

## **The Deformed Monkeys of Awaji Island Monkey Center**

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The Awaji Island Monkey Center is located at the southern end of Awaji Island in Hyogo Prefecture, Japan. The island lies between the eastern end of Shikoku and the main island of Honshu. The Monkey Center is situated on a steep forested hillside of the Kashiwara Mountains overlooking the Pacific Ocean. At present the group numbers around 220 monkeys. The monkeys are Japanese macaques (Nihonzaru). This is the northernmost monkey species in the world, inhabiting the coolest climate of any of the world's 200 or so monkey species. Their habitat is the warm temperate and mountain forests of Japan and they can be found as far north as the Shimokita Peninsula in Tohoku in northern Honshu. However, the greatest numbers are found in the southern coastal and mountain areas.

The Awaji Island Monkey Center was established in 1967. Mr. Minoru Nakahashi began feeding the monkeys there in January 1967 with the agreement of the local people in order to prevent the monkeys taking the local farm and orchard produce. The center itself was opened in July 1967 as an outdoor education center to utilize the natural environment. At the beginning the group numbered around 50.

Regrettably, the center has become known for its deformed monkeys. Prior to 1967 the percentage of deformed births among the area's monkey population was around 1%. But as the population increased the percentage of deformity accelerated. By 1983, 63 out of 271 monkeys had been born deformed. Deformity is common among the Japanese macaques. There are thought to be around 30,000 Japanese macaques in Japan and of 74 investigated groups 29 had deformities. Out of 37 groups that have adapted to being fed by humans 20 had deformities. Those groups with greater than 5% deformity are mainly fed by humans. The percentage of deformity typically increases after the start of human feeding. The case of deformities in the Awaji Island group is peculiar in that the increase began only 2 years after manual feeding began. This is much earlier than in most other groups. Deformed monkeys have been born in the group every year since 1969. The percentage of deformity varies from year to year.

The cause of deformity appears to be agricultural chemicals. The natural diet consists of leaves, fruit, nuts and insects. Monkeys have taken food from farms and orchards where chemicals have been used. When fed by humans the diet consists of wheat, soybeans, peanuts, oranges and apples.

The deformities mainly appear in hands, feet and limbs in various ways, particularly split, twisted, joined, lacking or short fingers and toes. The average number of deformed monkeys born in the group has been 17% over the last 20 years. Additionally, deformity may be linked with the environmental hormone because both deformity and hormone problems are commonly caused by chemicals. It is supposed that chemicals act on both growth hormones and on procreative hormones. Cases of lack of fingers and shortened limbs may be caused by growth hormone shortage, while cases of too many, for instance 9 fingers on one hand, may be caused by growth hormone excess.

Mr. Nakahashi has devoted the last 32 years of his life to the monkeys of the group. He is a very inspiring person and we cannot fail to be moved by his commitment to the monkeys. He has worked hard to expose the problem and to increase public awareness of the deformities at the center. Mr. Nakahashi's efforts have been largely self-funded, and by the contributions of the general public visiting the center.

Mr. Nakahashi calls on us to consider that the problem of deformities among the monkeys runs very deep and must be of great concern to humans in terms of the present situation of agricultural chemical use and the legacy being left to future generations, both human and non-human. Research shows that the direct cause of deformity appears to be TCDD, PCDD, dieldrin and heptachlor. These chemicals are banned for use in Japan, but nevertheless they have been exported to developing countries. In turn, Japan has imported foods grown using these chemicals. Mr. Nakahashi regrets that the exporting of chemicals banned in Japan brings shame on the nation.

Mr. Nakahashi urges us to realize that the problem of deformity among the Japanese macaques is essentially embedded in our modern, materialist, industrial society. He asserts that Japan has followed the western lead of economic growth and that the Japanese people have become westernized in the sense of embracing materialism, consumerism and the goal of ever-increasing financial profit. In so doing, the Japanese people have forfeited the qualities of the inner-life. The Japanese have abandoned the life of contemplation and inner growth in favour of external, material gain. These materialist, expansionist urges have resulted in great environmental destruction and the unleashing of toxic, man-made agents into the environment in the drive to maximize production, consumption and economic growth.

Mr. Nakahashi stresses the importance of maturity. If we learn to live our lives from a calm, balanced, contemplative inner position we will be content to live more simply in the world. Conversely, our striving after material possessions, external wealth and personal acquisition reflects an unsettled, unbalanced, immature inner life.

Thus we can see that the full understanding of environmental issues such as deformed monkeys involves seriously addressing, reevaluating and transforming the assumptions, perceptions and values of modern industrial society. The solution goes much deeper than merely banning this or that chemical.

Mr. Nakahashi calls on the Japanese people, and indeed all of us, to reevaluate and transform our lives and activities in the world. It is Mr. Nakahashi's hope that the Japanese people can leave behind western materialism and regain the quality of the inner life. Only by doing so can humans gain insight into their essential place in the world, their oneness with the world, their true home, and so develop attitudes of care and responsibility towards the environment and other beings.