BOOK REVIEW

Disaster Records of the Isewan Typhoon

Ed. by Mie Prefectural Government, Mie: Mie Prefectural Government, 1961*

Ryoichi FUKAGAWA**

"Disaster Records of the Isewan Typhoon" has been compiled from the standpoint of Mie Prefectural government about the typhoon and gives detailed explanations such as the condition of the typhoon, the cause of the damage and its characteristics, the location of the damage, and emergency response measures and legislation. This report is worth reading for the consideration of countermeasures against the coming super typhoons.

The Isewan typhoon (Typhoon Vera) is the typhoon that caused the most damage since the Meiji era (1868-). It hit Cape Shionomisaki on September 26, 1959 and had a great impact from the Kii Peninsula to the Tokai region with devastating damage particularly in Aichi and Mie prefectures. According to the White Paper on Disaster Management, the death toll was 4,697 and 401people were missing . In addition, 40,838 houses were completely destroyed, 113,052 were partially destroyed, and 157,858 were flooded above floor level. The number of casualties (dead and missing) reached approximately 3,300 in Aichi Prefecture, 1,200 in Mie Prefecture and around 100 in each of Nara and Gifu prefectures.

The reasons why the Isewan typhoon caused such enormous damage are described in detail in this book as being due to multiple factors. First, the typhoon itself was huge and had an extensive storm area of torrential rain. When I was a high school student, I found an atmospheric pressure chart in a paperback showing the pressure pattern of the Isewan typhoon at landfall. I remember that I was overwhelmed by its scale covering almost the whole of Japan. The diameter of closed isobars reached as long as 2,500km exceeding 2,000km of the Muroto typhoon. When the typhoon made landfall near Cape Shionomisaki on the Kii Peninsula, the pressure was 929 hPa, and it continued to move northeastward without any significant reduction in its strength. Therefore, strong winds blew everywhere and, in fact, a maximum wind speed of 45.4m/sec and gusts of up to 55.3m/sec were observed at Atsumi-cho Irago, Aichi Prefecture.

Second, the typhoon caused a storm tide that led to further damage. The low barometric pressure of the typhoon caused the sea surface to be sucked up and surged toward the coast of Ise Bay by strong

---

* 三重県編『伊勢湾台風災害誌』三重県

** Professor, College of Science and Engineering, Ritsumeikan University
Email: fukagawa@se.ritsumei.ac.jp

Journal of the Asia-Japan Research Institute of Ritsumeikan University, 2020.
PRINT ISSN 2435-0184 ONLINE ISSN 2435-0192, Vol.2, pp.181-183.

winds from east and southeast which the typhoon generated in the process of moving through its course. The shallow depth of Ise Bay also worsened the damage as the sea level rose up to four meters higher than normal tide levels at some places, and the storm tide easily flooded over the seawalls constructed along the coast.

This book points out clearly that disaster management and evacuation guidance systems for dealing with such a typhoon as described above were not sufficient at that time. Before it made landfall near Cape Shionomisaki at 18:13 on September 26, the rainstorm warning and the storm surge/high wave warnings were announced at 11:00 and at 11:30 respectively. Unfortunately, they were grossly underestimated, as the maximum wind speed was predicted to be 20-25m/sec with maximum storm tides just 1-1.5m higher than usual. Then, at 17:00, the rainstorm warning was updated and the expected maximum wind speed and was revised to over 30m/sec with gusts of over 50m/sec, although by this time it may have been a little too late to evacuate.

Regarding heavy rainfalls, the maximum continuous rainfall amount observed at Mt. Odaigahara was 825mm. Even though this was less than about 2,000mm observed in the mountain area of Kii peninsula at the time of the Kii Peninsula flood in 2011, record rainfalls of 118mm/hr and 650mm/day were observed in the Yoshino district of Nara Prefecture. In fact, many bridges were washed away, and the embankments were burst in Kino river and Kushida river. This resulted in a number of victims in Nara Prefecture.

The deficiencies of Japan's disaster management and emergency evacuation guidance systems were revealed by the Isewan typhoon. After that, the Disaster Countermeasures Basic Act was enacted in 1961, and the construction of seawalls and embankments was promoted throughout the country. Meanwhile flood control measures were strengthened.

In recent years, the tendency of typhoons to grow to a massive scale is becoming more apparent, most likely due to the effects of global warming. Recent remarkable examples are Hurricane Katrina which struck the southeastern United States at the end of August 2005 and Typhoon Yolanda which hit the Philippines in November 2013. Hurricane Katrina generated a maximum wind speed of 78m/sec and Typhoon Yolanda reached 87.5m/sec on average. Both were exceptional among recent cases. If you are thinking that those typhoons had nothing to do with you, you had better change your attitude. Given the fact that we experienced the Isewan typhoon at a time when the impact of global warming was not that serious, the possibility of stronger typhoons attacking us in the future is thought to be increasing.

I am concerned about an increase in damage that might occur in the case of a stronger typhoon than the Isewan typhoon. After World War II, people have been endeavoring to construct infrastructure such as embankments and seawalls for the restoration of devastated national land. This effort has made it possible to control the damage caused by normal scale typhoons, as is quite obvious if you see the changes in the number of victims caused by natural disasters in the post-war period. However, the development of social facilities has weakened our instinct for self-protection and has lessened our fear of natural disasters. For example, suppose an area has been protected with river embankments of a certain height for many years, people tend to assume that the area is safe from disasters and the population in the area will increase. As a result, once the embankment breaks, the damage will increase considerably. Unfortunately, this was proved in the Kanto-Tohoku Heavy Rainfall in September 2015. Since then, large-scale disasters caused by river embankment failure such as the Western Japan Heavy Rainfall in July 2018 and the Kanto-Tohoku Heavy Rainfall in October 2019 have been occurring continuously.

There were more than 1,200 casualties in Mie Prefecture due to the Isewan Typhoon. This book includes a note from a junior high school student that touches our hearts strongly. Her family consisted of six members, that is her grandmother, father, mother, herself and two younger brothers. Their house was attacked by the high tide, and only she survived the typhoon. Whenever we see this kind of tragedy, we think truly that we must not suffer casualties due to typhoons or heavy rainfall anymore. Appropriate evacuation measures are particularly important in order not to suffer casualties. Compared to the 1960s, information on typhoons and heavy rainfall is much more widespread, and the methodology of "timeline" is steadily spreading at present. If a large-scale disaster is predicted, we must overcome the "normalcy bias", expect the worst case scenario, and evacuate promptly. We can only hope that the awareness of the population about potential disasters will be increased in the future.