

# Academic Influence on Japan of Edmund Alexander Parkes, Pioneer of Modern Hygiene

Toshio MATSUSHITA<sup>1</sup>, Shigeru NOMURA<sup>2</sup> and Toru TAKEUCHI<sup>3</sup>

<sup>1</sup>Kagoshima Occupational Health Promotion Center, Kagoshima, Japan

<sup>2</sup>Institute for Science of Labor, Kawasaki, Japan

<sup>3</sup>Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan

## Abstract

**In Japan, Max von Pettenkofer is highly regarded as a pioneer of modern hygiene. The contribution of Edmund Alexander Parkes, however, is not yet sufficiently appreciated. This paper outlines the life and achievements of E.A. Parkes and discusses his influence in Japan.**

**Key words:** Pettenkofer, medical history, Meiji, army health, Yoshinao Kobayashi

## Introduction

The concepts and practice of modern Western hygiene were introduced to Japan in the late nineteenth century by people such as Masanori Ogata, who was the first Japanese student of Max von Pettenkofer (1818–1901). He became Japan's first professor of hygiene, occupying the chair at the University of Tokyo at 1886. Other Japanese followers of Pettenkofer were army surgeon Ohgai Mori, who also studied under Pettenkofer, Masanao Koike, and so forth. Thus, Pettenkofer, who succeeded despite his faulty epidemiology, has been credited as the founder of modern hygiene in Japan.

While the life and achievements of Pettenkofer are commonly discussed in Japanese articles in about preventive medicine and public health, British physician Edmund Alexander Parkes (1819–1876; Fig. 1) has received scant mention in Japanese texts. Even so, Parkes made enormous contributions to the field of hygiene and his influence extended even to Japan. This article sets out to remedy this neglect.

## I. Edmund A. Parkes: life and works (1, 2)

E.A. Parkes was born in Oxfordshire in England on 20 March 1819. He was a pupil at Christ's Hospital School in London and went on to study medicine at University College



Fig. 1 Edmund A. Parkes (1819–1876)

London, where he qualified in 1841.

The following year, he entered the army as an Assistant Surgeon with the York and Lancaster (84th) Regiment, with which he served in India and Burma. In the colonies, his experience and research during epidemics of cholera and dysentery provided materials for papers that appeared following his return to England and resignation from the army in 1845. In 1849 he was awarded the chair in Clinical Medicine at University College London and quickly established a reputation as a meticulous researcher and an inspiring teacher.

In 1855, during the Crimean War, he was commissioned by the War Office to set up and supervise a temporary hospital at Renkioi in the Dardanelles. This innovative facility was a prefabricated hospital conceived and designed by the famous engineer Isambard Kingdom Brunel. In 1856, he returned from Turkey to England and urged the government to improve battlefield health conditions for soldiers engaged in combat.

In 1860, upon the urging of Florence Nightingale and others,

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Reprint requests to: Toshio MATSUSHITA

Kagoshima Occupational Health Promotion Center, Japan Labour Welfare Corporation, 6F 1<sup>st</sup> Bldg., 1-38 Higashi-sengoku, Kagoshima 892-0842, Japan

TEL: +81(99)223-8100; FAX: +81(99)223-7100

E-mail: Toshio.Matsushita@mb4.seikyoku.ne.jp

he was appointed the first Professor of Military Hygiene at the newly created Army Medical School at Fort Pitt, in Chatham, Kent. Three years later he moved with the school when it was transferred to Southampton. He held this post for sixteen years until his death.

Parkes was elected to the Royal Society in 1861 and two years later was appointed to the General Medical Council. He refused, however, honors offered by the Crown. He effectively launched the science of hygiene and wrote on a very extensive range of subjects. His major contribution was *A Manual of Practical Hygiene* (3), originally published in 1864. A second edition appeared in 1866. The manual was published in several countries and underwent revision by successors up to its eighth edition in 1891.

On 15 March 1876, at Bitten near Southampton, Parkes died at the aged of 57 from tuberculosis. He and his wife are buried at Solihul, not far from Birmingham International Station, in the churchyard of St. Alphage, his wife's home parish. The grave is marked by a simple stone bearing their initials.

To commemorate the life and work of Edmund A. Parkes, in 1876, the Parkes Museum was founded. In 1888, the Sanitary Institute, forerunner of today's Royal Society for the Promotion of Health, amalgamated with the Parkes Museum of Hygiene (4). Parkes is also commemorated as a pioneer of hygiene and public health, as one of the 21 names on a frieze that decorates the exterior of the London School of Hygiene and Tropical Medicine (5). Moreover, nearly twenty years after Parkes' death, a Parkes Memorial Gold Medal was awarded in commemoration to Ronald Ross, and silver and bronze memorial prizes were awarded to postgraduate and regular officers. Today, the Parkes Professorship at the Royal Army Medical College still shows the esteem in which this dedicated pioneer is held.

## II. Japanese version of A Manual of Practical Hygiene

*Pashi Eisei Zensho*, a Japanese translation of *A Manual of Practical Hygiene*, was published in 1864. A paper by the late Hiroshi Maruyama (6) included a photograph of a two-volume edition of the work. The caption with the photograph attributes the work to Y. Kobayashi:

A Japanese translation of *A Manual of Practical Hygiene* (1864) by Yoshinao Kobayashi, which was compiled by E.A. Parkes (1818–76), who contributed to developing army health in the United Kingdom. This was used as an admirable reference book during early army health education. It was especially useful in triggering Dr. Kanehiro Takaki's idea of using an improved diet to prevent beriberi. Two separate volumes, about 1,600 pages.

Inspection of the photograph reveals that the edition shown was not translated by Yoshinao Kobayashi, who in 1873 was Editorial Director of Medical Books at the Department of Translation of the Japanese Ministry of Education. Rather, it is another version revised by army surgeon Taizo Ochiai in 1886 (7). Copies of Ochiai's revised edition are in the Kyou Library of the Takeda Science Foundation. The collection there has a set of hardcover and a set of softcover copies of the revised edition (Fig. 2). In the back matter of these copies of the revised edition



Fig. 2 Two separate copies of the Japanese version of Parkes' *A Manual of Practical Hygiene*, named '*Pashi Eisei Zensho*'

are the following comments:

A book concerning army health based on Parkes' *A Complete Book of Hygiene* was previously published and distributed among army surgeons. Our understanding of army health gradually developed and reached the current state of awareness due, in large part, to this book.

[Two lines omitted]

Now, the complete work has been published again. This time Mr. Taizo Ochiai, foremost military surgeon, took the trouble to consistently revise the text.

(Two lines omitted)

19 December Meiji [1886]

Corroboratory comments appeared in a supplementary paper included in *Fifty-Year History of the Japanese Army Medical School* (8). This paper, "The founding period of the Japanese Army Sanitary Department," was the written version of an informal talk by Tadanori Ishiguro, an Inspector of Japanese Army Physicians. A summary of the relevant comments is given below.

In producing a book especially for the education of army surgeons, the Army Health section from Parkes' *Book of Hygiene* was selected and published in translation by Yoshinao Kobayashi. Parkes was a British physician and his book was famous in Europe. This book was limited to the section of army health; later Parkes' complete work was translated into Japanese and published as *Pashi Eisei Zensho* [Complete edition of Mr. Parkes' *Hygiene*].

Although Parkes' book, or parts of it, seem to have been translated into Japanese by Yoshinao Kobayashi, we have not yet been able to see a copy of this original translation. Kobayashi's version may have been published under the name of a different author or without a proper bookbinding.

### III. Introduction of and influence of Parkes' achievements in Japan

To our knowledge, Parkes' achievements were first introduced to Japan by one of Pettenkofer's students, Shokei Shibata, who held the first chair at the Pharmacy Department at the University of Tokyo. Shibata is now held to be the founder of modern pharmacy in Japan. His *Eisei Gairon* (Introduction to Hygiene) (9), which referred to Parkes' many achievements, was published in three parts from 1879 to 1882.

Later Kuniyoshi Katayama (1883) (10) edited *Eiseigaku* (Hygiene) based on L. Hirt's *System der Gesundheitspflege für die Universität und ärztliche Praxis* (11). In Hirt's text, Parkes' book was cited in references and he was numbered among the geniuses of hygiene along with Pettenkofer, M. Lèvy, and others. Remarks in a similar vein are also seen Itaru Kawahara's *Eisei Koumoku* (Outline of Hygiene, 1894) (12) and in other publications.

Notably, the only book referred to by Kanehiro Takaki in his establishment of *Theory of Prevention of Beriberi* in 1884 (13) proposing dietary improvement, was the fifth edition of Parkes' *A Manual of Practical Hygiene*, edited by F. De Chaumont and published in 1878 (14). Takaki had studied Western medicine and army health at St. Thomas Hospital, and became Surgeon General of the Japanese Navy. He was also the first president of Jikei-Kai Medical College (charitable foundation). It is also of interest that Takaki's nutritional strategy was opposed by the 'German School' ensconced in the University of Tokyo and Army Medical Corps, which stubbornly believed that beriberi was infectious. [FROM: [http://www.jikei.ac.jp/outline/en\\_history2.html](http://www.jikei.ac.jp/outline/en_history2.html) (2003)—the copyright date at the bottom of the page]

In 1876, American instructor G. A. Leland, from Amherst College in Massachusetts, was invited to Japan. He supervised the foundation of the Taiso Denshu-sho (Physical Education Training College) (15). Consequently, he is held to be 'the father of school physical education in Japan.' The content of *Mr. Leland's Lectures on the Theory of Physical Education* (16), published in 1880–1881 and used as a textbook, shows that he drew heavily on the fourth edition (1873) of Parkes' *A Manual of Practical Hygiene*, especially Chapter XII on Exercise (17).

Since *Eisei Shinhen* (New Compilation of Hygiene) (18), which was published at the end of the nineteenth century, few books in Japanese have acknowledged Parkes.

In passing, it should be noted that when the Japanese Naval Hospital School was established in 1873, British doctor William Anderson was invited from St. Thomas Hospital to teach the naval medical students. As yet no substantiated evidence has been discovered to show whether or not Parkes' influence filtered into Japan via Anderson.

### IV. Editions of Parkes' *A Manual of Practical Hygiene* in Japanese collections

No first edition of Parkes' manual is known to be currently owned by any Japanese individual or institution. A second

edition (19) is in the possession of the National Institute of Public Health in Japan. This acquisition comprises Book I (without subtitle: Chs. I–XX) and Book II: The Service of the Soldier (Chs. I–VI).

Other editions of the books are in the possession of various other libraries, for example, Hokkaido University Library (4th ed.), University of Tsukuba Library, Central Library (4th ed.), General Library, the University of Tokyo Library System (5th ed.), Tokyo Jikeikai Medical College Library (5th ed.), National Diet Library of Japan (6th & 8th eds.), and the Library of the College of Arts and Sciences at the University of Tokyo (8th ed.).

### V. Why Parkes' achievements were not regarded as important in Japan

The contributions of Parkes have been overlooked for three main reasons:

- (1) When Jun Iwasa and Tomoyasu Sagara were put in charge of reforming the Japanese medical system in 1869, for political reasons, the Meiji Government accepted their proposal to introduce German medicine as the basis for Japanese medical education. This practically excluded the teaching of other Western medical traditions. Consequently, even British doctor William Willis, in 1868 the leading physician at the Igakusho Daibyoin (later to become the University of Tokyo Hospital), was ousted from his post and forced to move to Kagoshima Prefecture in 1870. K. Takaki, mentioned above as the discoverer of the nutritional cause of beriberi, had the good fortune to study under Willis.
- (2) In Japan, Parkes' status as a long-standing professor of the Army Medical School was much less highly regarded than Pettenkofer's status as a professor and later rector of Munich University.
- (3) Finally, Parkes died at the relatively young age of 57, and there is no record of any Japanese having studied directly under his guidance. Noone was motivated to actively champion his work.

### Conclusion

It is clear that the work of E.A. Parkes has been relatively neglected and undervalued in Japan. More research is required to clarify such issues as the influence of the first Japanese version of *A Manual of Practical Hygiene*, purportedly translated by Yoshinao Kobayashi. More concrete evidence is also needed to show how this and later translations were actually used in the education of army surgeons in the Meiji era.

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## References

- (1) Crowdy JP. A brief biographical application of Dr. Edmund Alexander Parkes, M.D., F.R.S. *J. Roy. Army. Med. Cps.* 1976; 122: 175–177.
- (2) Rosen G, Edmund A. Parkes in the development of hygiene. *J. Roy. Army. Med. Cps.* 1976; 122: 187–191.
- (3) Parkes EA. *A Manual of Practical Hygiene. Prepared Especially for Use in the Medical Services of the Army.* London: John Churchill & Sons, 1864.
- (4) Bergman BP, Miller SA St J. Historical perspectives on health. The Parkes Museum of Hygiene and the Sanitary Institute. *J. Roy. Soc. Prom. Health* 2003; 123: 55–61.
- (5) Gibson M. Behind the frieze. London: London School of Hygiene & Tropical Medicine, 1995.
- (6) Maruyama H, ed. *Nippon Kagaku Gijutsushi Taikei* (Outline of the history of Japanese scientific technology) Vol. 24 (Medicine 1). Tokyo: Daiichi Shuppan, 1965.
- (7) Ochiai T. *Pashi Eisei Zensho* (Complete edition of Mr. Parkes' hygiene), Tokyo, 1886.
- (8) Japanese Army Medical School. *Rikugun Gun-i Gakkou 50-nen-shi* (Fifty-year history of the Japanese Army Medical School), Tokyo, 1878.
- (9) Shibata S. *Eisei Gairon* (Introduction to hygiene). In 2 vols [[in the text it says three parts]]. Tokyo: Shimamura Risuke & Maruya Zenhichi, 1879, 1882.
- (10) Katayama K, ed. *Eiseigaku* (Hygiene). Tokyo, 1883.
- (11) Hirt L. *System der Gesundheitspflege für die Universität und ärztliche Praxis.* Zweite Auflage. Breslau, 1880.
- (12) Kawahara I. *Eisei Koumoku* (Outline of hygiene). Tokyo: Handaya Iseki Shokai, 1894.
- (13) Takaki K. On the cause and prevention of *kakke* (originally in English). *Transactions of the Sei-I-Kwai* 1885; 39: Suppl. No. 4: 29–37.
- (14) Matsuda M. On Parkes' "Practical Hygiene:" The only book cited by Kanehiro Takaki in his study of beriberi (in Japanese). *Jikei Idai Shi* (J Jikei Med U) 1997; 112: 579–584.
- (15) Manzenreiter W. Some Considerations on the Institutionalization of Modern Sports in Japan. <http://www.opensys.ro/rjjs/manzenreiter/2.html> (01 May 2003).
- (16) Leland GA. *Rirando-shi Kougi Taiiku-ron* (Mr. Leland's lectures on the theory of physical education: translator unknown), Tokyo, 1880–1881.
- (17) Kimura K. On the relationship between the transcription of G.A. Leland's lectures on physical education and E.A. Parkes' "A Manual of Practical Hygiene" (Japanese with English abstract). *Taiiku-shi Kenkyuu* (J Hist Phys Ed) 1997; 14: 1–15.
- (18) Mori R, Koike M. *Eisei Shinhen* (New compilation of hygiene). Tokyo: Nankodo & Matsuzaki Soukyudo, 1896–1897.
- (19) Parkes EA. *A Manual of Practical Hygiene. Prepared Especially for Use in the Medical Services of the Army.* 2nd ed., London: John Churchill & Sons, 1866.