

Hiraga Gennai, Rangaku, and Foreign Language -Approaches to Foreign Language Learning during Japan's Isolation Period-

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The authors, DRB and YK, have for some time been interested in how Japanese dealt with Western culture and ways of thinking from the outside during Japan's "closed country" period (1639-1853) in the Edo Period, given the extremely limited contact allowed and all of the hurdles those in power in Japan put up in order to prevent contact with and the propagation of such ideas. They are especially interested in how the people on Shikoku (in particular, Ehime Prefecture), given its long historical isolation even within Japan, came into contact with and passed along ideas from the outside.

This paper touches upon examples of foreign language use found in several of the works of Hiraga Gennai, who was originally from Shikoku. Research conducted for this work was supported by JSPS KAKENHI Grant Number 18H00979.

PRELIMINARIES

Recently, one of the authors was browsing through a Ph.D. dissertation (De Groot, 2005) which examines the study of the Dutch language in Japan during its isolationist period. Interestingly enough, in this thesis of nearly 300 pages, he was not able to find any reference to Hiraga Gennai, a historical figure from Japan who has even been considered by some (Leigh, 2015) to be the father of *Rangaku* (Dutch Studies). (Note: there was a very brief mention of one Kamiya Gennai; not the same person.)

This is by no means meant to play down the scholarly value of the work—it provides a very enlightening, in-depth look into the history of Dutch language study in Japan during the Edo Period—but it does seem odd that Gennai did not merit some sort of a mention, even in a footnote. Perhaps it is because he was more well-known for being involved in so many other different areas and undertakings (some quite sensational) that his efforts in language study tend to be downplayed.

In this paper, we would like to briefly discuss who Hiraga Gennai was and what he did, what the *Rangaku* movement was and Gennai's connection to it, and examples of foreign terminology in some of his writings.

HIRAGA GENNAI: SOME HIGHLIGHTS OF HIS LIFE

Hiraga Gennai has been described as being the "Leonardo Da Vinci of Japan" (Borriello, 2013), an "irascible, eccentric polymath" (Morris-Suzuki, 1991 p.89), and a "Renaissance man" (Minowa, 2014), among other appellations. He was also known as being a scholar, scientist, geologist, popular author (Jones, 1968), artist, and even as a rather slick marketer (Minowa, 2014).

By all accounts, Gennai led a very colorful, if relatively short (1728-1779) life. He was born into a low-ranking samurai family in 1728 in the Takamatsu Domain (present-day Kagawa Prefecture on Shikoku). He showed an early aptitude for *honzōgaku*, "the study of medicinal herbs" (or "natural history") and became a *kusuribōzu* "person in charge of medicine" (Borriello, 2013), and, when he was eighteen, the feudal lord appointed him to be a pharmacologist in the castle herb garden in Takamatsu. He even attempted to cultivate two foreign crops that the Shogunate government was forced to import every year: ginseng and sugarcane (Borriello, 2013).

Nearly without exception, authors—(for example, Leigh, 2015; Borriello, 2013; Smith, 2009, etc.)—who write about Gennai indicate that he went to Nagasaki at least once, in 1752, to study for a period of about a year and that that was his first contact with Western learning and Dutch studies. In his research on Gennai, however, YF (Fukuda, 2013) has not been able to find any concrete evidence that Gennai did, in fact, study in Nagasaki at this time. Even if such a trip did occur, his knowledge of *Rangaku* appears to have been developed to a great extent through informal meetings and self-study rather than through any formal course of education in the field. One can wonder how Gennai became interested in and was able to become so aware of and conversant with *Rangaku* during the early part of his life spent in a relatively remote and backwater region on Shikoku.

A major change in Gennai's life took place after this supposed trip to Nagasaki when, in 1754, he left Takamatsu after resigning from his position there and handing over the headship of his household to a relative. Though he did travel a lot, he spent a lot of time in Edo, where he came into contact with the Dutch who had to make annual visits to the capital.

Throughout his life, Gennai worked toward using Western science and technology as a means to contribute to Japanese society by developing "transplant industries" (Smith, 2009 p.81): in other words, domestic replacements for imported commodities. While in Edo, he held medical and pharmaceutical trade shows that became very popular at the time. He was also an inventor and developed (among other things) a compass, fire-resistant asbestos cloth, a thermometer, and a static electricity generator that he called the *Elekiter* (based on a Dutch one that he had repaired).

Gennai was one of the main movers in shifting natural history from the correct naming of plants and animals to exploring and developing practical uses of natural resources. (Morris-Suzuki, 1991). While he became quite famous through his inventions and scientific contributions, he also applied himself to the humanities; he was a prolific author, and he also studied Western painting techniques and came to have a significant influence on art forms of his time.

One example of how Gennai was able to apply himself to both the arts and the sciences came in 1773, when he was invited by the lord of the Akita domain to give advice on copper mines. As a scholar of *Rangaku*, he was also called upon to convey his knowledge of Western artistic concepts and methods, thereby significantly influencing artists—including Odano Naotake (1749-1780)—of what would come to be known as the Akita Ranga "Dutch Paintings" art style in Akita (Abe, 2018).

As many have noted, he was a man ahead of his time, and often his work was not understood by his contemporaries. While his many extraordinary activities may have earned him quite a reputation, his forward thinking never got him very far because his efforts were often either misunderstood or disregarded by officials (Smith, 2009). Ultimately, his lifestyle went into a rather catastrophic tailspin, culminating in him killing a man and soon thereafter dying in prison.

Unfortunately, after Gennai had been sent to prison and subsequently died, his disgrace had a detrimental effect on those who had worked with him. As one example of this, the artist Odano was dismissed from his official position, and this contributed to the short life of the Akita school, but the art style—including the influence from Gennai—had left its mark on artists of the time.

His friend, Sugita Genpaku, author of the famous medical translation *Kaitai Shinsho* ("A New Text on Anatomy") noted his death with regret, commenting that he was "an exceptional person." (NDL, 2009)

As mentioned earlier, Gennai was also a popular author; however, the focus on his erratic lifestyle and his contributions to science and technology have led to there being less of an emphasis on his literary works. He himself wrote that his literary endeavors were merely a way to earn money (Smith, 2009). It is, however, his writings that we would like to discuss here.

RANGAKU AND ITS PLACE IN JAPANESE HISTORY

After Japan entered its isolationist period in the early- to mid-17th century, the Dutch became "Japan's only window" (Yamashita, 2015 p.63) to the Western world, a situation that would persist for over two centuries until Japan was opened up after Perry's "visits". During this period, essentially all knowledge of Western things (notably in the areas of science, technology, and medicine) which was allowed to come into the country had to enter by way of the Dutch on the little artificial island of Dejima in the bay of Nagasaki.

Typically, this knowledge was transmitted to the Japanese via the Dutch language and came to be known as *Rangaku*, or "Dutch Studies". It should be made clear that, while the Dutch became the medium through which the knowledge came to the Japanese, that did not mean that the

knowledge itself was necessarily Dutch; some of it was, of course, but there was also a lot that was merely introduced by the Dutch on Dejima.

According to Goodman (2005 pp.527-528), *Rangaku* should not be considered to be "a complete system of knowledge constructed on the basis of a single world-view." Instead, it consisted of "a random accumulation of certain quasi-scientific and technological information acquired from Western Europe" either through the extremely restricted and controlled contact with the Dutch or else "indirectly through the Chinese trade in Nagasaki."

After the opening of Japan in 1854, once the Japanese were no longer totally dependent on the Dutch for the study of Western sciences, a new term, *Yōgaku*, "Occidental Science", began to supplant the word *Rangaku* (Vos, 2014).

RANGAKU AND FOREIGN LANGUAGE

During the heyday of *Rangaku*, contact between the Dutch and the Japanese government had to go through and was, in many ways, controlled by the *Oranda-Tsūji* or "translators of Dutch". In contrast to the translators for the Chinese, the *Kara-Tsūji*—who were families of translators originally from China—the *Oranda-Tsūji* were Japanese. However, similarly to the Chinese translators, and as so often happened in such cases in Japan, the profession itself became hereditary (Yamashita, 2015), and actually the level of competency in the Dutch language of the translators has been called into question.

The general impression one gathers about the shape the study of Dutch in Isolationist Japan is that the translators (the *Nagasaki-Tsūji* or *Oranda-Tsūji*) would typically transcribe into katakana the Dutch terms they had run across (and managed to remember!), producing manuscripts of what are, for the most part, long vocabulary lists. Although in recent years some collections of conversational sentences in Dutch and Japanese have also been found—which would indicate that the *Tsūji* did pay some attention to grammar and syntax on occasion—their primary focus was on vocabulary, which is why we see such a number of vocabulary lists, preserved mostly as manuscripts in libraries (Vande Walle, 1994).

FOREIGN EXPRESSIONS USED IN HIRAGA'S WORKS

What we see in Gennai's works are also vocabulary items, but he also provides an interesting case of how some people conducted Dutch studies at the time. Even with an extremely limited knowledge of the Dutch language and being outside the sphere of the *Nagasaki-Tsūji*, he nevertheless managed to collect various works on natural history and also meet with members of the Dutch delegations during their visits to Edo.

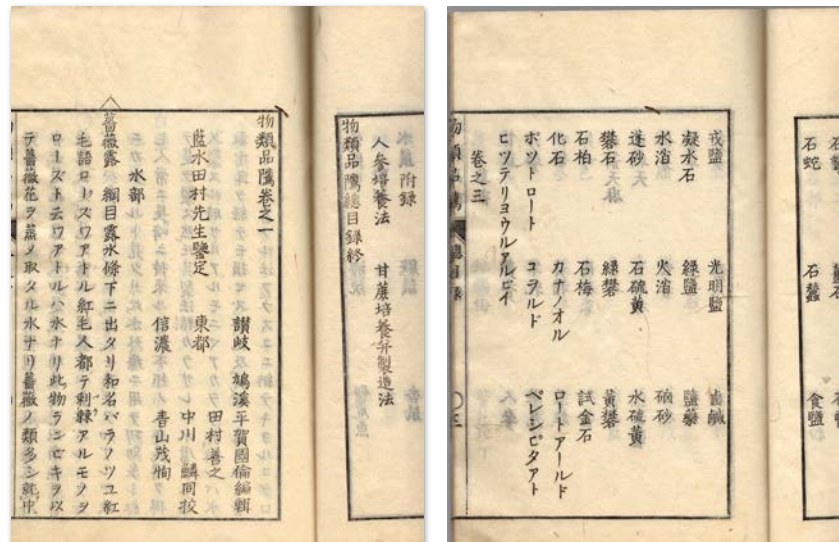


Figure 1: Sample pages from original work (Fukuda, 2013)

We will now look at foreign forms found in several of Gennai's works. Figure 1 shows an example of such text (Fukuda, 2013). The first book examined, *Butsurui hinshitsu* (Gennai, 1763), classifies and introduces articles displayed at the trade shows mentioned above, and includes the "Dutch names of Chinese medicine", such as *slangesteem*, *kaaiman*, *hagedis*, etc. (NDL, 2009)

The two appendices at the end of this paper lay out and categorize a number of foreign expressions that YF found in two of Gennai's works. They are nearly identical in structure, with Appendix 1 giving the Japanese, and Appendix 2 providing the romanized version. The first column is what the modern-day Japanese form would be (or is thought to be), followed by Gennai's *wamei* ("Japanese term", abbreviated *J2* here) and the foreign terms themselves, which are categorized into whether they are from *komogo* ("red haired" language), *bango* ("barbarian" language), or other languages/dialects. Table 1 lists the categories and abbreviations used.

Table 1
Categories and abbreviations in Appendices 1 & 2

Original Terms	Romanized	Meaning	Abbreviated Forms
和名	Wamei	Japanese Form	J1
紅毛語	Kōmō-go	Dutch (Northern European)	NE
ラテ(イ)ン語	Rate(i)n-go	Latin	L
蛮	Ban	Southern European (Spanish/Portuguese)	R (Romance)
蝦夷	Ezo	Ezo (Ainu)	Ezo
和・方言	Wa-hōgen	Japanese Dialectal	JD

The one difference in the two appendices is that a final column has been added in Appendix 2 (the romanized version), which is our attempt to divide the terms into the following broad categories: B (Botany or Biology), G (Geography), M (Medical) D (Daily Life), and O (Other).

Of the 66 items that were categorized, 30 (or nearly half) relate to biology or botany (B), hardly surprising considering what the works are about. From the remaining terms, we get 17 concerning geology (G), 16 about daily life (D), and two which were medical (M) terms. There was one item in the Other (O) category—(3-5) *jogo*—which was a grammatical term.

The appendices in and of themselves constitute the main analysis of the forms, but we will carry out a very short discussion of some of the categorization done by Gennai here. We are using a two-number format, with the first number representing the volume or book the form was found in and the second number indicating the number of the item itself within that volume or book (i.e., the numbers found in the first column.) The numbering systems correspond in the two appendices, so the reader is free to choose which one they wish to refer to.

For example, let us look at [1-2], in which he uses *shabon* as the Japanese term for "soap", a term which has now been generally supplanted by the Sino-Japanese word *sekken* (Vos, 2014). He gives both the NE and Latin forms for "soap", without commenting on how his Japanese term *shabon* actually comes from the Portuguese *sabão*. Neither of the authors is familiar with Dutch, but a dictionary check shows *zeep* as being the modern Dutch translation of "soap", which is similar to the *seppu* pronunciation that he provides.

Skipping down to [2-9], we see *guroun* (or *gurōn*) as being a Romance (Portuguese or Spanish) term; however, if this, in fact, is supposed to be *ryokushoku* "green", then the Dutch *groen* seems to be closer than either than the *verde* from either of the Romance languages. Perhaps Gennai mistook the language the term came from.

Another example of this concern can be seen in the series [5-2] to [5-5] from *Kannetsushōkōkei*. The forms *hēte*, *wārumu*, *gōto*, and *sēru*, ("hot", "warm", "cold", and "very", respectively) have all been categorized as coming from the "Southern Barbarian" tongue, but actually they seem closer to *heet*, *warm*, *koude*, and *zeer*, respectively in Modern Dutch than the cognates in the Romance languages. Even *thermometer* and *extra* can be found in Dutch (albeit as loanwords), so, at least with these forms, the categorization by Gennai comes into question.

(1) and (2) below show two short excerpts from Gennai's (1765) *Kakanpu Ryakusetsu*—in the original and romanized version—along with a rough translation in (3). In the first example, he provides two ways of saying *asbestos* in Latin and, in the second, he uses European names for the geographical areas.

- (1) ラテイン語にて、あみやんとす、又あすべすとす、ともいへり。
とるこらんと、とは、西域の国の名なり。凡世界を四つにわり、ゑろつば、あぢや、あふりか、あしりか、といふ。とるこ国はあぢやの西、ゑろつばの境にて、唐土より数千里西北にあたり。
- (2) Ratein-go nite, amiyantosu, mata asubesutosu, tomo iheri.
Torukoranto, to wa, saiiki no kuni no nanari. Ōsekai o yottsu ni wari, weroppa, ajia, afurika, ashirika, to ifu. Torukokuni wa a ajia no nishi, weroppa no sakai nite, morokoshi yori sū sen ri seihoku ni atareri.
- (3) In Latin, it is called *amiyantosu* ("amianto" Por. Span.) or *asubesutosu* ("asbestos").
Turkoranto (Turkey?) is the name of a country in the Western Regions. There are four major lands: *Weroppa* (Europe), *Ajia* (Asia), *Afrika* (Africa), and *Ashika* (?). Turkey is at the edge of Europe, several thousand *ri* (a distance of about 3.9 km) to the northwest of *Morokoshi* (China).

FINAL OBSERVATIONS

The authors have long been interested in how Japanese in isolationist Japan who had an interest in Western knowledge and culture (including religion) were able to come into contact with such outside ideas, how they approached those ideas, and how they kept them alive. As in the case of Christianity, the Japanese who were interested in Western thought and knowledge were essentially left to their own devices, having to face many obstacles (including, in the case of religion, torture and death) placed before them by the Shogunate government. In spite of this, interest in what is Western persisted throughout the entire isolationist period.

In the case of Gennai's use of foreign expressions in his writings, it is not at all surprising that he might get the origins of some of forms wrong; Western literature was banned or restricted to varying degrees at various times throughout the Shogunate rule, which made it difficult to find accurate source material. What one should appreciate is that he made such an effort to acquire and pass on this knowledge to others.

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Appendix 1: Foreign Terms in Sample Texts (in Japanese)

『物類品隲』卷1(1)

1	薔薇露	バラノツユ (和名)	ロウズワアトル (紅毛語)	
2	石鹼	シヤボン (和名)	セツプ (紅毛語)	サボウネ (ラテン語)
3	南馬瑙		アガアトステイン (紅毛語)	
4	雲母	キララ (和名)	アラビヤガラアス (紅毛語)	

『物類品隲』卷2(2)

1	粉霜		メリクリヤルドーリス (紅毛語)	
2	水銀		メリクリヤル (紅毛語)	
3	殺す		ドーリス (紅毛語)	
4	黄石脂		ボウリスアルメニヤ (紅毛語)	
5	回回青		ペレインブラウウ (紅毛語)	
6	金剛石		ギヤマンデ (紅毛語)	デヤマン (紅毛語)
7	食塩	シホ (和名)	ソウト (紅毛語)	サルト (ラテン語)
8	緑塩			スパンスグロウン (蛮)
9	緑色			グロウン (蛮)
10	塩菜		サクシイリソート (紅毛語)	
11	礪砂		サルアルモニヤアカ (紅毛語)	
12			ブルートステイン (紅毛語)	カナノラル (蛮)
13	血		ブルート (紅毛語)	
14	石		ステイン (紅毛語)	
15	石筆		ロートアールド (紅毛語)	
16	赤色		ロート (紅毛語)	
17	土		アールド (紅毛語)	
18	黒石筆		ポットロート (紅毛語)	
19		シヤムデイ (和名)		コラルド (紅毛語)
20			ペレシピタアト (紅毛語)	
21			ヒツテリヨウルアルビイ (紅毛語)	

『物類品隲』卷3(3)

1	泊夫藍		フロウリスエンタアリス (紅毛語)	サフラン (ラテン語)
			コロウクスヲリエンタアリ (紅毛語)	
2	席			アンペラ (蛮)
3	含生草	安産樹 (和名)	ロウズハンエリガウ (紅毛語)	
4	刺棘		ロウズ (紅毛語)	
5	助語		ハン (紅毛語)	
6	霸王鞭	キリンカク (和名)	イボウエホウエ (紅毛語)	
7		マンルサウ (和名)	ローズマレイン (紅毛語)	
8				ケンフル (蛮)
9		ヤマカゴメ (和・方言)		イケマ (蝦夷)

『物類品隣』巻4(4)

1	豌豆		グルウンエルテ (紅毛語)
2	菘	菘ナ (和名)	コノルコール (紅毛語)
3	蕪青	カブラ (和名)	ランマナス (紅毛語)
4	菜菔	オホネ、ダイコン (和名)	ロートラテイス (紅毛語)
5	菘菜	フダンナ、タウチサ (和名)	ロートバート (紅毛語)
6	高苜	チサ (和名)	アンテイヒ (紅毛語)
7	篤耨香		テレメンテイナ (紅毛語)
8	胆八香	ポルトガルノ油 (和名)	ヲヲリヨヲレイヒ (紅毛語)
9	油		ヲヲリヨ (紅毛語)
10	(オリーブ)		ヲレイヒ (紅毛語)
11	木綿		カトウンボラム (紅毛語)
12	草綿		カトウンコロイト (紅毛語)
13	綿		カトウン (紅毛語)
14	木		ボラム (紅毛語)
15	草		コロイト (紅毛語)
16	(コルク)		キヲルコ (紅毛語)
17	(栓、外っば)		ボロツプ (紅毛語)
18	烏薬		サツサフラス (紅毛語)
19	(芝)		エブリコ (蝦夷)
20			ルザラシ (紅毛語)
21	芫菁		カンターリイ (紅毛語)
22			スパンスフリイゲ (紅毛語)
23	蠅		フリイゲ (紅毛語)
24	竜骨		スランガステイン (紅毛語)
25	鼈龍		カアイマン (紅毛語)
26	蛤蚧		ハアガテス (紅毛語)

『寒熱昇降計』(5)

1	寒熱昇降計	タルモメートル (蛮)
2	熱い	ヘーテ (蛮)
3	あたたかい	ワールム (蛮)
4	寒い	ゴート (蛮)
5	大いに	セール (蛮)
6	きわめて	エキスタラ (蛮)

Appendix 2: Romanized Version of the Forms

Butsurui Hinshitsu Vol 1(1)

1	shōbiro	baranotsuyu (J2)	rōzuwātoru (NE)		B
2	sekken	shabon (J2)	seppu (NE)	saboune (ratein-go)	D
3	minamimenō		agātosutein (NE)		B
4	unmo	kirara (J2)	arabiyagarāsu (NE)		G

Butsurui Hinshitsu Vol 2(2)

1	funsō		shimo merikuriyarudōrisu (NE)		G
2	suigin		merikuriyaru (NE)		G
3	korosu		dōrisu (NE)		D
4	kōsekishi		bōrisuarumeniya (NE)		G
5	kaikaisei		pereinburāu (NE)		G
6	kongōseki		giyamande (NE)	deyaman (NE)	G
7	shokuen	shiho (J2)	sōto (NE)	saruto(Latin)	G
8	ryokuen			supansuguroun (R)	G
9	ryokushoku			guroun (R)	G
10	enyaku		sakushiirisōto (NE)		G
11	dosa		saruarumoniya (NE)		G
12			burūtosutein (NE)	kananoworu (R)	G
13	chi		burūto (NE)		M
14	ishi		sutein (NE)		D
15	sekihitsu		rōtoārudo (NE)		G
16	akairo		rōto (NE)		D
17	tsuchi		ārudo (NE)		D
18	kokusekihitsu		potsutorōto (NE)		G
19		shiyamudei (J2)	koworudo (NE)		G
20			pereshipitāto (NE)		G
21			hitsuteriyōruarubī (NE)		G

Butsurui Hinshitsu Vol 3(3)

1	safuran		furōrisuwentārisu (NE)	safuran(Latin)	B
			korōkusuworientāri (NE)		
2	seki			anpera (R)	D
3	ganshōsō	anzan-ju (J2)	rōzuhanwerigau (NE)		B
4	shikyoku		rōzu (NE)		B
5	jogo		han (NE)		O
6	haōben		ibōwehōwe (NE)		B
7		manrusau (J2)	rōzumarein (NE)		B
8				kenfuru (R)	B
9		yamakagome(JD)		ikema (Ezo)	

Butsurui Hinshitsu Vol 4(4)

1	endō		gurūnwerute (NE)	B
2	shō	suzuna na (J2)	konorukōru (NE)	B
3	kaburaaō	kabura (J2)	ranmanasu (NE)	B
4	raifuku	ohone, daikon(J2)	rōtorateisu (NE)	B
5	?	fudan'na, tauchisa (J2)	rōtobēto (NE)	B
6	chisha	chisa (J2)	anteihi (NE)	B
7	tokujokuka		terementaina (NE)	B
8	tanhachika	porutogaru no abura (J2)	woworiyoworeihi (NE)	B
9	abura		woworiyo (NE)	D
10	(orību)		woreihi (NE)	D
11	momen		katōnbowomu (NE)	B
12	kusawata		katōnkorōito (NE)	B
13	wata		katōn (NE)	B
14	kī		bowomu (NE)	B
15	kusa		koroito (NE)	B
16	(koruku)		kiworuko (NE)	D
17	furasuko		boroppu (NE)	D
18	uyaku		sassafurasu (NE)	M
19	(shiba)		weburiko (Ezo)	B
20			ruzarashi (NE)	B
21	gensei		kantārī (NE)	B
22			supansufurīge (NE)	B
23	hae		furīge (NE)	B
24	yūkotsu		surangasutein (NE)	B
25	daryo		kāīman (NE)	B
26	gōkai		hāgatesu (NE)	B

Kannetsushōkōkei(5)

1	kannetsushōkōkei		tarumomeitoru (R)	D
2	atsui		hēte (R)	D
3	atatakai		wārumu (R)	D
4	samui		gōto (R)	D
5	ōini		sēru (R)	D
6	kiwamete		ekisutara (R)	D