

## 海外における災害研究の新しい傾向について

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2006年10月13日（金）、14日（土）、カリフォルニア大学バークレー校で行われた日本学術振興会とカリフォルニア大学日本研究センター主催の日本の災害に関するコロキウムに参加した。アメリカの若い災害史研究者と、主として日本の歴史系、社会学、それに都市計画系関係の災害研究者の話題提供を中心とする2日間にわたる公開の研究会であった。この会議でわたしに求められた論題は、神奈川大学21世紀COEプログラムにおいて私が追究する課題と不可分の話題であるので、提出論文を年報に掲載させていただくことにした。以下、この会議についての若干の説明を付しておく。

### I 会議の概要



会議前夜のレセプション

日本学術振興会・カリフォルニア大学日本研究センター共催 第3回コロキウム「日本における災害への対応：学際的視点から」が開催された。会議の開催に先立ち、主催者のアラン・タンスマン氏(カリフォルニア大学バークレー校、日本研究センター長)と日本学術振興会サンフランシスコ研究連絡センター所長の竹田誠之氏の挨拶が行われた。

場所は、13日がカリフォルニア大学バークレー校アラムナイホール、14日が日本研究センター会議室であった。

プログラムは以下の通り。

10月13日（公開）

#### 基調講演：災害と歴史

グレゴリー・クレンシー（シンガポール大学歴史学教授）

「自然の暴力と脆弱性：日本の自然について」

北原 糸子（神奈川大学非常勤講師）

「災害後の人々と社会：生活回復過程について」

#### セッションⅠ：地震災害への対応

林 春男（京都大学防災研究センター巨大災害研究センター所長）

「災害発生時の人間行動」

ケリー・スミス（ブラウン大学歴史学助教授）

「今村明恒と関東大震災」

#### セッションⅡ：復興計画

室崎 益輝（総務省消防庁消防大学校消防研究センター所長）

「都市の災害復興，防災計画」

市川 宏雄（明治大学公共政策大学院 ガバナンス研究科長）

「災害への備えという観点からの都市政策」

### セッションⅢ：災害を記憶する

カリ－・カラカス（カリフォルニア大学バークレー校地理学研修員）

「関東大震災の記憶から戦時下空襲の連想へ」

竹中 明子（ミシガン大学美術史学教授）

「日本の博物館における災害と戦争犠牲者に対する展示方法」

10月14日（非公開） 講演のまとめと発表者による自由討論

終了

まず、報告の内容について、英語の聞き取り能力はないので不正確な部分もあることはお許し願ひ、以下に簡単な紹介をしておこう。

基調報告をされたシンガポール大学のグレゴリー・クレンシー氏については、予め提出された論文がなく、また当日の発表（英語）を充分には聞き取ることができなかつたので、報告の詳細な内容を紹介することができないが、ほぼ以下のことを述べられた。お雇い外国人として日本の地震学の誕生を促したジョン・ミルンが指摘したように、日本人の性格は古来から災害の襲来を受けてきたことと深く関係する。台風注目した和辻哲郎を援用しながら、明治・大正期に焦点を絞り、日本人が抱く災害意識を追究するというものであった。続く北原の報告は、日本の災害史のなかで江戸・明治期の巨大災害の社会の復興過程を分析した（以下英文参照）。ここで問題とした要点は、大災害に際して必要とされる国や地域行政の関心は江戸期では人に対して、明治期以降は社会資本に対して集中してきたこと、したがって、情勢により、災害支援は二の次、三の次の課題としてしか取り組まれていないこと、災害を受けた地域は復興への課題を抱え込みつつ、時代の変容に対応せざるを得ない歴史を明らかにした。

地震災害への対応のセッションでは、林春男氏が阪神淡路大震災の復興過程の社会学的分析を踏まえ、災害後の時間的経過で変化する被災者の要望とそれに対する支援のあり方を報告した。林氏は阪神淡路大震災直後、「心のケア」という領域の重要性に着目し、復興支援でこの点を実践し、その後のさまざまな災害で「心のケア」が行政に定着するきっかけを作った研究者である。ケリー・スミス氏は関東大震災時における今村明恒の活動の意義について論じた。周知のごとく、関東大震災前、東京帝国大学大森房吉教授と今村明恒助教授の関東における大地震発生に関する予測の論争があり、結果的に今村明恒の予測が的中した結果となった。関東大震災後、地震予知の必要性を説いて生涯をささげた今村明恒については、山下文男『君子未然に防ぐ—地震予知の先駆者今村明恒の生涯—』（東北大学出版会、2002年；『地震予知の先駆者今村明恒』青磁社、1989年の再版）や、武村雅之『手記で読む関東大震災』（古今書院、2005年）などが出版されていて、地震予知のためにあらゆる障害を克服しようとする情熱的な生き方が紹介されているから、わたしたちにはある程度の予備知識がある。わたしは外国の若い研究者がどのような視点でこの人物に肉薄するのか興味を持ったが、今村が関東大震災後国民に呼びかけた防災への心構えを書き残した雑誌、新聞記事などを丹念にフォローし、地震後の火災発生のおそろしさや津波の被害などをわかりやすく庶民に説いて止まない今村明恒像をクリアに描き出した点に感心した。

復興計画のセッションでは、建築学教授として神戸大学に勤務していた時に阪神淡路大震災に遭遇し、その後の復興計画に深く携わった経験を持つ室崎益輝氏、都市計画を専門とする明治大学の市川宏雄氏が発表した。室崎氏は、阪神の復興計画の経験を踏まえ、復興の課題を家、街、経済、文化という側面から捉える必要があること、特に破壊された家屋の早急な建設が何よりも被災者が日常生活を営む最大要件とした。しかし、この問題は街の復興計画と同時に進行でなければならないから、双方を連関させながら実践していくための手段として、利害関係にある人々の徹底した対話、相互理解を前提とする討議の必要性を説く。こうした討議の過程は地域の文化を自覚化させる効果を生む。こうした討議のないところでは、復興後に問題化するであろう環境変化に対しても対応できないとした。

市川宏雄氏は、70万人規模の東京周辺のある郊外都市の調査実績を素材に、災害に対応力のある都市造りに今求められていることはなにかを問う。これまでの防災の物理的対策（physical preparedness）に対して非物理的対策（non-physical preparedness）の必要性は阪神淡路大震災以降明確になった点とする。非物理的対策（non-physical preparedness）、すなわち、住民の実際の生活を基本に据えたデータを収集し、災害時の自助、公助、国家補助の諸段階のうち、特に前二者、つまり、個人・家庭とその地域との平常時の関係のあり方から問う必要があること、その関係のあり方が災害時、あるいは災害後の復興計画を左右する。つまり、地域社会の構成員（高齢者中心か、団地住まいの若い夫婦を中心とするかなど）によって、災害対応力はそれぞれ異なるから、それに即した災害復興策が必要であり、その

ための地域社会の事前の把握が行政に求められていることを提唱した。

災害の記憶に関するセッションでは、カリー・ダグラス氏による震災後から活躍する空想小説家海野十三（1897-1949）の防空小説に関する分析と、日本における博物館戦争展示が提起する問題を論ずる竹中明子氏の発表が行なわれた。

ダグラス氏は、大震災からの首都の復興を祈念、昭和5年頃（1930）から、国の指導者だけでなく市民も含め、首都の無防備性についての認識が高まったとする。そして、震災の惨状が強く作用した結果生まれた海野の防空小説が、この時期以降、首都をあらゆる攻撃から守る防災都市の建設計画に関わった都市計画者のイメージ形成に寄与した。

竹中氏は日本では現在、アジア・太平洋戦争の資料収集と展示を手掛ける200以上の博物館があることをあげ、この種の博物館の叢生状況は、現代の日本でアジア・太平洋戦争についてある種の強迫観念に迫られている結果ではないかと問題提起をした。戦争博物館の多くは、体験者の話や写真、戦争中の苦しい生活を語る「もの」を蒐集するが、果たして、体験者の記憶や写真やその他のものを収集し、並べることで平和が保障されるのか、むしろ、それらをどう解釈するのが問題であるはずだが、それがない。現状の展示は戦争での庶民の犠牲を正当化する役割を担うことになりはしないかと危惧する。

14日は、ジョウダン・サンド氏（ジョウジタウン大学東アジア言語文化センター助教授）による総括が行なわれた。英語でも日本語でも随意に発言してよいということであったが、英語の発言内容が把握できないので、このまとめを紹介することができない。ジョウダン・サンド氏は議題提供者の報告時には参加がなく、ペーパーのみを讀んでの総括であったので、ペーパーを提出していない3人の報告者の発表は除外されているから、これまた不十分なものであったと推察する。

参加した者としての感想は、日本からの参加者はすでに研究歴も長い、それなりの蓄積のある人たちであったが、アメリカの大学の出身の若い研究者が新しい分野に目を付け、日本にいるようなわけにはいかないというハンディがあるにもかかわらず、ポイントとなる資料を押さえ研究を遂行していることに感銘を受けた。また、日本のなかでもいまだ災害史研究分野は学問的領域の未確立状態にもかかわらず、海外に設置されている日本の学術振興を担う機関で、いち早く歴史系の災害史に関わる外国の若い研究者に着目した点について、社会的な関心の動向への対応力を持っていると評価したい。

## II 「災害後の人々と社会：生活回復過程について」（北原提出論文）

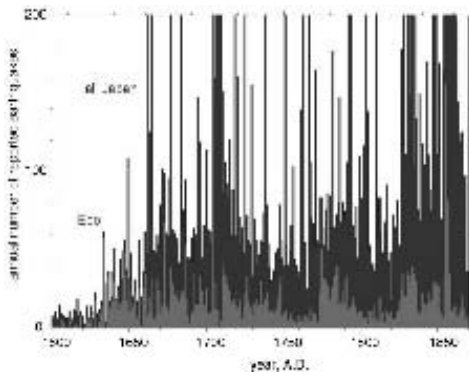
### Society and Commoners after Disasters : Changes from the Feudal Time to the Modern Japan

Itoko KITAHARA

#### Introduction

This paper aims at explicating how society and people recovered, or at least made efforts to recover from disasters in the Japanese history. Japanese Islands locate close to the boundaries of four plates : Eurasian, North American, Philippine Sea, and Pacific, which has been one of the major sources of energy for natural disasters. We historians can find many records telling not only the disasters such as earthquakes, tsunamis, volcanic eruptions, floods, unusual weathers, but also sudden appearances of comets or strange phenomena of nature in the Japanese history. However, there are few records describing recovery processes from the disasters or any other misfortunes.

To learn the recovery process from disasters in reality, it is necessary to examine not only the official records but also original materials such as private diaries written by those who had experienced the



disaster and recovered from it with difficulties. It is fortunate to us historians that various records written by the local officials or by the ordinary people have been available since the mid of the Tokugawa era. Through these historical materials, we can learn how big the damages were, how people managed to get food or water after the disaster, or how people helped each other ( Fig 1. The Records of Earthquakes in the Japanese History ).

Particularly in this paper, I will make clear the features of relief and the recovery system from disasters in Pre-modern and Modern Japan. Meantime, Japan accomplished to change the feudal system to the modern through the Meiji Restoration. It will be able to point out the differences of relief system between these two ages, and at the same time, the traditional features in common through the Japanese history.

I begin with examining a few sample cases of natural disasters in the Tokugawa era, and then the case of the big earthquake that Modern Japan had firstly encountered.

### **1-1. The Case of the Volcanic Eruption in the 18 th Century : the typical relief system under the feudal organization of Bakufu-Each domain relationship (幕藩体制)**

The 18 th century had especially numerous volcanic eruptions in Japan. We can give several examples of them which brought the big damages to the inhabitants and their environments, such as those of Mt.Fuji(1707), Mt.Kirishima(1716), Mt.Toshima-Oshima(1741), Mt.Sakura-jima(1779), Mt. Asama(1783), Mt.Unzen-Fugen(1792). However, we can realize that there is a striking difference of the volumes of the documents between the early period and the late period of the 18th century. We have found few illustrations about the 1707 eruption of Mt.Fuji, while we have huge volumes of illustrations and documents about the 1783 eruption of Mt.Asama. The reasons for the abundance of documents for the latter might be the following: the wide areas of its damages, and a strong desire for disaster information among the ordinary people. Moreover, Tokugawa feudal society had been changing during 18th century. The communal organizations had been collapsing little by little in the rural area, and the people were apt to flee from their home villages. They would have needed various kinds of information to keep up their daily lives out of their own villages.

As for the case of the 1783 eruption of Mt.Asama, the process of the management of the relief measures, fund raising and setting down the hardship taken by Bakufu is as follows. Mt.Asama

locates on the border between Nagano and Gunma prefecture. Asama-volcano signed the eruption from 1783 May 9th and reached to its climax at August 5th. The damaged area spread across five prefectures: Gunma, Nagano, Saitama, Tochigi, Ibaraki, and Chiba. The 1,151 persons were killed, and more than 1,000 houses were destructed. The exertion of damages can be parted into four stages: the first lava flow, the second pyrocrastic flow/debris avalanche, the third mudflow and the fourth pumice fall. The most dreadful tragedy happened on its second stage at Kanbara-village where almost all of 466 villagers were killed by pyrocrastic flow and debris avalanche. However, at the third stage the damages by mudflow were more widely spread over along Agatsuma River and along Tone River. The fourth stage was said to be done by the fallout ash, causing the Tenmei famine.

The Shogunate-Bakufu immediately sent the governmental officials to investigate the damages two times: the first minor dispatch and the second large-scale one. The relief measures began at the same time of the second dispatch one month after the eruption.

The relief fund for these damages was systematized for the Shogunate-Bakufu to force contribution on each daimyo. This system had worked since the beginning of the Tokugawa age, for example, a case of building Edo Castle. However, around the beginning of the 18th century, this system had been applied to relief and recovery measures mainly against the floods. In the case of the eruption of Mt. Asama, the Kumamoto-clan (熊本藩) was ordered to contribute about 90,000 ryo to Bakufu. The 60,000 ryo of it was expended to the relief and recovery measures(60%), and the rest was estimated to spend for the arrangements, such as, bribery to the government officials (40%). In fact, it was taken for granted that not only the tragic Kanbara-village, but the rest of the many damaged villages within the Bakufu's direct domain could recover by the immediate relief.

However, the problem occurred out of the Bakufu's direct domain: peasants' riot demanding the same relief just as the direct domain. Of course, these riots had been soon suppressed by the troops sent from the neighboring daimyos' domains.

Then, how long was it taken to fully recover from the disaster? In the case of the tragic Kanbara-village, the 93 survivors were forced to marry to make new families to get new-born villagers by the suggestion of the neighboring village-leaders. However, thirty years later, we could find only 20 houses on the recovering map. It will take at least one generation for a village to recover its population as before. We can see how difficult it was to recover from the entire devastation by the natural disaster.

## **1-2. The Case of the Tsunami in the mid-19 th Century : on the very time of the inner and outer crises of Japan.**

In the mid-19 th century, Shimoda seemed to be one of the most well-known ports of Japan among foreign countries. Carrying negotiation with Bakufu in order to open the door of Japan to America, Commodore Matthew Perry and his fleet anchored at the Treaty-port Shimoda in April 18th and at last concluded the Treaty of Peace and Friendship between Japan and US in June 20 of 1854. Then, after M. Perry and his fleet left off Shimoda in June of 1854, the Russian fleet led by Admiral Putjatin appeared at Shimoda Bay in October of the same year. He also demanded to conclude the Japan-Russia Treaty as same as America, and began the negotiation with the Japanese governmental officials at Shimoda.

However, on December 24th of 1854, the very next day after the negotiation began between Japan and Russia, the big tsunami occurred and Shimoda, the diplomatic stage, was dreadfully devastated. This big tsunami(Magnitude 8.4) stroke the eastern and southern shore of Pacific Ocean along Japan Islands, with more than 3,000 victims. The damage in Shimoda was the following : 99 victims and 871 houses destructed and/or washed away. That is, almost all of the houses in Shimoda town were carried away by the tsunami, though fortunately the dead were relatively few. To these damages, the Bakufu soon sent 2,000 ryo mainly to relieve the diplomatic delegation of Bakufu at Shimoda, intending to let them continue the diplomatic negotiation without interval. The brains of Bakufu at Edo ordered the delegation to keep up the opening of treaty ports limiting only to Shimoda and Hakodate, however strong the Russian diplomats demanded to open the other ports nearer to Edo bay. The reason why the Bakufu urged to keep up Shimoda as a treaty-port was its entire isolation. Bakufu thought of minimizing the influence to the rest of Japan even if the foreign trade should be done secretly.

By the way, what kind of relief measures had been done to the ordinary people? The Bakufu gave the Shimoda town officials 200 ryo to serve people's urgent demands of food, such as water, rice, miso-paste, salt, and so on. Of course, they were given a little money to reconstruct their houses, but it was far less than to be needed. It was necessary not only for Bakufu and but for the Shimoda people to reconstruct not only Shimoda-port but Shimoda town itself to keep on the position as a treaty-port. Bakufu began to reconstruct Shimoda town through the delegation leader 2 months later when the 1854 Japan-Russia treaty had been concluded.

Here I would like to take up the typical recovery measures by Bakufu as follows :

1. Financial aids to reconstruct houses : 70 ryo per each 50 large hotel, 30 ryo per each 30 smaller

ones, 5 ryo per each 975 inhabitant and 10 ryo per each fisher, and the total amount was 9,855 ryo. These financial supports should be returned to Bakufu annually during ten years.

2. Restoration of the bank against tsunami and high waves: the expense 2,902 ryo was owed by Bakufu, for the hired inhabitants to get money as laborer.

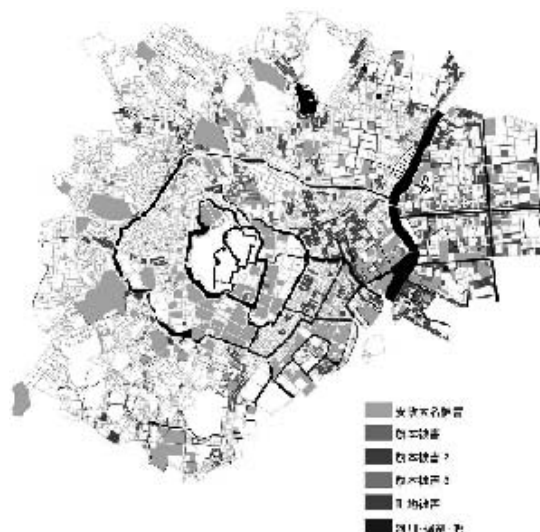
3. Market for foreigners: the town people of Shimoda and neighboring villagers were allowed to sell necessities of life to foreigners, on the condition of payment of a certain amount of tax. A part of tax should be engaged to rebuild the town facilities.

4. Reconstruction of the town office: instead of the washed-away town office, Bakufu ordered to move it to the other place without fear of tsunami. Many Shimoda people were hired to build it.

These direct financial aids by Bakufu could not be found out in any other cases of relief measures. This was the exceptional case of the relief system done by Bakufu at the time of the outer and inner crises. We can say that there would have not been expected such direct and sufficient financial aid by Bakufu toward a little isolated port Shimoda if the foreign countries had not come demanding to open the door of Japan to them. This view is proved from the fact that Shimoda town had a hard time with a large debt after Yokohama took the role of treaty-port in 1859.

**1-3. In the Case of the Quake Attacked the Capital Edo in the mid-19 th Century**

After the big 1854 Tsunami attacked the wide area along the Pacific shore of Japan Islands, the earthquake stroke the Capital Edo next year, causing more than 10,000 victims. This quake occurred in the inner plate, concentrating the relatively small range of damages around the epicenter. However, the Capital was stricken by the serious shakes and its damages were disastrous (Magnitude 7).



The accurate number of the whole victims containing daimyos, retainers and town people of Edo has been unknown yet, because these three classes were divided under the different supervisions each other(Fig.2 The Damages by the 1855 Edo Quake).

The damages of each class were like these.

1. The daimyo class : the 116 damaged clans among 265, more than 2,000 estimated victims in the clans' mansions, though none of daimyos were killed nor injured. Many peasants asked to work in each clan's mansion were crushed to death by this quake.

2. The retainer class : though the number of victims has been unknown yet, the 4,488 hatamotos and the 12,966 gokenins received the financial aids by Bakufu. This makes us to estimate that more than 80% mansions and houses of the retainer class were given heavy or slight damages.

3. The town people : 4,293 killed and 2,759 injured, more than 15,000 destroyed houses and 1,400 collapsed clayey storehouses. To these damages, various relief systems had been active.

4. To the daimyo class : the financial aid of 58,000 ryo by Bakufu were limited to 12 daimyos of the executive board.

5. To the retainer class : Bakufu took the immediate relieves toward the suffered Hatamoto and Gokenin according to their stipends. Some trial circulation tells us that the relief expenditure would amount to 90,000 ryo.

6. To the town people : five houses of refuge for the sufferers with hardship two days later after the quake, food supply (about 500 g rice for a matured male per one day) not only for the poor sufferers but for the non-sufferers during one month soon after the quake, and cut-rate rice for the ordinary people. These relief system by Bakufu were done under the manual against the crises ( mainly fires and famine in Edo city) since the Kansei reform(1787-1793) by Matsudaira Sadanobu.

How did the city officials of the Edo City arrange the restoration of public facilities or collapsed streets and houses of Edo?

Bakufu repaired rather soon the town offices such as fire defense (火消屋敷), finance section (勘定奉行所), civic head-quarters (江戸町奉行所), and so on. The water-supply took rather longer time to its normal condition. Its system for drinking water was divided into three : Kanda water-supply, Tamagawa water-supply, and independent dug wells. The former two supervised by Bakufu supplied water through mostly wooden, partly stone pipe-lines underground and users in Edo city received water with storage wells. These underground pipe-lines were almost out of joint by the quake, and water distilled into underground or overflowed the roads. However, the supervisors were very busy to reconstruct many public facilities after the quake, and the main stone pipe-line around Yotsuya Mitsuke was left undone at least for two years. We can have little information about the damages of



Edo castle because anybody was prohibited to talk or write anything about it. However, even the ordinary people could catch in sight the serious damages of the outer stone-wall around Edo Castle. These damages outside of the castle took two or three years to be fully restored.

We can find many cases of reconstruction about daimyos' Edo mansions in the clans' public dairies. Generally speaking, the mansions were soon arranged by the supports of each state clan or its own privileged merchants. They soon supplied the building materials, carpentry, or money and so on. However, we have few information about the retainers of the Tokugawa Clan, as mentioned above.

In the case of crisis such as fire, famine or epidemic, there was an organized donation among the people voluntarily. We can find these social phenomena in the Japanese history frequently. In the 1855 Edo quake, the big merchants or the ordinary people donated together, totaled to 15,000 ryo. Building materials, laborers, and money brought into Edo made business brisk amazingly for a while. The famous Namazu-e, a kind of caricature, proved that the people in Edo wished the brisk business would last long as if it were utopian.

To compare the 1855 Edo quake with the 1854 tsunami, we recognize that Bakufu took rather thick relief measures to Shimada considering the diplomatic problem with foreign countries. Bakufu could not afford Capital Edo to recover from the damages soon with its withering political power.

## **2. Features of Recovery from the Disaster in Modern Japan : case of the 1891 Nobi Earthquake**

Here I examine the case of the 1891 Nobi Earthquake (Magnitude 8). This quake has ever been estimated one of the biggest earthquakes in Japan. The reason why I take it up here is that this quake caused the modern national attitude toward earthquakes in Japan, for example, the application of Saving Act against Poor Crop (備荒貯蓄法) as relief system for the disaster sufferers, or of subsidies for civil construction (災害土木費補助) for the reconstruction of the collapsed banks and so on. We have considered three cases of relief systems and other problems in the pre-modern Tokugawa era so far. The Nobi Earthquake case shows that the social attitudes toward the natural disaster of Modern Japan are different from those of pre-modern.

Firstly, it will be necessary to talk shortly about the first act applied for the sufferers of disasters, and the subsidies for the reconstruction of the damaged infrastructure.

### **2-1. Saving Act against Poor Crop (備荒貯蓄法)**

This act was enacted in 1880 for a 20-year limit. The aim of this act was one of the effective measures

mainly against the agricultural sterility. The central government and each prefectural office were to save 3% of each annual income against the sterile or other crisis by natural disasters and allowed to produce profits on each fund. According to the act, each prefectural office had to expense relief money from each saving to the sufferers in the cases such as flood, sterility, fire, or earthquake. And, if the sum of relief money should be more than 2/3 of the prefectural saving, then the governmental saving should be expended for its shortage. However, by the time of 1890, Japan had not experienced any big earthquakes or tsunamis fortunately, and the governmental saving funds totaled to 4000,000 yen. So, the parliament changed the act to stop saving money against the natural disasters since 1890, in order to prepare for the war expenditure. It is ironical that the big Nobi Earthquake happened at the very next year after 1890.

In short, the year when the Saving Act against Poor Crop was seemed to be the important turning point to making the modern constitutional state. In 1878, the Three New Acts for Organization of Counties, Towns and Villages (三新法) were enacted. And within a few years, local parliaments and their members, local taxes, local public bodies, etc., in other words local governments began to be organized. Since the Land Tax Reform Regulations in 1873, most farmers felt the new tax was too heavy. It made people hostile against Meiji Government and caused eventually violent riots. At last, Meiji Government cut the Land tax rate down from 5% to 3%, instead of cutting off the subsidies to each prefectural local offices. The new acts or regulations legislated around the year of 1880 were aimed at the foundation of local government, differentiating its finance from the national one. The subsidy for the disaster damages was not exceptional.

## **2-2. The 1891 Nobi Earthquake**

The 1891 Nobi Earthquake stroke mid Japan, and caused more than 7,000 victims mainly in Gifu and Aichi. On the way to the modern state, Japan had been eager to come up with the western countries, not only organizing the modern political and social systems, but constructing railway, modern ports, brick buildings for central government offices, and so on. However, these modern facilities had been collapsed. Meiji Government took relief measures urgently, such as the delegation of Prime Minister and government officials, Meiji Emperor's donation for the sufferers, delegation of doctors and nurses for the wounded and of seismologists, architects, or scholars of the related major, and so on. I will describe here the features of the relief and recovery measures taken by Meiji government. I explain in the following that the first is the relief system for each sufferer, and the second is for the reconstructions of infrastructure, then, the third is an establishment of the seismological survey institution as the prevention measures and so on.

# Relief System : Table 1 is about the various relieves together.

Table 1. Damages and Relieves of the 1891 Nobi Earthquake

| item                    | Gifu pref. | Aichi,pref |
|-------------------------|------------|------------|
| suffered people         |            |            |
| the killed              | 4,901      | 2,459      |
| the injured             | 7,967      | 6,736      |
| total                   | 12,868     | 9,195      |
| suffered/all            | 1.4%       | 0.6%       |
| destructed houses       |            |            |
| burned down             | 5,349      | 86         |
| destructed              | 42,945     | 34,494     |
| half-destructed         | 15,606     | 23,968     |
| total                   | 63,900     | 58,548     |
| destructed/all          | 35.0%      | 18.0%      |
| Relieves                |            |            |
| ① official relief(¥)    | 780,360    | 530,383    |
| ② act by Emperor        | 100,000    | 100,000    |
| ③ donation by emperor   | 14,000     | 14,000     |
| ④ donation among people | 220,321    | 80,000     |

from I.Kitahara edit.(2006) 'Japanese History of Disasters'

(Table 1)

Based on this table, we can grasp the outline of the damages and relieves in Gifu and Aichi prefecture. Of course, there were the damages around the neighboring prefectures which are omitted here.

The damages of Gifu prefecture is much more than those of Aichi, and it is dreadful that the destructed houses in Gifu occupied more than 30% of all. Besides, including the cities of Gifu and Oogaki where they were well developed towns since the Edo period were largely burned down. To these damages, relieves based on the 1880 Saving Act were supplied to the sufferers( cf.① of Table 1). Next, skipping ② imperial rescript, the donation not only by Emperor but by the ordinary people had been very effective in the case of sudden disasters, because it was not regulated how to use. Moreover, the donation by Emperor or by the ordinary people encouraged the sufferers ( cf.③,④ of Table 1). The donation among the people seemed to be a kind of disaster culture rooted in the Japanese society. At that time, the newspaper companies collected the donations through their papers. So the huge amount of the donation were widely collected from anywhere the newspaper were read.

### # Subsidy for Recovery :

Then, we talk about the reconstruction of infrastructure of the Nobi Quake. The Meiji Constitution was proclaimed in 1889, and the Diet was opened in 1890. The relief measures for the Nobi Quake brought political actions among the members of the national Diet and also local assemblies. The cabinet submitted the imperial rescripts of the relief money for the reconstruction of infrastructure two times amounted 5,000,000 yen in the Diet session. With sharp controversies about the imperial rescripts, the relief supplies were managed to pass as Imperial rescript no.55 in 1890, and no.247 in 1891. This huge amount of relief money was to be spent from the governmental reserved fund of the budget. However, as a consequent of the disputes between the ruling party and the opposite, the Diet was dissolved in 1892.

### # Prevention Measures :

The terrible damages of the infrastructures such as railways, modern brick buildings and so on, led public opinion that it was necessary to organize some modern seismological survey. At that time, the University of Tokyo had been being made up of Japanese scholars returned from abroad, instead of foreigners hired by the Meiji Government. At the same time, those Japanese scholars were the members of the governmental officials, occupying the executive positions. Imperial rescript no.55 of 1892 ordered to organize the Committee of Seismological Survey for Prevention Measures (震災予防調査会), constituting of the related scholars of the Imperial University of Tokyo. This committee continued until the 1923 Great Kanto Earthquake. The committee had left behind many important reports about earthquakes, tsunamis and volcanic eruptions of old and new. We can say the Nobi Earthquake opened the door of prevention measures against the earthquakes in Modern Japan.

### **3. Conclusion**

Now, we could realize the differences of the social attitudes toward the damages by the natural disasters between in pre-modern and in modern Japan. Firstly, at the under-modernized stages of the society like pre-modern Japan, the relief and recovery measures by public organizations are focused into the directly urgent supply for the people with hardship. On the contrary, at the modernized stage of the society, most of the recovery funds can not help being expended to reconstruct the social infrastructure. However, through the disasters of the Japanese history, we can learn the symbolic features, the Tokugawa Shoguns in the feudal ages, or the Emperor in Modern Japan, were promised to carry out important roles as if they were Salvationists in the crisis. Besides, the donation among the people has been keeping up or spreading more widely through the history. We can say this custom is to be typically traditional in the Japanese disaster culture. Around the end of the 19th

century, this tendency was accelerated by the media such as newspaper with its quickness, photograph with its reality. We can find a clear case of these features at the transition time from the pre-modern and modern Japanese disaster history.

※This paper is a summary of the chapter 3, 4 of 'Japanese History of Disasters' (I.Kitahara, 2006).