation and modification of Western technology found its way into the modern watch industry.

To look at Sections 2 and 3 from this point of view arouses deep interest. In response to the large-scale introduction of European and American watches after the opening of the ports, the Japanese watch industry began with the purpose of stemming these imports. Most of the new technical personnel for the industry were nurtured in the early Meiji Era in the three state-owned factories of the Arsenal in Osaka and the Telegraph Office or Ordnance Factory in Tokyo. With them in leading roles, the Japanese watch industry was born in Tokyo, Osaka, Kyoto and Nagoya about 1890. After that, in the depression of the late 1890s, when the watchmakers of the Kansai region were failing and being liquidated, only the manufacturers in Nagoya and Seikosha (Precision Instrument Co.) in Tokyo remained. Nagoya's wall clocks were crude products intended mainly for China, but they found an expanding Chinese market in competition with timepieces produced in Germany and the U.S. The author shows clearly that the

Nagoya development was due to low-wage household labor, which was as much as 20% cheaper than that of other districts.

At the same time, Seikosha, founded by Kintaro Hattori in 1892, began production with wall clocks, and five years later was Japan's largest watchmaker, starting production of alarm clocks and pocket watches. The greatest challenges faced by Seikosha in its early years were competition from imports of German table clocks and the need to raise the level of the company's own technology. While it can be said that military orders during the Russo-Japanese War and the higher import tariffs after 1906 were exploited by the management of Seikosha, it was not easy to match the progress of foreign watches. But what enabled Seikosha to overcome this difficulty was the introduction of technology from the U.S. and the presence of eminent technical people within the company. The level of technical skill of those trained in the traditional crafts was high enough to allow a transition from imitation of European and American technology to the creation of new technology. In this way the foundations of the development of Seikosha were laid, according to the author.

The book traces the development of the Japanese watch industry up to the First World War from the viewpoint of technological history. The technological history approach is somewhat difficult for a non-specialist to feel at ease with where the technological explanations are detailed. The author, however, by handling production technology in relation to the organization of production, attempts to combine the technological and business history approaches. This feature of the book deserves appreciation.

But when dealing with watches as a product, there is one thing that has to be taken into consideration. This is that though watches are one kind of mechanical device and not a productive resource, they are more than objects for consumption. They may be called instruments for transmitting temporal information. If they are such special commodities, other questions must have been in the background of the development of the Japanese watch industry — not only the problem of watch production and production technology and organization, but also questions from the consumer side, such as what in fact did consumers need in the way of temporal information, and how did Japanese watch manufacturers respond to those needs? One question that I would like to put to the author is what he thinks about these problems. By approaching them, he could give us a hint about such other problems as how Japan succeeded in imposing time-discipline on workers in factories, or why Japan became the country

with the highest number of watches per person in the world.

Translated by Atsumi Nagatani