



Awesome eruption . . . the effects of the volcanic explosion at Krakatoa (left) were felt worldwide and thousands died. In Belize grog boats were wrecked (above) and the city destroyed

# Tides of terror

Over the centuries more people have been killed by tidal waves than the direct action of volcanos, earthquakes or cyclones. The deadly power of these mighty waves — or tsunami — was demonstrated last week in Papua New Guinea as fishing villages lay devastated beneath three gigantic tidal waves.

Tsunami can be caused not only by underwater earthquakes — as is believed was the case in PNG — but by land-based earthquakes, volcanic activity or cyclone-force winds.

One of the world's most catastrophic tidal waves occurred in Indonesia on August 27, 1883, when Krakatoa, a volcano on an island in the Sunda Strait, erupted. The force was estimated at more than 100 times the power of any atom bomb yet exploded.

The volcano — which had not erupted since the 17th century — showed intermittent activity from May 20 until the ultimate eruption at 10am on August 27.

Rocks were hurled 55km into the air, ash rose 80km and brought death to those living within 7500km of the explosion.

Ash fell over 800,000sq km, a mighty cloud of dust sped around the world several times and led to some of the most spectacular sunsets in history. The explosion was heard in mainland Australia more than 3500km away and the shock waves were felt in Tasmania.

The eruption killed about 40,000 people. Initial casualties were due to the streams of molten lava and the suffocating clouds of ash, poisonous gases and devastation as buildings collapsed and people were killed by falling trees and flying boulders.

But the most terrifying phenomena were the huge tidal waves the explosion unleashed. These swept

round the globe leaving a path of destruction and suffering in their wake. The reverberations reached the English Channel.

It is believed the main wave was about 25m high when it struck the coastline. It raced across several small local islands and crashed into larger out-islands. On one isle, a Dutch warship and two schooners were swept nearly 4km inland.

But the havoc was not restricted to local islands — it extended to the heavily populated shores of Java and Sumatra, where tidal waves reached heights of 40m when they hit land.

Thousands of native canoes were swirled into oblivion; villages disappeared without trace; two stone-built lighthouses crumbled. More than 160 villages were wiped out; upwards of 36,000 people drowned.

The savage — but near-invisible — waves raced across the Indian Ocean. Out at sea, tsunami are virtually undetectable.

They are a series of waves — sometimes tens of kilometres apart and possibly less than 1m high — that roll across the ocean at enormous speed.

As they near land and shallower water, the front line of waves slows. But the middle and rear waves travel on relentlessly, until they clash in one horrendous maelstrom, rolling over any barrier in their path.

After Krakatoa, the tsunami built as it crossed the Indian Ocean. There were thousands more victims on the island of Ceylon (now Sri Lanka).

Low-lying villages were inundated; flimsy native huts reduced to matchwood; men, women, children along with pets and livestock were drowned outright or killed by floating debris.

While the effects of Krakatoa's eruption were the most devastating recorded, other tidal waves have wreaked horror. In 1931, Charles Beattie, manager of a Canadian

bank in British Honduras, now Belize, thought the cloud patterns were unusual for a September morning.

But he shrugged off his concern. It was a public holiday and the capital was set to party with typical Caribbean festivities including dancing and singing in the streets.

There had been light rainfall early in the morning and carnival organisers met briefly to discuss whether to postpone the celebrations. But when the sun broke through, they decided the weather would hold.

A warning had been broadcast earlier in the day that storm conditions, apparent some 250km south of Kingston in Jamaica, were moving west-north-west across the Caribbean.

But revellers in Belize were more concerned with putting the finishing touches to a late-night giant party.

The processions began with young children parading down the streets in front of proud parents. Rain fell again, but once more it was decided not to postpone the event.

Beattie, who had watched the cloud patterns become more formidable, suddenly realised they harbingered death. Shouting warnings to neighbours, he battered down his house.

But in the crowd filled streets, no one noticed anything amiss. More rain fell, whipping horizontally along the streets. Fierce gusts of wind made it obvious the celebrations would have to stop.

But it was too late. A hurricane came screeching across the sea with winds estimated at 150km an hour.

Buildings collapsed, sheet-metal roofs slewed along the streets and trees bent and snapped.

Within half-an-hour the first victims were arriving at the hospital. But, even as they were taken to safety, the wind dropped and an eerie silence descended on the panic-stricken citizens. Belize was now in the eye of the storm.

There was a 20-minute lull before the hurricane ripped back over the defenceless city at 200km/h, driving high waves before it.

Boats in the harbour sank or were hurled into mangrove swamps. Among them — in this era of Prohibition in America — were high-powered motor launches designed to run the gauntlet of Prohibition enforcers employed to intercept sea-going smugglers and their bootleg grog before it reached American shores.

The shattered vessels disgorged case after case of contraband spirits, many of which amazingly survived the onslaught.

The wave was less than 1m high when it hit the beach but as it swept through the city, it gained momentum until it was more than 5m tall, crushing all before it.

Worse was to follow. As the wave began to retreat, it sucked in inhabitants and debris.

It took five minutes for Belize to be swept into the sea. More than 2000 died and the streets were clogged with wreckage, mud and bodies.

The wind ceased but the night was cold. There was no electricity and the survivors huddled together until dawn revealed the toll.

The Public Works Department set up food kitchens and organised burial parties, until help reached the city with the arrival of US and British warships bringing food and clothing.

Several staff at a nearby psychiatric hospital were killed. The local poor house, packed with women, was swept up in the outrushing water and washed out to sea. Not one body was recovered.

Charles Beattie and his neighbours survived but many years passed before the September carnival was held again.

MARGOT PITKIN