Early Cultivators of Science in Japan

Akihito

During the period of Japan's national seclusion, Europe produced many eminent scholars, such as Newton, Lavoisier, and Linnaeus, and saw great scientific progress; meanwhile, in Japan, due to the severe restriction of exchange with Europe, European learning waned year by year.

However, in 1716, when Tokugawa Yoshimune assumed power as the eighth shogun, the domestic situation began to change.

It was during this period that Ontleedkundige Tafelen (Anatomical Tables), written originally in German by Johan Adam Kulmus in 1734, was translated from Dutch into Japanese and published under the title of Kaitai Shinsho (A New Book of Anatomy) by a group of physicians that included Sugita Genpaku, a physician of the lord of Obama.

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1 national seclusion 鎖国
2 eminent 著名な
3 Newton, Sir Isaac (1642-1727) 英国の哲学者・数学者・物理学者・天文学者；万有引力の法則を発見
4 Lavoisier (1743-94) フランスの化学者；近代化学の先駆者
5 Linnaeus (1707-78) スウェーデンの植物学者
6 wane 衰える
7 assume (役目・任務を)引き受ける、引き継ぐ、(職に)就く、(責任などを)負う
8 Johan Adam Kulmus ヨハン・アダム・クルムス
9 physician 医者

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Because there was no Dutch-Japanese dictionary in those days\(^10\), the task turned out\(^11\) to be a succession\(^12\) of tremendous difficulties.

Later, reminiscing\(^13\) about the experience, Genpaku wrote in his book *Rangaku Koto Hajime (The Beginning of Dutch Learning)* that he and his colleagues had struggled\(^14\) with a sentence as short as “The eyebrows\(^15\) are the hair growing above the eyes” throughout a long spring day and at nightfall\(^16\) were still unsure of its meaning. *A New Book of Anatomy* was finally published in 1774, 3 years after the translation was begun.

After the mid-18th century, the European influence on science in Japan became much more pronounced\(^17\). It was during this period that Carl Peter Thunberg\(^18\), who studied under Linnaeus and who later became a professor at the University of Uppsala in Sweden, came to Japan as a physician of the Dutch trade office\(^19\) in Nagasaki. The purpose of Thunberg's visit, 1 year after the publication of Genpaku's *A New Book of Anatomy*, was botanic research, and, even under the severe restriction of national seclusion, he managed to collect large numbers of plant and animal specimens\(^20\). His...
books *Flora Japonica*\textsuperscript{21} and *Fauna Japonica*\textsuperscript{22}, published upon his return home, featured\textsuperscript{23} 812 and 334 specimens, respectively.

Thunberg accompanied the chief of the Dutch trade office on his trip to Edo, which gave Japanese scientists an opportunity to meet with him. Among those who visited him in Edo were two physicians who worked on the translation of A New Book of Anatomy, Katsura-gawa Hoshu, the shogun's physician, and Nakagawa Jun'an, who served the same lord as Genpaku.

Hoshu and Jun'an maintained communication with Thunberg even after his return home, and some of the letters they wrote to him are kept in the University of Uppsala.
Exercise 1-1: T-F Questions

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本文を読んで次の各文が正しければ T を、誤りなら F を記入しなさい。

1. ( T )  Sugita Genpaku was a member of the group of physicians that translated the Anatomical Tables into the Japanese book *A New Book of Anatomy*.

2. ( F )  In his own book of reminiscences, Genpaku wrote that the translation was accomplished swiftly and with relative ease.

3. ( F )  *A New Book of Anatomy* was published in 1774, six years after the translation was begun.

4. ( F )  Peter Thunberg first came to Japan as a physician for the Swedish trade office in Nagasaki.

5. ( T )  Peter Thunberg is famous in Japan and Europe for his research and books on Japanese flora and fauna.

6. ( T )  Two Japanese doctors, Hoshu and Jun'an, were eager to meet Thunberg on his visit to Edo because they had worked on the translation of *A New Book of Anatomy*.

7. ( T )  Letters to Dr. Thunberg from Dr. Hoshu and Dr. Jun'an are stored at the University of Uppsala where Thunberg taught.
Exercise 1-2: Useful Vocabulary

次の各々の英語の定義に相当する単語を下の語群から選びなさい。

1. advancement toward a goal or to a higher stage: (  c  )
2. a rule or system that limits or controls what you can do or what is allowed to happen: (  j  )
3. someone you work with, used especially by professional people or managers: (  i  )
4. the action of making a book available for sale, or the time at which you do this: (  e  )
5. a small amount or piece of something that is taken from a plant or animal, so that it can be tested or examined: (  g  )
6. facts and knowledge related to the natural world, such as biology, chemistry, or physics: (  b  )
7. the scientific study of the structure of the human or animal body: (  a  )
8. the process by which people exchange information or express their thoughts and feelings: (  h  )
9. writing or speech that has been put into one language from another: (  f  )
10. the act of keeping yourself or someone else alone and away from other people: (  d  )

(a) anatomy  (b) science  (c) progress  (d) seclusion  (e) publication  (f) translation  
(g) specimen  (h) communication  (i) colleague  (j) restriction
Exercise 1-3: Structure and Idiomatic Expressions

次の各文のかっこの中から最も適当な単語を選びなさい。

1. She has been translating some English legends (about / into) Japanese.
2. Yesterday turned (on / out) to be the hottest day of the year.
3. He struggled (with / to) the cold as he climbed the mountain.
4. Mr. Williams made a visit (to / in) one of his students' homes.
5. Jim can communicate (from / with) Jane via computer.

Exercise 1-4: Basic Composition

次の日本語を英訳しなさい。

1. 当時、日本ではヨーロッパ科学の知識を学ぶことは困難であった。
   In those days in Japan, it was difficult to gain knowledge of European science.
2. 彼が解剖学を勉強して、日本の医学に貢献しようとしたのはこの時期のことであった。
   It was during this period that he tried to make a contribution to Japanese medicine by studying anatomy.
3. 『解体新書』の出版は、日本人の医学についての考え方を大きく変えることになった。
   The publication of Kaitai Shinsho (A New Book of Anatomy) caused Japanese people to change greatly their way of thinking about medicine.

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24 turn out (eventually happens)
25 the cold 狂気
26 made a visit to 〜を訪ねる

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