

LIVING WITH THE VOLCANO

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ABSTRACT: The volcanic peninsula Sakurajima dominates Kagoshima Bay in southern Kyushu, Japan. A major eruption in 1914 devastated the city of Kagoshima. For decades, eruptions have been minor but frequent, occurring with daily frequency in recent years. In 1991 Sakurajima erupted 440 times. Sakurajima's landscape affords abundant evidence of its cataclysmic past and of ongoing efforts to minimize the impacts of future eruptions. In one sense the precautionary measures are very much what one would expect of an affluent society's response to a major hazard. Japan can afford to protect its 5245 Sakurajiman residents. Yet closer scrutiny reveals a pattern of adaptation and response which is centered on core values and their expression in Japanese culture. In some respects these values have been relinquished or modified to accommodate the harsh environment. In other respects they show almost cavalier disregard for Sakurajima's destructive potential, and astute recognition of its economic benefits. And in a wider sense Sakurajima is Japan itself in uneasy microcosm, an emblematic and endless saga of environmental challenge and human response.

One glances a lot in Kagoshima. The city lies low and vulnerable, four kilometers and an exhalation away from Sakurajima, a volcano slowly reclaiming its old patrimony in the caldera expanse and ancient crater walls of Kagoshima Bay. Sakurajima is a busy volcano. Two years ago it erupted 440 times. Like so much else in Japan, Sakurajima's numbers shroud its reality. Precise integers pepper the Visitors' Center and the downtown Natural Science Museum's volcano room. Like lava, the numbers are overpowering, inexorable, and numbing.

Numbers and volcanoes find an uneasy truce. The small eruptions, 440 one year, 290 another, seem seamless and uncountable. Long phases of Sakurajima's steam cloud emissions throw a benign white pennant downwind; it is this friendly face of Sakurajima that Japanese artists and photographers have favored. All over Kagoshima commercial art plays on this graceful image, pictured as though, like a cruise liner, Sakurajima had slipped its moorings, and was quietly and slowly leaving the bay. But in reality the steam clouds eventually concede to a sudden outburst of ash. This is pushed skyward and briefly suspended with the palpable form of a dissected organ. Soon the cloud sails and then falls in slow disarray on to the slopes, lava fields, terraces and settlements which ring the cone and nudge the peninsula's perimeter road. Before 1914 and the addition of three billion tons of lava Sakurajima was an island. In 1955 its shoreline changed. In the 1980s its activity intensified. Sakurajima is a busy volcano.

The eruption continues as smaller tumulus clouds of ash and steam are thrust underneath and around the now shapeless wind-shifted mass. It is these further punctuations of the now-muted first blast that make counting Sakurajima an odd simplification of the sky's theatrics. It seems that these extra detonations of ash simply don't count.

Under the volcano the landscape constantly betrays Japan's penchant for overcoming big problems with bright solutions. Rain on Sakurajima is no singing matter; it lubricates and launches a sea of the kind of volcanic sediment that can quickly envelop and kill in other settings,

such as the Philippines' Pinatubo, where even temporarily channeling such mud flows is a close to impossible task. Around Sakurajima the conduits, culverts, and grand mud canals sit ready for all but the most unthinkable rush of accumulated sediment from the volcano's slopes. The expense to build all this must have been gigantic. Sakurajima peninsula has 5245 residents.

With the ash comes the occasional rain of projectiles, volcanic bombs sometimes large enough to pass through all but thick concrete. Such bombardment is rare, for Sakurajima is as considerate as it is busy, and mostly casts its plume of fine ash in a deep long bow eastward toward the thinly settled Osumi Peninsula, which terminates at Cape Sata, the southernmost point of Japan's four home islands. Still, fallout is a constant threat confirmed by hundreds of small concrete structures with arched roofs, Bauhaus kennels ready to afford short-term protection to Sakurajima's permanent residents. Along open-air public paths occasional small concrete hangars afford some protection, while here and there teahouse-like shelters built for the ages aim at achieving a dainty reassurance that the hiker need not be caught napping when the lethal rain of ash descends. Mask-toting children make their way to and from school in bright yellow hardhats, and Sakurajima's public telephones afford the odd experience of outdoor conversation with head bowed under many tons of arched reinforced concrete. The sense of war-readiness is palpable everywhere.

Sakurajimans must even forswear some of the most sacred vertiges of modern Japanese consumer society. Their cars are not necessarily white, for this peculiarly homogeneous feature of contemporary taste one encounters in Japan becomes simply unsightly under an almost daily dusting of talc-like volcanic ash. Their cars are not necessarily new either, or even free of corrosion, for rust and compromise seem to be inevitable concomitants of the dilute sulfuric acid and salty air that characterize life sandwiched between the volcano and Kagoshima Bay. If it were not for the tiny scale and bizarre English model names of the pick-ups, runabouts and vans, one might almost imagine oneself in an American car park, for on Sakurajima and in Sandusky, vehicle color and condition are just as uneven.

Environment coping is an ancient talent in Japan, and volcanoes worldwide seem to breed a spirit of resolve and adjustment that seems foolhardy to the outsider. Twice a day the JR tour bus follows its meticulously timed route along a road carved through the repeated ridges of old lava flows. One landmark of this defiant itinerary is an old Torii gate at Kurokami, the only visible reminder of a village buried by the cataclysmic eruption of 1914. Just over three feet of the Torii protrudes to afford one of the many group photo opportunities so characteristic of Japanese tourism. Next to the Torii is a newish school, an act of bravado reminiscent of the reservoir that straddles the crossing of the Garlock and San Andreas faults near Los Angeles.

As Sakurajima erupted in 1914, the artist Kuroda Kiyoteru painted an exquisite series of impressionist canvases that now take evident priority over Renoir, Matisse, and Cezanne in the Kagoshima City Museum of Art. The paintings evoke the drama of the event in bold strokes of mauve, russet, pink, and white. The volcano's base is captured by long powerful brown brush strokes. A sense of endless sunset dominates. Contemporary photographs in 1914 give the lie to this dramatic yet somehow benign image. In fact for days the scene was a dusty choking mess for miles around, a nightmare the more graphic for its utter contrast with the tidy brightness of Kagoshima's modern streetscape.

Coming to terms with the volcano can be very profitable. More than three million visitors a year converge on Kagoshima, and large ferries scuttle to the Sakurajima terminal at a steady fifteen minute interval. The underground turmoil brings with it the consoling amenity of natural hot baths in remarkable profusion, an apparently universal source of regular public enjoyment in Kagoshima City and a key tourist attraction in settings such as nearby Ibusuki's natural hot beach

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sand baths (medicinal burial) and Sakurajima's own Furusato Spa, where hot water is jetted at high and pleasure-pain pressure into a seashore pool and grotto. Mixed bathing at Furusato in barely modes yukatas is an enticing escape from the darker thoughts that Sakurajima can evoke.

The volcanic soils (shirasu) of Sakurajima yield the world's smallest tangerine and its largest radish. The latter, the Sakurajima daikon, is displayed by food and souvenir roadside vendors with the serious pride and one-upmanship one associates with fishermen's stuffed trophies in America. The tangerines, which sell at a premium, are individually shielded from the airborne dust, a glittering white confetti in small groves which rise in terraced precision to the base of the peninsula's long three-peaked mountain. The effect is strikingly reminiscent of the paper fortune texts folded into strips and tied to trees, bushes, and frames at shrines and temples throughout Japan. Sakurajima's groves seem to suggest a sacred space of expiation and supplication. For now at least the volcano seems to have heard these prayers.

Challenge and response. These are never far from one's mind as emblematic keys to Japanese culture, and in that sense Sakurajima is Japan in uneasy microcosm. The country seems poised to redefine its national mission after almost a half century of methodical advance. Step by step the rise of modern Japan's industry and infrastructure was the phoenix all could feed and feed on, best encapsulated perhaps by the steady and stunning development of the high-speed train network or shinkansen, a system that remains unmatched anywhere for its extent, speed, frequency, safety, convenience, cleanliness, daring engineering, and thoughtful design. I single this out because it is such a public celebration of the Japanese way of doing things, and is clearly thought of as such by the Japanese themselves. And of course much the same error-free ethos has been devoted to Japanese industrial, financial, and retail initiatives overseas, with more mixed outcomes given some necessary cultural compromises involved and occasional cultural resistance too. At home, given its repeated airing, the theme that Japan is a small island country with limited resources remains a powerful warning beacon. It is this received wisdom that in part explains the very definite national and personal commitment to Japan's education of its young as a compensating asset in a resource-poor nation. The notion of its limited size and resource base can be and is overstated, but its mythic power is undeniable. The problem is that any new external national initiative is almost guaranteed to risk exacerbating growing international resentment of Japan's success and expansionism. Where the potential is greatest memories are long, and China is unlikely to relish the prospect of increasing Japanese ownership and control of its domestic economic base. Thus Japan must push ever harder to make its groves of academe and science bear the fruits of sustenance as it nestles at the foot of a Sakurajima of uncertainty and political upheaval in the new Asia. Perhaps it can set out to forge a sustainable environment and find a sufficient 21st century mission in the greening of Japan. Such a creative and collective quest would certainly be consistent with historical precedent. But then again, Asia is a busy volcano, and it too defies easy prediction.