

## Typhoon 23 (Typhoon TOKAGE)

### Meteorological Phenomena

The typhoon that developed in the vicinity of the Mariana Islands at around 0900 JST on October 13, 2004, gained momentum as it moved in a northwesterly direction, and by 0900 on the 18<sup>th</sup> it was of extraordinary force when it approached the Okinawa Islands from the south. After striking the main Okinawa Island and sweeping by the Amami Islands on the 19<sup>th</sup>, the typhoon struck the south coast of Shikoku district at around 1300 and reached the vicinity of Izumisano City in Osaka Prefecture a little before 1800 on the 20<sup>th</sup> retaining its mighty force all the while. At 900 on the 21<sup>st</sup>, it turned into an extratropical cyclone off the east coast of the Kanto area after transversing East Japan.



TOKAGE Typhoon Track

Total precipitation pouring down over an extensive area as a consequence of the typhoon and frontal depression exceeded 500mm in the Shikoku district and Oita Prefecture in Kyushu district and more than 300mm in the northern Kinki, Tokai and Koshin districts. An all-time high level of precipitation per day was recorded in many locations from Kyushu to the Kanto district, and windstorms and high waves struck an area from the Nansei Islands up to Eastern Japan.

### Damage

The number of victims was high and the damage as a result of this typhoon was very extensive: 90 dead, 4 missing and 86 injured; 188 houses totally collapsed, 914 partially-collapsed, 10,584 damaged in part, 21,812 flooded above floor level and 40,105 flooded below floor level (Fire-Defense Agency survey as of November 10, 2004). Another figure that shows the extent of the damage nationwide is the fact that 19,454 public facilities under the jurisdiction of the Ministry of Land, Infrastructure and Transport in 43 prefectures and specially designated large municipalities suffered ¥282.9 billion worth of damage.



(1) Nanase River, Ooita River System (Ooita Prefecture)



(2) Iyomishima Line (Kochi Prefecture)



(3) Honzu River (Kagawa Prefecture)



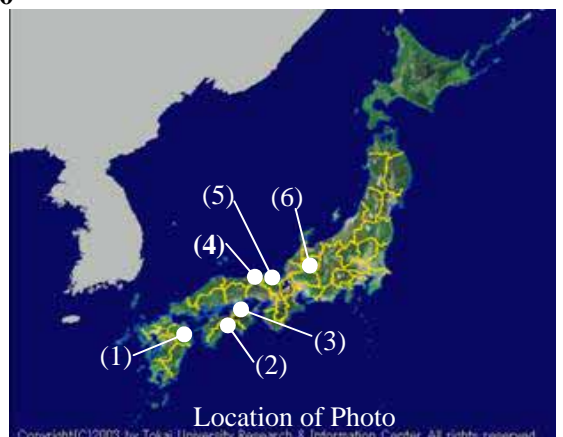
(4) Right Bank of Maruyama River (Hyogo Prefecture, Toyooka) October 21, 9:00



(5) Okawa Bridge on Yuragawa River (Kyoto Prefecture, Maizuru) October 21, 13:00



(6) Kawaue River, Jinzu River System (Gifu Prefecture, Kiyomi)



Location of Photo