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**THANK YOU FRANCISCO XAVIER:  
AN ESSAY IN THE USE OF MICRO-DATA FOR  
HISTORICAL DEMOGRAPHY OF TOKUGAWA JAPAN\***

AKIRA HAYAMI

I. JAPANESE POPULATION DATA FOR THE PRE-CENSUS ERA

Japan's first true census, in the modern sense of the term, was conducted in 1920. I would like to open by discussing the nature of population data for Japan prior to that date.

*A. 1872–1920*

1. For the half century immediately preceding that first census the Japanese population was registered under a household registration system (*koseki-seido*) instituted by the Meiji government in 1872. These data were collected at the village or town level in town-to-town registers, and then aggregated at the county, prefectural and national levels. There was French technical advice for the national aggregate statistics, so the national vital statistics appear in both Japanese and French.

2. Police statistics on residence. I regard this as the fore-runner of the modern Japanese census.

3. Surveys conducted by the military. The military services were the strongest nationwide organizations in the 1870's and 1880's, so that in some instances their statistics are more complete and reliable than item 1, above, for these decades.

*B. Prior to 1872*

1. Japan adopted a Chinese style of household registration in the mid-seventh century, and fragments of these registration surveys are extant for the seventh and eighth centuries. I will not offer a detailed discussion of these data here.

2. There is a vast gap of about eight centuries for which virtually no population data exist, from the ninth to sixteenth century.

3. However, from the early seventeenth century, both the Tokugawa

\* This paper was read at the Toronto CISS-CSNA Workshop on "The Sources of Asian History and the Generation of Quantifiable Historical Indicators," on February 28 and 29, 1976. I would like to acknowledge the valuable assistance of my friend Ronald Toby, University of Illinois, in the preparation of this paper. He did not merely translate my work, but by dint of his profound intellectual curiosity gave me copious advice and encouragement. Some parts of this paper are in fact the results of his ideas. This paper would surely not have reached its present form without his cooperation. I of course take full responsibility for its content.

government and various daimyo governments began to gather population data on the regions under their control.

a) Register of Residents (*ninbetsu chō*). These are registers for surveys which were conducted irregularly, on an *ad hoc* basis throughout the country; the earliest extant survey is that for Kokura *han*, in northern Kyushu, from 1614. This survey, and several others of the same period and type, are available in printed form.<sup>1</sup>

b) Religious Affiliation Investigation Registers (*shūmon aratame chō*). These constitute the best available population data for pre-modern Japan, and it is these that I would like to discuss in detail here.

c) Nationwide population statistics compiled by the bakufu from its own and daimyo's surveys, "a" and "b" above, in 1721, 1726, and hexennially thereafter until 1846 (*shigo aratame*).<sup>2</sup>

d) Private records. There is a profusion of genealogies, temple records and the like, in various states of preservation, and many of these date back over 1,000 years. Such records are still being compiled today. There is a demographic study based on one of the best of these records, a temple burial record, similar to the parish registers of the Christian world, covering a 400 year period.<sup>3</sup>

## II. SHŪMON ARATAME CHŌ

These registers are the product of the anti-Christian policies of the Tokugawa bakufu (government). Policies for the suppression and control of Christianity had started earlier, in the period of Toyotomi Hideyoshi (1536–98), but Tokugawa Ieyasu (1542–1616, the founder of the Tokugawa regime which governed Japan from 1603 to 1868) and his heirs continued and strengthened these policies. After the sequence of external policies established in the 1630's and 1640's—generally seen as the beginning of 'sakoku' or the Tokugawa isolation—and the pacification of the Shimabara and Amakusa rebellions of 1637–38, said to be the last organized Christian resistance to repression, the bakufu perfected and completed its anti-Christian policies. One of these policies was the institution of a system of investigation of religious sect affiliation, called *shūmon aratame*.

The *shūmon aratame* system entailed assuring that every Japanese was a Buddhist (i.e., not a Christian) by requiring that every family or individual in Japan be affiliated with a Buddhist temple, and that each temple certify to the authorities the affiliation of every family member.

At first, from the 1630s, these investigations were carried out only in territory under direct bakufu control, approximately one-fourth of the country, and were

<sup>1</sup> Akira Hayami, "The Population at the Beginning of the Tokugawa Period." *Keio Economic Studies*. Vol. 4, 1966–67.

<sup>2</sup> Akira Hayami, "Mouvements de longue durée et structures japonaises de la population à l'époque de Tokugawa." *Annales de démographie historique*. 1971.

<sup>3</sup> Suda Keizō, *Hida "O"-jiin kakochō no kenkyū* (Study of the Death Records of "O" Temple in Hida Province). Takayama (private edition). 1973.

made mandatory for all jurisdictions in 1665. Members of the samurai caste were investigated and registered, by families, by the administrative units to which they were attached. Peasants and town residents were handled by the administration of the place where they resided.

This system of forced affiliation, known as the *jidan* system, meant that under the Tokugawa regime temples were never at a loss for members. The enforcement of *shūmon aratame* was particularly strict in western Kyushu, where Christianity had been most widespread; in some areas people were even required to trample on images of Mary and Jesus (*fumie*, “trampling pictures”) to prove their freedom from contamination. Moreover, the investigation and registration of reconverted Christians (*korobi*) and their descendents was especially strict, and was even kept separate from others.

In general the system required residents to report at specified times to the officials of their town or village. The village or town unit documents compiled by such local officials are generally called *shūmon aratame chō*. The actual titles of specific registers vary widely with time and location throughout the Edo period. An example of one such *shūmon aratame chō* from the period just after the institution of the *jidan* system in bakufu territory is reproduced in Figure 1.<sup>4</sup> It is not clear whether *shūmon aratame chō* were prepared regularly on an annual basis before 1665, but in that year the bakufu ordered all daimyos to conduct sect-affiliation investigations and compile registers annually. In 1671 the order was repeated in more thoroughgoing form, and from 1671 surveys were in fact conducted annually throughout the country up to 1871, when Christianity was finally recognized by the Meiji government. At the present time there is insufficient evidence to state flatly that every daimyo followed this order and commenced annual investigations. For example, in three of the largest *tozama* fiefs, Satsuma, Chōshū and Tosa—three *han* most active in the Meiji restoration—we have no *shūmon aratame chō* extant today, although there is evidence that they conducted annual investigations. But most daimyos followed these orders, and they, as well as agents (*daikan*) in the bakufu’s territories began to compile *shūmon aratame chō* on an annual basis.

There was one other major development in 1671 which had implications for the *jidan* system. Both the bakufu and the daimyos had, since the early 17th century, kept population surveys—a separate category from *shūmon aratame chō*—as a data base from which to levy labor services on the population under their control. These labor services were not for regular agricultural labor as in the mediaeval European manors, but for such irregular tasks as wartime labor services, freight transport, construction and the like.<sup>5</sup> These population surveys (*ninbetsu aratame*), along with the land surveys (*kenchi*) conducted from the late 16th century, constituted the basic data base for administrative control by the daimyo. In 1671,

<sup>4</sup> *Shūmon aratame chō* of Niremata village, Anpachi county, Mino Province in 1638, the oldest ever found in the province.

<sup>5</sup> Hayami (1966–67).

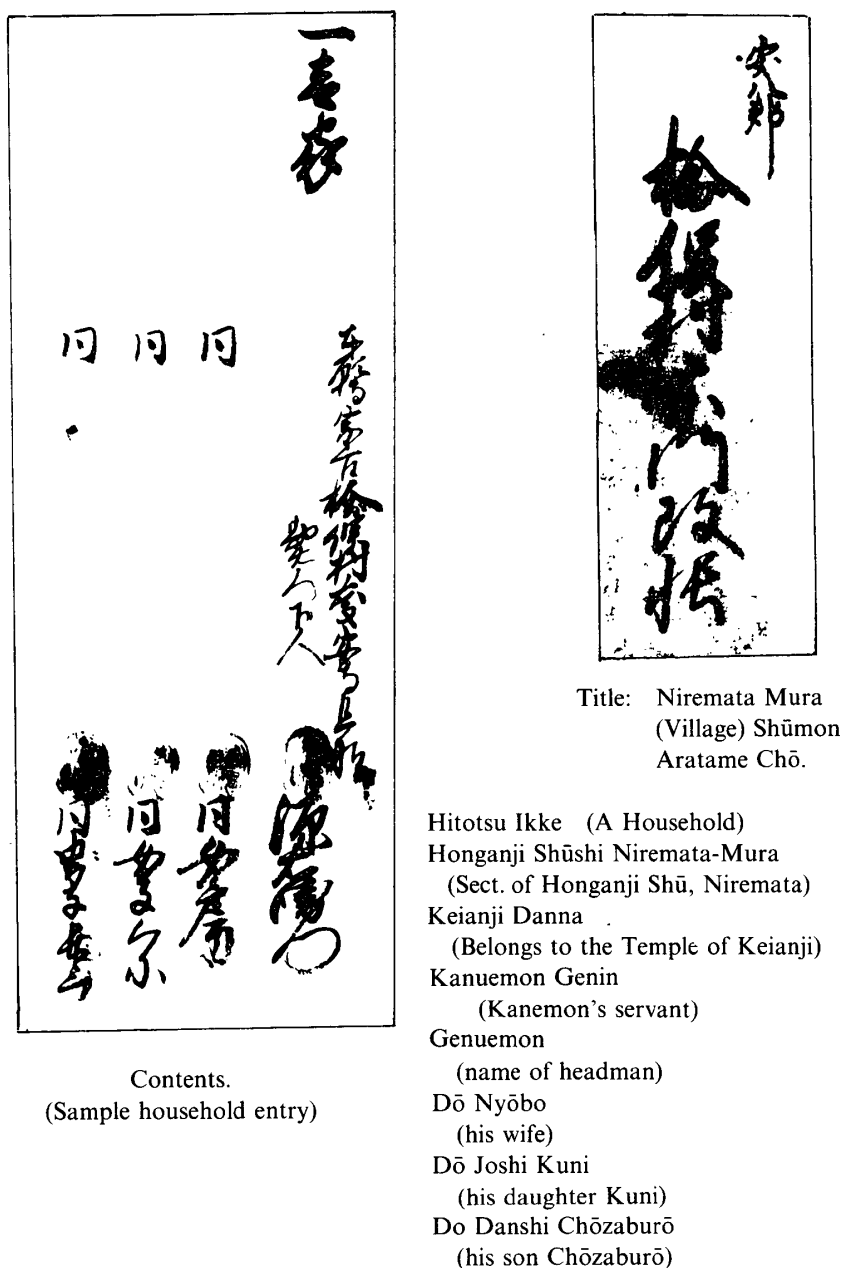
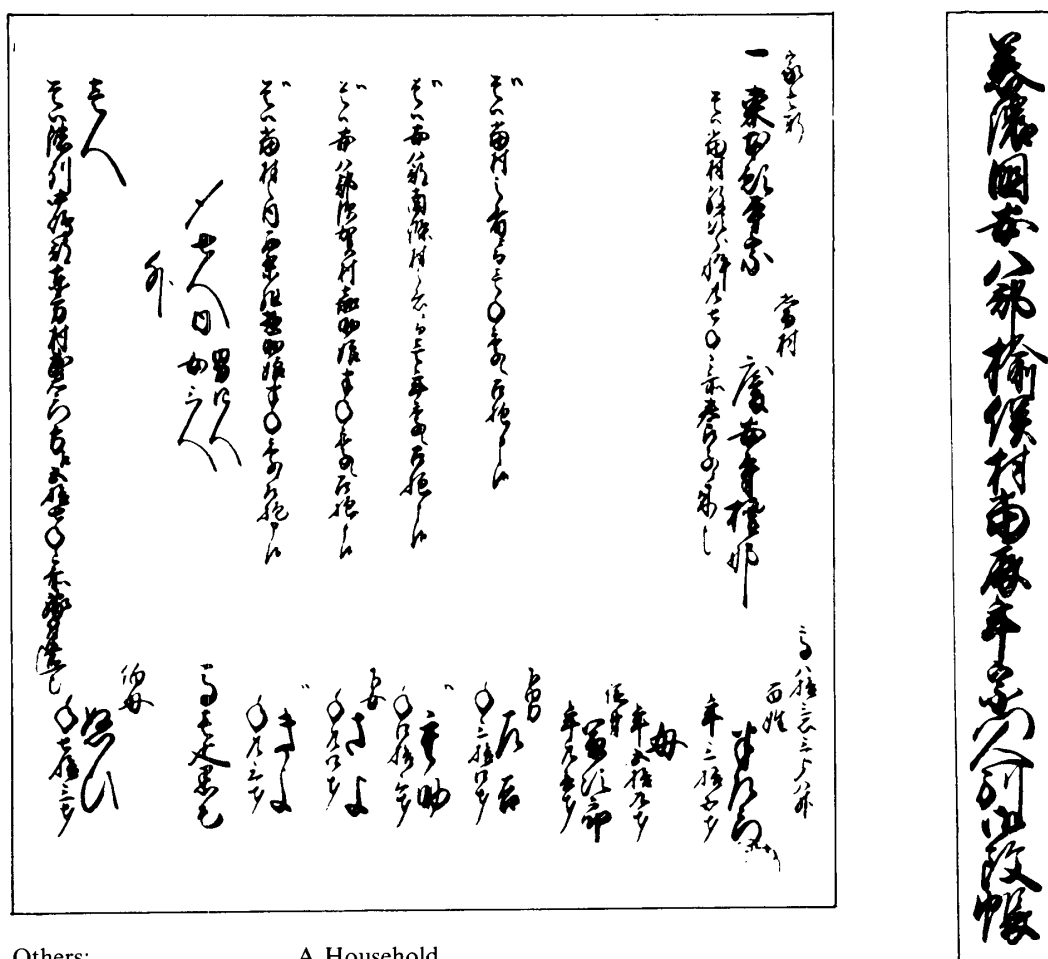


Fig. 1. The *Shūmon Aratame Chō* of Niremata Village in 1638.

as a result of the bakufu's order, the *jidān*-system survey and the population surveys were combined into a single system. It is for this reason that the post-1671 registers are often called "Registers of the Investigation of Sect Affiliation and Population" (*shūmon ninbetsu aratame chō*). Although there is no explicit documentary authority on the reasons these two surveys were combined, I conjecture these explanations: 1. Both surveys had the entire population as their subject. 2. By 1670 the bakufu believed that Christianity had been exterminated. 3. With the end of internal warfare, and of the burst of construction activity that



Others:  
Nuhi, aunt,  
married to  
Buemon's  
family, in  
Higashikata  
Village 57  
years ago.

A Household.  
Higashihonganji Sect.  
Belongs to Keianji of this village.  
Land Holding: 83 *koku* 3 to 8 *shō* (assessment  
in value of rice production).  
Farmer.  
Hanzaemon, age 35 *sai* adopted from  
Monjiro family 27 years ago. (male)  
Mother, age 59 *sai*.  
Tomijiro, age 21 *sai*, cousin. (male)  
Sakichi, age 34 *sai*, servant. (male)  
comes from this village.

Title: Mino  
no Kuni Anpachi  
Gun Niremata  
Mura Tō Tatsu-  
Doshi Shūmon  
Ninbetsu  
Aratame Chō.

Total members: 7,  
Horse: 1; color,  
black.

Fig. 2. The Shumon Ninbetsu Aratame Chō of Niremata Village in 1796.

characterized the first half of the 17th century, the strategic need for *ninbetsu chō* had disappeared. 4. At just this time the administrative concerns of both the bakufu and the daimyos had turned to the civil administration of their domains, and they felt the need for annual compilations of population statistics.

Figure 2 is an example of a *shūmon ninbetsu aratame chō* from the same village as that in Figure 1, but about 160 years later. Comparing these two, we find the entries in the 1638 register to be quite simple, and see that the document was compiled for the sole purpose of sect affiliation control. For example, the names of household members are given, but their ages are omitted. This represents the typical form of the early *shūmon aratame chō*, and is imperfect at best for use as a source for demographic study. In some parts of the country—e.g. Osaka and Matsuyama *han*—the data remain in this form, with no ages given, right down to 1871. By contrast, the 1796 register is much richer in its contents, giving not only the age of each individual, but assessed value of his land holdings at the time of the last land survey,<sup>6</sup> number and type of cattle, and number, type and size of buildings.

The entries also include in most cases information on birth and death, changes in marital status, residence, and other categories that were deemed of administrative significance. In short, these village-level registers contain most of the information sought in the modern census form. In fact these registers were used in the Edo period as a form of residence register. The principal, and most significant difference between these and the modern residence register is that the *shūmon aratame chō* were compiled anew *every year*.

In general practice village officials prepared two copies of the *shūmon aratame chō*, one for filing with the daimyo or the bakufu agent responsible for the area, the other to be kept by the village official for internal administrative use. The copies submitted to the lord seem in fact to have been used very little, and then only for calculation of aggregate population at the fief level. It will be seen at a glance that these registers must soon have accumulated to a vast amount of paper, and in some fiefs they were discarded after 3 years, to save storage space.

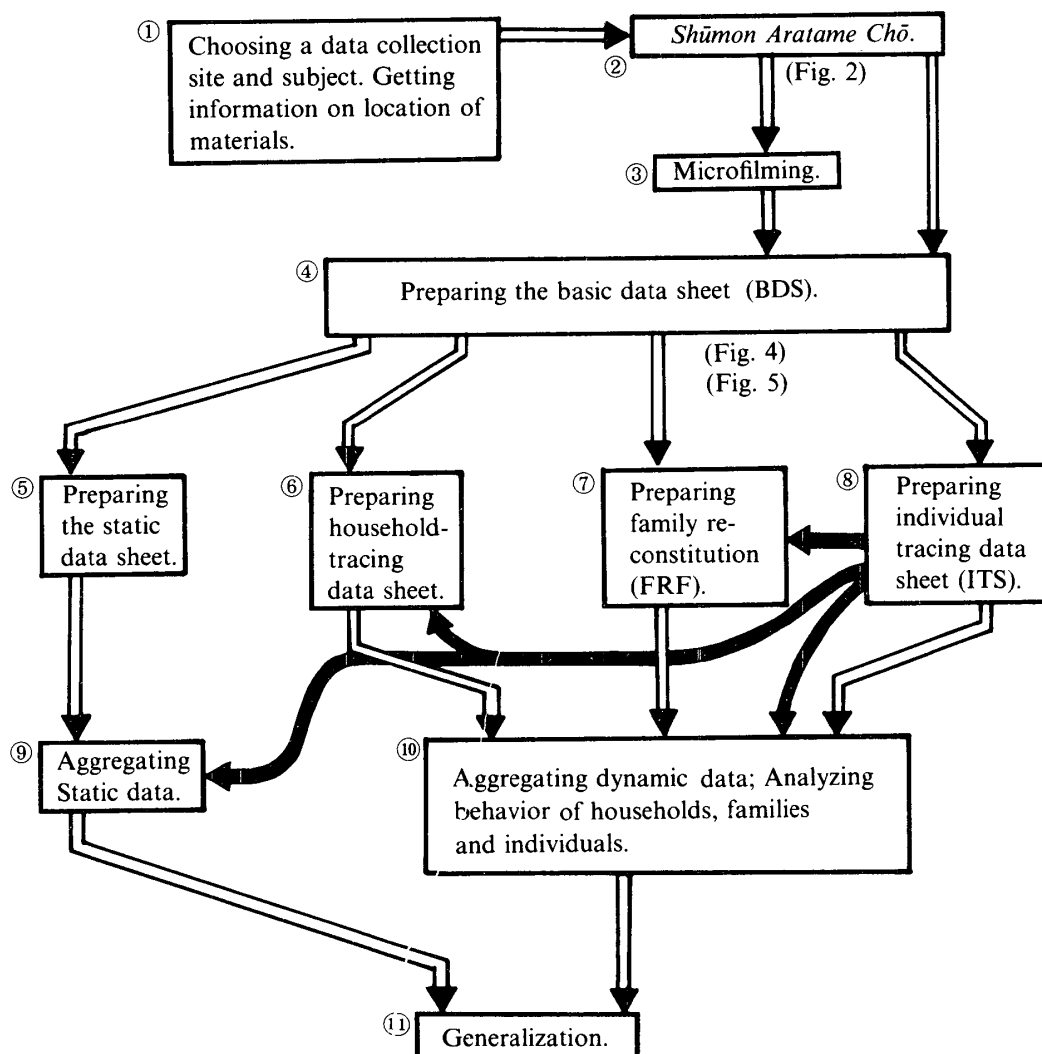
Regulations required village officials to conduct *shūmon* investigation at a specified time each year—usually in the first half of the year—while any changes occurring in the interim were recorded in the village headman's copy of the previous year's register. The changes recorded were: births and deaths, marriages and divorces, migration, creation of branch families, and extinction of families. Village officials sometimes recorded these changes in red, sometimes on strips of paper pasted in at the appropriate point. Some daimyos required their village officials to keep a separate register of these changes, called a *zōgenchō*, or "Register of Increases and Decreases", which was filed annually with the *shūmon aratame chō*. Actually, as will become clear below, it is these emendations that are our most valuable source of information.

<sup>6</sup> There were, however, areas where land was not resurveyed from the late 16th century to the Meiji Restoration, so that the assessments bore little relation to either productivity or market value of the land, but these figures were the basis for allocation of the tax burden within the village. See Thomas C. Smith, *The Agrarian Origins of Modern Japan*. Stanford. 1959. pp. 159–160.

III. DIGESTING THE *Shūmon Aratame Chō* FOR HISTORICAL DEMOGRAPHIC ANALYSIS

Figure 3 is a flow chart of our study of the *shūmon aratame chō*.

A. Data search. The Edo period may be the most heavily documented period in pre-modern history anywhere in the world, at least in terms of the volume of material extant today. So it is necessary to tailor one's methods of source selection



Data search: ①, ② and ③.  
 Data organization: ④, ⑤, ⑥, ⑦ and ⑧.  
 Analysis: ⑨, ⑩ and ⑪.  
 ■■■■ represents computerizable steps.

Fig. 3. Flow Chart: Processing the *Shūmon Aratame Chō*.



to the peculiarities of one's research goal. For my research purposes I have chosen a number of provinces for search.

Most extant documents for the Edo period remain in private hands, and the *shūmon aratame chō* are no exception. Moreover as yet there is no clear, organized network of information as to location of sources for that period. Therefore the first step in my research must in all cases be finding leads to the location of more *shūmon aratame chō*. Upon hearing of new materials we call on the owners and microfilm their documents.

B. Data organization. 1. The first task for research in processing the microfilmed information is to transfer it from the documents, as seen in Fig. 2, to basic data sheets (*BDS*). Each sheet represents the data available on one family over a twenty-five year period. (The period covered by the sheet is an arbitrary one dictated by convenience for printing the *BDS*, and does not indicate anything about developments over time.) Fig. 4 and 5 are picked out from the *BDS* in Nishijo village in Mino Province, near Nagoya. The data on the sheet show *all* information recorded in the registers, including all errors so that once the data have been recorded and rechecked, there is no need to return to the original.

After completion of the *BDS*, we prepare a copy, on which we correct all the errors in the register, fill in any missing information which can be deduced from surrounding years, and add the *Individual Tracer Number*. We then apply color codes for sex, marital status, and servant/family member distinctions, and key each column to the appropriate *ITN*.

2-a. Static Data Sheet. The data from all the *BDS* in the village under study are aggregated for each year on the Static Data Sheet, to show age composition, sex composition, household size composition, number of conjugal families per household, number of persons who have disappeared, servant population, all broken down by sex and age.

2-b. Household Tracing Sheet. A twenty-five year statistical abstract of the *BDS* for each family. The information is color-coded along both margins.

2-c. Family Reconstitution Form (*FRF*).<sup>7</sup> This form is essentially identical to the standard *FRF* developed by Louis Henry, and now in use throughout Western Europe and North America. Henry's development of this method of statistical abstraction has had a revolutionary impact on the study of past population and of history itself, and may be cited as the birth of historical demography as a discipline. It was only with the development of this analytical tool that historians became able to glean priceless information from the previously unmanageable

<sup>7</sup> For the classic discussion of the methodology and goals of family reconstitution, see Louis Henry, *Manuel de démographie historique*. Geneva and Paris. 1967. In English see, T. H. Hollingsworth, *Historical Demography*. Ithaca. 1969. pp. 181-195.

parish registers of France and England, and we in the Keio Group in Tokyo have been applying these methods to the *shūmon aratame chō*.

When the family reconstitution method is applied to Japan's *shūmon aratame chō*, the following classes of information become clear.

- i. Marriage age, differentiated by sex.
- ii. Age at end of marriage.
- iii. Term of marriage.
- iv. Reason for end of marriage (including death).
- v. Age-specific fertility (However most *shūmon aratame chō* list only those children who survive to the time of the next registry compilation, so that these fertility figures have an inherent downward bias, more than that of parish register.).
- vi. Live births per mother.
- vii. Sex-specific birth order.<sup>8</sup>
- viii. Mother's age at child-bearing.
- ix. Birth interval.
- x. By comparing dates of childbirth with dates of children's death, we can generate statements about the impact of infant survival on future childbirth timing.
- xi. Child mortality, by birth order, age, sex, age of mother, season, etc.
- xii. Marriage age, by birth order and sex.
- xxxi. All the above can then be classified by status, occupation and size of landholdings.

The members of the Keio Group have published a number of articles to date which are based on the application of family reconstitution to *shūmon aratame chō*.<sup>9</sup> There are several other studies in progress which their respective researchers plan to publish shortly.

2-d. Individual Tracer Sheet (*ITS*): In the light of the unique characteristics of the *shūmon aratame chō*, in particular the wealth of data they represent, I have developed the Individual Tracer Sheet as a long term data abstract for each individual in the registry.<sup>10</sup>

Historical demography has made great contributions to understanding the

<sup>8</sup> Professor Thomas C. Smith has developed the verification of population limitation through infanticide using sex-specific birth order. *Nakahara: Family Farming and Population in a Japanese Village 1717-1830*, Stanford University Press, 1977.

<sup>9</sup> In Western languages see, Hayami, "The Demographic Analysis of a Village in Tokugawa Japan: Kando-shinden of Owari Province, 1778-1871." *Keio Economic Studies*. Vol. 5. 1968. do., "Aspects démographiques d'un village japonais 1671-1871." *Annales Économies Sociétés Civilisations*. No. 3, 1969. In Japanese see, for example, Hayami, "Tōnō ichisanson no jinkō tokei (The Vital Statistics of a Village in East Mino). *Kenkyū Kiyō*. Tokugawa Rinseishi Kenkyūjo. Tokyo. 1970. Kitō Hiroshi, "Kiso Yubunzawa-mura no jinkō tōkei (The Demography of Yubunzawa Village in Kiso District, 1675-1796)." *Mita Gakkai Zasshi*. Vol. 67, No. 5. 1974.

<sup>10</sup> See Hayami, "Labor Migration in a Pre-modern Society: A Study Tracing the Life Histories of the Inhabitants of a Village." *Keio Economic Studies*. Vol. 10, No. 2. 1973. pp. 2-3.

social and economic or even intellectual history of France, England, Tuscany, the Scandinavian countries, Canada and U.S.A., through examination of extant parish registers. However parish registers, by the nature of their concern—baptism, marriage and burial—have one major flaw: they generally give no information on geographical, class or social mobility.<sup>11</sup> Researchers seeking static population data for a parish unit must, in addition to a parish register, also have census-type nominal records covering the same years as the parish registers.

One of the features of the *shūmon aratame chō* is that they provide sufficient information to trace individual life histories from cradle to grave, both socially within the village, and geographically around Japan. The *ITS* was designed to gather the data needed for such individual histories, while simultaneously generating static population data directly from the *shūmon aratame chō*.

- i) Reason for appearance on records: Principal reasons are: birth, entry into village by marriage, adoption or *dekasegi* (literally, leaving home to work),<sup>12</sup> and that the subject was already living at time of first extant records.
- ii) Reason for permanent or final disappearance: Exit for marriage, adoption, *dekasegi*, death and ostracism.
- iii) Name: In pre-modern Japan it was common practice for people to be renamed several times during their lifetimes. Western scholars will probably be most familiar with the case of Hiyoshimaru's transformation, via Kinoshita Tōkichirō and Hashiba Chikuzen, to Toyotomi Hideyoshi, but I would like to offer an example of a peasant for the reader's consideration.  
 Sōbei, who had changed his name from Tsunehachi, was a landholding peasant in Nishijo village. His first son had died in 1786, but in 1787 he had a second son, whom he named Kakichi. Kakichi, at 16 *sai*, while out of the village on service, changed his name to Teisuke, then two years later again changed to Yasutarō. In 1806 at 20 *sai*, he had returned to his family and taken the name Tone. In 1812, at 26 *sai* he changed name finally to Tōbei, the name with which he died in 1835.
- iv) Family of registry: Changes in family of registry due to marriage or adoption.
- v) Position in family: Expressed as relationship to household head.

<sup>11</sup> However, the parish registers of French Canada are an exception. Since they are practically complete for all parishes over a 300 year period, it is possible to follow individuals from parish to parish, at least inside Quebec Province, and pin down geographic mobility. See, H. Charbonneau, *Vie et mort de nos ancêtres*. Montreal. 1975.

<sup>12</sup> See Hayami (1973), and see also pp. 75 below.

- xi) Birth data: Birth order is in terms of children of the same sex. Thus in Koma's case, the indication is 2, as second daughter, rather than 3, as third child. (See Fig. 4 column a22)
- vii) Death: Date and age are given, and cause of death, when available, as well as relationship to household head at time of death. The entries for other deaths in the family in the year of death, or preceding or succeeding years, are helpful in generating inferences about possible epidemics, diseases, or famines.
- viii) Adoption: In all cases the information is with respect to whether the *individual* went for adoption. However, in many cases the term "adoption" may represent being taken in as a foster child without legal adoption, or may be used as a cover for concubinage.
- ix) Dekasegi: The term covers both permanent and temporary migrations. The term was used as a catchall for any departure from the village except for adoption or marriage-related permanent removal, or temporary absence on religious pilgrimage. Nearly all *dekasegi* represents people out of the village for employment. "One of the reasons why such an expression was adopted was due to the institutional limitation on making permanent moves to some other domain. The second reason is that Japanese labor has tended to work at certain places for certain period and then return to their native places, a trend which has existed up to very recent years. All migration of labor was written as *dekasegi* or working temporarily at so and so's house as servants. In truth, however, there was a mixture of permanent and temporary migrants categorized under this one term, but without looking at the long-term records of individuals, we cannot distinguish permanent from temporary migration."<sup>13</sup> The information on type of *dekasegi* and location are valuable data for the study of social and geographic mobility.
- x) Personal chronology: All the changes in the subject's life recorded above are recorded chronologically, in color coded form, in such a way that the chronology can be easily visualized or even computer-read.
- xi) Errors in records: As noted above the original *shūmon aratame chō* contain errors, and we have intentionally included these in the original *BDS*. All such errors are noted on the *ITS*. Because of the completeness of the records over time it can be possible to catch and correct these errors. Although errors on the original documents worry us in any study of history or other sciences, they can be useful information for our study. In the case of the *shūmon aratame chō*, the statistics on errors may indicate the administrative or intellectual ability of village officials.

<sup>13</sup> *Ibid.*, p. 6.

*Life Histories Based on ITS*

As an illustration of the utility of the types of data collation described above, I offer two individual biographies reconstructed entirely from information gleaned from the *shūmon aratame chō* of Nishijo village. I suggest that the reader bear in mind while reading these biographies that, in all probability, never once in her life did Sumi entertain the idea that she would be remembered in history. Hoan, as the son of the village headman, and as a physician, was a member of the intellectual elite, and might not be surprised to find himself remembered today. In fact it was Hoan's family which was responsible for preparing and preserving the very registers used in this study.

*Case 1. Hoan.* (To be read in conjunction with the attached *BDS* in Fig. 4, column b17 marked "Yajiro," Hoan's childhood name.)

1818 saw the birth of a son in the house of Gonzaemon, headman of Nishijo village. The child was named Yajirō. The father was 46 *sai* and the mother 30 *sai*. This was the father's second marriage, but he had a son and a daughter by his late first wife, and had already had two daughters and one son by Yajirō's mother, so that Yajirō was Gonzaemon's sixth child. As well as serving for generations as headman of the village, Gonzaemon's family was also the largest landowner in the village; in 1818 Gonzaemon held about 10 hectares of fields under cultivation just within the village, far surpassing the next largest landowner. The family regularly employed three or four male and female servants for household work, and owned one of the few horses in Nishijo.

Yajirō remained at home until age 18 *sai*, during which time there were no unusual occurrences in the household. One elder sister was married off at 21 *sai*, and his grandmother died at 82 *sai*, but this, and the growth of the landholdings of the family by 20%, were about the extent of the news. Then, in 1835, Yajirō went to Suga village in Nakashima county, some 6 kilometers distant, and enrolled as a pupil with a physician there named Kondō Rian, to begin the study of medicine. Four years later, in 1839, he moved to Kyoto, then, with Nagasaki, the center of Japan's medical study, to pursue more advanced study under the physician Koyama Keisuke.

When Yajirō returned to his family in 1841, at age 24 *sai*, his father had died, and his eldest brother had succeeded to headship of the house. His next elder brother had gone to another family as an adopted son, and one more sister had been married and left Nishijō. Yajirō changed his name to Hoan, a name more fitting for a physician, and opened practice as a doctor. In 1845, at 28 *sai*, he married a girl from Mikkaichi village, Ono county, 12 kilometers to the north, and at the same time, he established himself as the head of a branch family. See Fig. 5. His wife was 17 *sai*. On the occasion of his establishment as a branch house, he received the gift of, or more probably bought with his earnings as a physician, about 1.5 hectares of arable land.





To this point Hoan's life was moving forward quite nicely, but things did not go perfectly thereafter, for in 1849 his wife died, at 21 *sai*, before any children had been born. Hoan remarried in 1851, at age 34 *sai*, taking to wife the 21 *sai* younger sister of his late first wife. They had three children, born in 1853, 1855 and 1858, all of them girls. Hoan's practice prospered, and his landholdings had nearly doubled, to about 3 hectares when, in 1864, he died of illness at the age of 46 *sai*. Hoan's widow took over headship of the family after his death, and in 1868 found an appropriate young man for adoption, whom she had marry her eldest daughter and reopen Hoan's medical practice. But when the registers ceased in 1869, the headship of the family had not yet passed to the adopted heir.

The vital statistics for Nishijo show that child mortality declined after Hoan opened his practice there. Though a causal link cannot be explicitly demonstrated, it is not hard to imagine.

*Case 2. Sumi.* When she was born to Yahei, a landless peasant, and his wife in 1772, Sumi had two elder sisters and a brother, all grown up. A younger brother died in childhood, but another younger brother and sister both survived to adulthood.

At age 14 *sai*, Sumi went to Nagoya, 50 kilometers southeast, to work, but in 1790, at 19 *sai*, she returned to Nishijo for just one year. Then she went to Ōgaki, 10 kilometers in the other direction from Nagoya, to serve in a samurai household. In 1795 she was married to a merchant's son named Tajimaya, in Ōgaki, and they moved 5 kilometers to the west, to Taruijuku, a post town on the Nakasendō, where they settled. But because of her husband's untimely death, she returned to her parents in 1808, bringing her 6 *sai* son with her.

In 1815, now aged 44 *sai*, she went out again, this time to the village of Nishiyui, 6 kilometers to the north, for service with a peasant family, and died there in 1837, at the age of 66 *sai*. It may be that her long life was suddenly ended by the epidemic which ravaged central and western Japan in 1837–38, and particularly affected the aged. She had lived in five different places, including every major type: Nagoya was a large castle town of over 100,000 souls, Ōgaki a smaller castle town, but still over 10,000 persons. Tarui had a population of 1,000 to 2,000, and as a post town on a major highway was host to a vast transient population of people from all over Japan. The son she brought home to her parents himself later went out to Ōgaki on *dekasegi*.

#### IV. CONCLUDING REMARKS

We have organized a research group—often called the Keio Group—numbering about a dozen researchers and assistants, which is currently applying the



methodology described above to *shūmon aratame chō* from several different regions, each with special characteristics (urban, rural, samurai, etc.). I am responsible for rural population, and to date have microfilmed materials on 80 villages; of these we have processed *BDSs* for some 50 villages. Approximately 100,000 individuals appear in these sheets at one time or another over the period 1671–1871. Based on my experience with Nishijo, perfectly preserved records over a continuous 100 year period have yielded cradle-to-grave data on 20% of the individuals recorded; considering the large number of short term servants employed by upper-class peasants, (15% of the total in Nishijo) and the frequency with which people leave permanently on *dekasegi* (also 15%), a rather high proportion of the population, appears over its full life.

I have generated *ITS* forms for approximately 2,000 individuals. Since the population of any one village is relatively small, I have been able to analyze the *ITS* forms without the use of a computer. When, however, as in the case of a town population, the number of *ITS* forms involved grows, there is no alternative to computer analysis.

Professor Sasaki Yōichirō, of Chiba University has responsibility for the town aspect of our group's research. He has been working with the *shūmon aratame chō* for two continuous wards in the town of Takayama, Hida province (modern Gifu Prefecture), perfectly preserved for the same 100 year period as Nishijo, 150 kilometers to the south. He now has over 40,000 *ITS* forms, all of which he has entered on computer discs. The advantage of computerization in this study is not merely simplification of calculation. By computerizing the *ITS* it is possible to generate by computer family reconstitution, aggregate static data and aggregate dynamic data which are the target data of our studies, directly from the *ITS* without manual preparation of static data sheets and household tracing sheets. Furthermore it is possible to simulate entire populations and compare the impact of variable-manipulation with historically demonstrable population change. Thus we can use a heuristic methods in *shūmon aratame chō* study. For example, Professor Sasaki has found that if Takayama had had no infusion of rural population by *dekasegi* for 100 years, the population could not have reproduced itself, and would have fallen by 30% over the century, when in fact the population of Ward 2 rose 37%, from 2,614 in 1773 to 3,585 in 1865.

Still, the nature and state of preservation of the sources do present us with certain problems. Our most serious problem is the scarcity of good materials with which to work. There is no question that *shūmon aratame* were indeed conducted annually throughout the country, but most of the registers, if extant, are preserved as private property in the houses of the descendants of village officials. Thus the three problems of finding, permission and access, and preservation have proved to be our greatest difficulty in securing continuous longrun data for large numbers of administrative units. Rather, hundred-year runs of data without a single lack, such as Takayama and Nishijo, are lucky exceptions to the norm. In most villages there

are missing years in the records. In the case of Yokouchi village<sup>13</sup> in Suwa county, Shinano Province, where we conducted our first study, we had 144 years' registers over the period 1671–1871, with no gaps longer than 4 years.

The second major problem is errors in the sources, especially errors in recording age. It is of course possible to correct such errors for anyone whose birth is recorded in the extant registers, but we have no way of verifying the ages of people who were born either before extant records start, during a gap of two or more years in the records, or in another village.

The third major problem is that in some jurisdictions the daimyo did not demand detailed information, rendering the registers less useful for our purposes. For example the daimyo of Kaga, the largest daimyo domain in the country, did not require anyone under age 15 *sai* to be recorded; in the Tokugawa collateral house of Wakayama (Kii Province) the cutoff age was 8 *sai*, and although sect investigations were conducted annually, registers were only prepared hexennially. The problems these “flaws” present are obvious.

While these problems mean that we will not be able to determine with complete precision the situation in all parts of the country, still we are satisfied with the prospects. We, with American colleagues, will soon be able to present studies of town and rural populations representing most major districts of the country.<sup>15</sup> The Keio Group's target is to collect and analyze cradle-to-grave *ITS* data for 100,000 town and rural individuals.

As noted above, the *shūmon aratame chō* are a chance by-product of the Tokugawa bakufu's fear and loathing of Christianity, that Counter-Reformation Christianity first brought to Japan in 1549 by one of the founders of the Society of Jesus, St. Francisco Xavier. It is for this reason that we today have been able to start to paint so vivid and detailed a picture of social and demographic change in Tokugawa Japan.

Therefore I want to take this opportunity to express my profound gratitude and

<sup>14</sup> Hayami, *Kinsei Nōson no Rekishi Jinkōgakuteki Kenkyū*. (The Historical Demography of Rural Society in Shinano Province). Tokyo, Tōyō Keizai Shinposha, 1973.

<sup>15</sup> Over the last decade a number of American scholars have done studies in the historical demography of Japan based on *shūmon aratame chō*, starting with a town population study by Robert J. Smith, “Small families, small households, and residential instability: town and city in ‘pre-modern’ Japan,” in Peter Laslett, ed., *Household and Family in Past Time*, Cambridge University Press, 1972. Among her many fine studies, see in particular Susan B. Hanley's “Population trends and economic development in Tokugawa Japan: the case of Bizen Province in Okayama,” in D. V. Glass and Roger Revelle, eds., *Population and Social Change*, London, Edward Arnold, 1972. Also, Mark W. Fruin, “Farm family migration: the case of Echizen in the nineteenth century,” in *Keio Economic Studies*, 10: 2, (1973), and for a look at part of the samurai caste, Kozo Yamamura's *A Study of Samurai Income and Entrepreneurship*, Harvard, 1974, chap. 5, “Demographic characteristics of the bannermen,” See also T. C. Smith's work on a village in Mino; *Nakahara* (op. cit.). Susan B. Hanley's works have been compiled with Kozo Yamamura's in their *Economic and Demographic Change in Preindustrial Japan, 1600–1868*, Princeton University Press, 1977.

respect to the great pioneer who laid down the foundation for the historical demographic analysis of Tokugawa Japan. Thank you Francisco Xavier!

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