

The Arsenic Milk Poisoning Incident

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From June to August 1955 in the western areas of Japan, including Kinki, Chugoku, Shikoku, and Kyushu, 12,131 new-born babies were poisoned and 130 died (according to a 1956 Ministry of Public Welfare survey), because during production arsenic had been mixed into the Morinaga Powdered Milk 'MF' produced by the Tokushima plant of the Morinaga Milk Company.

In March 1981, after 26 years had passed, it was finally acknowledged that 13,389 persons had ingested MF milk, that 600 persons had died as a result, and that 6,093 persons were suffering from continuing health difficulties, with 624 afflicted by severe mental retardation, developmental difficulties, and brain-damage-related paralysis.

If one were to attribute the cause of this incident simply to a default in the production system of powdered baby milk, then one would fail to see its true repercussions. In fact, the incident was part of a social trend in which the practice of breast-feeding fell victim to the mechanisms of mass consumption promoted by the dairy industry, which took advantage of the general atmosphere in society at large, the medical administration, and, particularly, the community of paediatricians.

I. Baby Milk in the Structure of the Consumer Economy

Japan's public health administration mechanism in the post-Second World War period developed along the lines of the existing Health Centre Law, which was totally revised in 1947 on the basis of the Memorandum on Public Health Measures issued by the General Headquarters (GHQ) of the Allied occupation forces, with the main emphasis on maternal and child health protection and the eradication of tuberculosis using existing health centres (*hokenjo*) as its primary implementation instrument.

In pre-war Japan, which had high infant mortality levels (fig. 3.1) and a

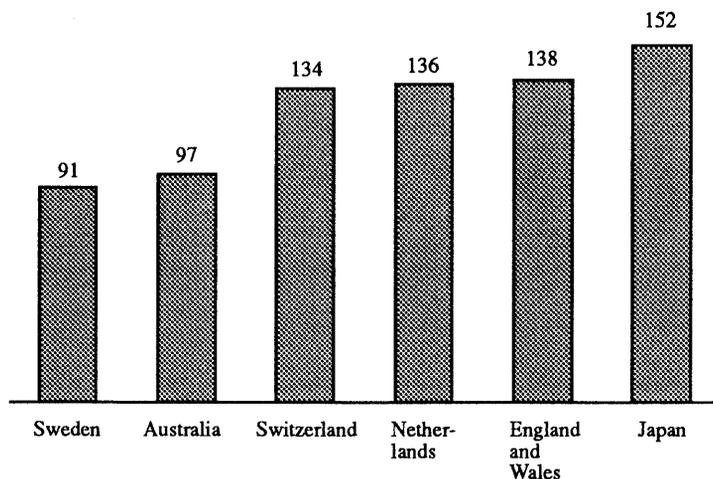


Fig. 3.1. Infant Death-rate, 1901–1905 (per 1,000) (after *Kenko to jinrui*, p. 72 and table 3.1).

high death-rate among young people from TB, the average life-span was much shorter than in Western countries (table 3.1).

A dramatic expression of the adverse social conditions under which pregnancy occurred is indicated by the high death-rates for pregnant women (fig. 3.2). The Japan that was bent on invading other countries was very concerned with improving the pool of battlefield human resources, and in 1936 established the Ministry of Social Welfare. At that time the government was aiming at a population of 100 million by 1960 (a large increase over the population of the time) and set up policies to encourage the realization of this goal. However, these policies were not successful before the war, and, after defeat at the hands of the Allied forces in 1945, they remained in the government lexicon of treasured hopes.

In July 1948, because of the very rapid growth in the population after the

Table 3.1. Average Life-span, 1929–1940

Country	Year	Male	Female
Japan	1935–1936	46.92	49.63
UK	1936–1938	57.80	59.20
France	1933–1938	55.94	61.64
Sweden	1931–1940	63.76	66.13
USA	1929–1931	61.60	60.99

Source: Ministry of Health and Welfare, *Iryo hyakunenshi*, Annex: “Iryo tokei kara mita isei 100 nen no ayumi,” p. 15.

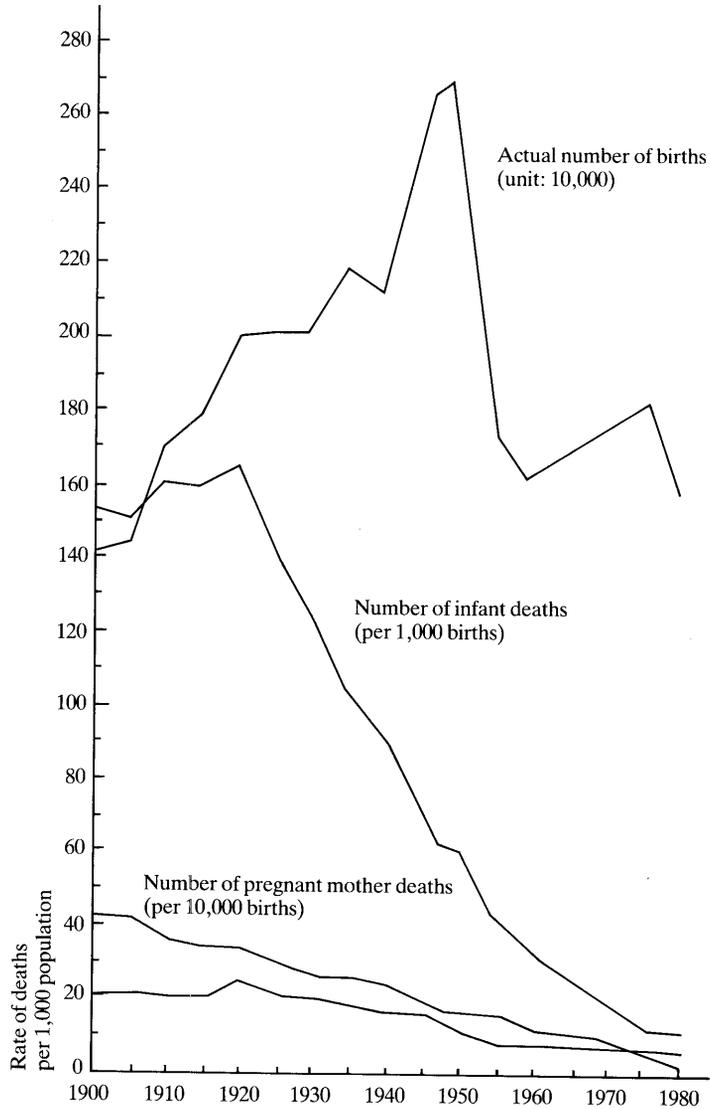


Fig. 3.2. Changes in Birth- and Death-rates of Infants and Pregnant Mothers (after Ministry of Health and Welfare, *Boshi eisei no omonaru tokei*, 1959 and 1981).

war, the Eugenic Law was established as a method of population control, and in August of the same year the pre-war policies in relation to guidance for pregnancy and baby health were revived. Owing to an extreme shortage of food, powdered milk was distributed through the work of the United Na-

tions UNICEF organization. The occupation army also delivered canned and powdered milk for emergency use and, from 1947 on, skimmed milk from the USA was distributed through the school-lunch programme. From 1949 to 1950, while the USA was experiencing an economic depression, the surplus of milk produced in that country was exported to Japan, placing pressure on the domestic market and increasing the number of people who became dependent on milk as part of their daily food intake.

From 1949, a "National Baby Contest" was organized under the auspices of the Ministry of Health and Welfare and the *Yomiuri shimbun*. The aim was to encourage baby health and the proper nutrition of children. The healthiest one-year-old boy and girl babies born between March of the previous year and February of the current year were to be chosen from babies throughout the country and named as the winners of the contest on 5 May, which is Children's Day.

The most difficult time in life for growth is the first few years. Whether a child will survive or not depends upon basic conditions such as the availability of plenty of breast-milk. Milk provided by a human mother contains protein, fat, sugar, inorganic minerals, vitamins, and small amounts of chemical elements which are essential to infant growth. Included also are antibodies to micro-organisms, produced by the mother's immune system, biological production mechanisms which result in conditions equal to pasteurization, and certain other antibodies. Natural human milk also protects infants against virus and bacterial infections of the digestive organs and the respiratory system. Artificial milk can in no manner provide this same range of protective functions.

However, the introduction and widespread use of artificial milk and the lowering of the infant mortality rate occurred at about the same time, and from this people inferred that the use of artificial milk had helped to lower the mortality rate. But the main reason for this decrease in infant deaths was related to the development of antibiotics. In reality, the infant death-rate is twice as high for artificially fed babies as it is for breast-fed ones, since human milk provides the most valuable nutrition that can be had, and also protects the new life against infectious diseases. Also, feeding the baby the natural way promotes greater human dignity, creating a bond between mother and child.

Human milk is produced through the mental stimulation invoked by the infant's crying and from the baby's sucking at the mother's breast. Because the newborn infant lacks sucking power, human milk is not produced immediately. It is therefore quite normal for a baby to lose a little weight soon after birth.

If, under these circumstances, the infant is given a bottle, satisfaction is immediate. The new baby then wants to suck on the bottle rather than at the mother's breast. Since it takes less time to bottle-feed a baby, and is more convenient—mothers and babies can be housed in separate rooms—hospital administrations intent on "rationalization" tend to favour this practice.

Table 3.2. Changes in the Labour Force 1947-1956 (unit: 1,000)

Year	Labour force population (above age 14)									
	Total Population	Population above age 14	Total			Employed				
			Total	Male	Female	Total	Male	Female		
1947	77,810	52,960	33,580	20,920	12,660	32,870	20,440	12,430		
1948	79,500	53,900	34,840	21,340	13,500	34,600	21,190	13,410		
1949	81,300	54,850	36,440	21,840	14,610	36,060	21,610	14,460		
1950	82,900	55,240	36,160	21,930	14,230	35,720	21,640	14,080		
1951	84,330	56,260	36,600	22,130	14,480	36,220	21,890	14,330		
1952	85,580	57,440	37,750	22,710	55,040	37,280	22,420	14,860		
1953	86,780	58,310	39,700	23,480	16,220	39,250	23,220	16,020		
1954	88,030	59,920	40,730	24,230	16,500	40,140	23,880	16,260		
1955	89,110	61,280	42,190	24,790	17,390	41,500	24,390	17,110		
1956	90,060	62,660	42,910	25,260	17,650	42,280	24,910	17,370		

Source: Ministry of Labour, *Rodo tokei nenpo*, 1952, p. 42; 1954, p. 25; 1957, p. 18.

Usually, bottle-fed babies increase in weight very rapidly at first, and look healthier because of this.

The nationwide baby contest encouraged the use of bottle-milk, and the practice was also encouraged by gynaecologists, paediatricians, hospitals, and clinics. In 1951, the Morinaga Company initiated a baby contest for eight-month old infants and made a great deal of money from the endeavour. From 1953, NHK (Japan National Broadcasting Corporation) sponsored a baby contest which encouraged bottle-milk over breast-milk.

The increase in the number of working mothers after the Second World War (table 3.2) again encouraged the use of the bottle, because of its convenience. In 1920, 10 per cent of infants were fed on artificial milk, but by 1970 the percentage had risen to 70.

II. Expanding Production of Powdered Milk and the Morinaga Milk Company

Powdered milk for infant consumption was first introduced in Japan during the Taisho Era (1912–1925), but before the Second World War it was mainly exported. It was only in the post-war period that artificial milk was improved in quality with the creation of milk production capital, the loosening of regulations related to milk products, the expansion of the milk product market, and the increase in raw materials for the production of milk.

Between 1950 and 1954, the production of major milk products—condensed milk, powdered milk, butter, and cheese—more than doubled (table 3.3). In 1951, the government published regulations for modified powdered infant milk products and all companies started to compete in expanding the market with new modified products utilizing new technologies such as vitamin and mineral reinforcement.

About this time each of the companies competing in the milk products field created their own trademark symbols upon which their involvement in the market was based. The Morinaga Company also competed with other small

Table 3.3. Increase in Value of Milk Products (Condensed/Powdered Milk, Butter, and Cheese) (unit: 1,000 yen)

Year	Production
1950	7,111
1951	10,069
1952	11,950
1953	13,659
1954	18,328

Source: T. Nakajima, *Gendai nihon sangyo hattatsushi 18 shokuhin* (Kojunsha Shuppankyoku, 1967), p. 312.

candy companies, putting out such things as caramels. The company's trademark, that of an angel, was very effective in forwarding corporate expansion plans. Table 3.4 indicates the fact that the trademark symbols used by the Yukijirushi and Meiji milk-product companies were very effective in expanding sales of butter.

In the pre-Second World War period the Morinaga Company had set up baby health examinations in Tokyo and Osaka in co-operation with doctors and nurses, and these activities went down well with the public. The company used this involvement and co-operation with the medical profession in efforts to promote its products.

In 1952, with a decrease in the importation of milk products, the candy and milk producers competed for resource acquisition; the Yukijirushi Company, which was based in Hokkaido, extended its offices to Tokyo, and the Meiji and Morinaga people widened their net to include Hokkaido. This competition between companies resulted in an increase in milk product prices of 50 per cent.

However, the business boom did not last, and from 1954 to 1955 the sales of milk products decreased and the companies suffered from excess stock and an inability to pay off their debts on time. As a result they attempted to increase the demand for baby milk, and increased production to meet that

Table 3.4. Changes in Capital of Five Major Dairy Product Companies, 1946-1957 (unit: 1,000 yen)

Year	Hokuraku ^a	Yukijirushi Nyugyo	Hokkaido Butter	Meiji Nyugyo	Morinaga Nyugyo ^b
1946	30,000	-	-	10,000	-
1947	30,000	-	-	15,000 (6)	-
1948	30,000	-	-	35,000 (6)	-
1949	120,000 (5) ^c	-	-	105,000 (11)	10,000 (4) 70,000 (9)
1950	-	360,000 (6)	120,000 (6)	135,000 (10)	70,000
1951	-	360,000	120,000	145,000 (12)	150,000 (12)
1952	-	410,000 (10)	120,000	300,000 (1)	150,000
1953	-	410,000	120,000	600,000 (12)	150,000
1954	-	480,000 (10)	120,000	600,000	465,000 (1)
1955	-	480,000	120,000	600,000	465,000
1956	-	580,000 (4)	120,000	600,000	465,000
1957	-	1,000,000 (1)	120,000	600,000	930,000 (7)

a. In June 1950, Hokuraku was divided into Yukijirushi Nyugyo and Hokkaido Butter.

b. In April 1949, Morinaga Nyugyo separated from Morinaga Shokuhin to become an independent company.

c. Figures in parentheses indicate the months when capital increase took place.

Source: T. Nakajima, *Gendai nihon sangyo hattatsushi 18 shokuhin* (Kojunsha Shuppankyoku, 1967), p. 311.

demand (see table 3.5). During this period, Yukijirushi, Meiji, and Morinaga became the three prime milk-product producers, and by 1961 70 per cent of Japan's total domestic trade in milk products was under their control. Table 3.6 provides some indication of the sales and profits made by these

Table 3.5. Changes in Production of Modified Powdered Milk Products (unit: tons)^a

Year	Modified powdered milk ^b	Total production of powdered milk	Consumption
1943 ^c	—	6,087	6,087
1945	—	2,762	2,699
1950	2,058	12,332	11,828
1951	4,990	12,180	11,937
1952	5,144	8,678	8,587
1953	6,908	10,366	10,087
1964	10,755	14,963	14,547
1955 ^d	10,545	12,711	12,598
1956	11,691	16,809	16,621
1957	13,752	21,425	21,242
1958	13,795	19,894	19,290
1959	18,529	25,036	24,346
1960	21,741	29,207	28,851
1961	26,098	34,566	35,329
1962	33,783	46,226	48,660
1963	37,558	52,148	52,859
1964	36,691	60,512	60,689
1965	48,788	75,642	76,282
1966	49,569	77,899	77,266
1967	52,192	81,554	85,544
1968	52,985	80,318	80,450
1969	59,292	90,020	89,282
1970	61,194	96,902	94,898
1971	65,106	101,702	96,171
1972	86,133	128,158	125,328
1973	92,801	128,059	129,663
1974	81,406	112,668	114,560
1975	69,991	92,664	92,213
1976	65,155	91,856	94,664
1977	60,754	87,881	88,330
1978	62,000	92,500	91,396

a. Production figures are taken from Ministry of Agriculture, Forestry and Fishery statistics, except for figures for 1947–1949, which are based on surveys by Nihon Seirakugyo Kumiai and Shokuryohin Haikyuu Kodan.

b. Production figures of powdered infant milk before 1950 are included in total powdered milk production figures.

c. The figure for 1943 represents the peak in pre-war production.

d. The drop in production in 1955 is considered to reflect the recall of MF milk.

Source: Shadan Hojin Nihon Nyuuseihin Kyokai, *Nihon nyuugyo nenkan* (1980), p. 140.

Table 3.6. Changes in Sales and Earnings of Top Three Milk Product Manufacturers, 1958–1962 (unit: 1 million yen)

Year	Yukijirushi Nyugyo	Meiji Nyugyo	Morinaga Nyugyo	Combined total
<i>Sales</i>				
1958	19,889	16,111	14,405	50,405
1959	27,305	19,620	17,638	64,563
1960	31,335	23,064	22,783	77,182
1961	39,562	30,835	31,120	101,517
1962	49,242	40,737	39,318	129,297
<i>Earnings</i>				
1958	184	438	251	873
1959	306	475	251	1,199
1960	509	382	757	1,648
1961	611	475	585	1,671
1962	798	544	540	1,882
<i>Sales/earnings ratio (%)</i>				
1958	0.92	2.72	1.74	1.73
1959	1.12	2.42	2.37	1.86
1960	1.59	1.66	3.32	2.14
1961	1.54	1.54	1.88	1.65
1962	1.62	1.34	1.37	1.46

Source: T. Nakajima, *Gendai nihon sangyo hattatsushi 18 shokuhin* (Kojunsha Shuppankyoku, 1967), p. 317.

companies. During this period, the Morinaga Company rose to first place in the baby-product field, and at the time of the arsenic milk incident it held 60 per cent of the total market in milk products for infants nationwide, and 65 per cent in the Kansai area.

At that time these various companies were involved in management rationalization procedures in order to increase their profits, and in March 1955 2,000 schoolchildren suffered food poisoning from powdered skim milk produced by the Yukijirushi Company. The root cause of the poisonings was never made clear. The companies agreed among themselves to carry out independent researches into the cause and to institute independent programmes for product quality control and safety. It can be said that this problem represents the tip of the iceberg in relation to the difficulties attendant on management rationalization.

Profit-oriented production management coupled with mass-production techniques always results in deterioration of the product and reduces the safety levels. Mass production and transportation systems cause problems with increasing acid levels and losses in product freshness. Because of these factors, the Tokushima plant of the Morinaga Company added sodium phos-

phate to the milk products as a stabilization agent. Instead of the soda authorized by the Japan Pharmacy Bureau for purity, the company used an industrial grade material which was one-third the regular cost of the pharmaceutical grade additive. From April to July 1955, 380 kilograms of this industrial grade sodium phosphate, which also happened to contain arsenic, were added to milk products without being examined for purity or fitness for human consumption.

III. The Arsenic Milk Poisoning Incident and the Morinaga Company's Response

1. From the Development of a Strange New Disease to the Discovery of the Arsenic Milk

From June 1955, certain infants in western Japan came down with a strange sickness that was characterized by diarrhoea or constipation, vomiting, a swollen abdomen, and a darkening of skin colour. There was no clue as to the cause of this commonly seen problem. On 23 July, the first infant patient of the Morinaga MF Milk poisonings was seen at Okayama University Medical School Hospital, and then one infant after another was brought into the hospital. On 5 August it was made clear that what the infants had in common was the intake of the MF milk formula, and as more and more babies were brought in for treatment it came to be known that they regularly drank the same Morinaga MF Milk. On 12 August, the hospital announced that the problem was caused by the MF milk, but no mention was made of the causal agent in the milk that was at the root of the problem.

More babies came to be hospitalized in the Okayama Red Cross Hospital, and on 13 August the chief of paediatrics became aware that the strange sickness was related to products from the Tokushima plant of the Morinaga Milk Company. On 19 August, Professor Eiji Hamamoto of the Paediatric Department of Okayama University advised the production chief at the Tokushima plant that several points in the production process should be examined for imperfections. After that, the company began using a purer form of sodium phosphate which was purchased through regulated pharmaceutical channels.

On 22 August, the Medical Department of Okayama University requested that Professor Hamamoto make a radio announcement regarding the arsenic-laced MF milk, but instead of making the issue clear through a radio message, Professor Hamamoto went to see the patients in the Red Cross Hospital. When the staff asked him what treatment should be given to the severe cases, at long last he ordered them to use the BAL antidote for arsenic poisoning. The next day, the Medical Department of the university detected arsenic in MF milk, and then Professor Hamamoto reported the case to the

Public Health Department of Okayama Prefecture. He did this 18 days after MF milk was found to be the causative agent.

2. Organization of the Arsenic Milk Poisoning Victims and Post-poisoning Developments

On 24 August, the Public Health Department of Okayama Prefecture made a public announcement that poison had been found in MF milk. The government's Ministry of Public Welfare issued an order for all MF milk to be withdrawn from the market and the Tokushima plant of the Morinaga Company to be closed. Mothers who had been using the arsenic-laden milk learned of the disaster over the radio, and from television and newspaper coverage. After that there was a rush of families to the medical clinics, fearing for the life and health of their new-born babies.

The next day the Morinaga Milk Company placed an "Apology and Petition" in every newspaper and promised to promote the safety of their products through a campaign for "Beta Milk." However, ML milk, produced at the Matsumoto plant, and MC milk, produced at the Hiratsuka plant, was also found to be tainted with arsenic.

At that time the parents of the infant victims being treated at the Red Cross Hospital, Okayama University Hospital, and Kurashiki Central Hospital came together to organize the Victim Patient Families Association. On 30 September, the Okayama association made the following three demands in relation to the incident, and declared that they would continue to organize until there was a meaningful conclusion to the attack on the lives of their children. The demands were: (a) that the company pay all expenses in relation to essential treatment, hospitalization, and hospital visits; (b) that compensation be provided by the company in relation to the poisoning after-effects; and (c) that compensation be set at 2,500,000 yen (\$6,942) for each death caused, 700,000 yen (\$1,943) for relatively seriously affected cases, and 300,000 yen (\$833) for lesser degrees of poison-related degenerative involvement.

The company did not respond to these demands from the victims' families, and so the struggle was organized on a nationwide basis to put pressure on the company. On 19 September, victims' representatives from nine prefectures held a meeting in Okayama City, and decided to form Zenkyo (Morinaga Milk Victims' Association) and to press for action in relation to their three demands. After that representatives from four more prefectures joined Zenkyo, and thus all the victims were united.

3. The Morinaga Milk Company and the Five-member Committee

On 5 October, at the first central negotiation meeting, Zenkyo requested that Morinaga pay compensation. Because public opinion was solidly behind the victims, Morinaga had no choice but to meet the demands. However, the number of victims was much larger than had been expected and the company

appealed to the government to form an advisory committee. On 21 October, the Ministry of Public Welfare created, without consulting Zenkyo, a five-member committee, consisting of Teizo Utsumi (Chief Publisher of Jijishimpo Newspapers), Takeo Koyama (Director of the Tokyo Saiseikai Central Hospital), Shigeko Tanabe (Senshu University Lecturer—Human Rights Committee), Ryo Masaki (lawyer), and Tasuku Yamazaki (lawyer).

The Five-member Committee was to be a third party, and therefore neutral, but committee members' expenses were paid by the Yukijirushi, Meiji, and Morinaga companies; this came under critical fire, since it appeared that the committee had been constituted in an attempt to lower the amount of compensation that the company would have to pay for the poisonings.

A subcommittee, which was to determine the standards upon which patients were to be evaluated, was formed under the Five-member Committee, with six members including Professor Hamamoto and the chairman, Nishizawa, who stated that the after-effects of the poisonings were of little consequence. The members of the subcommittee were paediatric specialists who were promoting bottle-milk, as desired by the milk industry.

At the time the Five-member Committee was formed, Morinaga indicated that it would abide by its decisions, but at the same time the company began making efforts to undermine and ultimately disband Zenkyo by saying that it was Morinaga who had fallen victim to the poisoning incident. On 5 December, the Five-member Committee announced the results of their deliberations, which were far from meeting the demands of the victims' families. These deliberations resulted in the following proposals: (1) that Morinaga be required to pay 250,000 yen (\$694) for each death caused by the poisonings; (2) that 10,000 yen (\$27.77) be provided for each patient; (3) that 2,000 yen (\$5.55) in addition be provided for each hospitalized patient; (4) that it should be agreed that the poisoning has no lasting after-effects.

This simply indicates that the committee ignored completely the realities of the victims' families in an attempt to gloss over the irresponsibility of the Morinaga Company. Zenkyo was very surprised and disappointed at these proposals and as a result decided to negotiate directly with the company. Zenkyo's demands were: (1) that the company compensate families of dead poisoning victims to the tune of 500,000 yen (\$1,388); (2) that the company provide regular medical examinations for the living victims of the poisonings; (3) that a research institute be established to further progress in overcoming the lasting effects of the poisonings. On 26 December, Morinaga indicated that none of these proposals was acceptable.

Zenkyo protested to the Ministry of Public Welfare and organized demonstrations in concert with the prefectural associations, calling for a nationwide boycott of Morinaga products and staging sitdown demonstrations and strikes at Morinaga branch offices. However, public opinion was not as fully supportive of the victims as once was the case, and at the same time the funds to pay for hospitalization were running out. Also, at about the same time, the mothers supporting Zenkyo had to abandon their protest activities because of sheer exhaustion.

4. Formation of the "Protection Association"

At the beginning of April 1956, the Morinaga Milk Company came up with a compromise proposal which was only slightly better than that arrived at through the deliberations of the Five-member Committee. These proposals were offered only on condition that Zenkyo be disbanded, and under these new circumstances the chairman of Zenkyo accepted Morinaga's proposals. The prefectural associations of Zenkyo also agreed to accept Morinaga's proposals and at the end of the month the various associations were dissolved. Zenkyo gained nothing for its efforts, but some people belonging to the Okayama association of Zenkyo decided to file a suit in the civil courts.

In February 1957, the Morinaga Milk Company established the Morinaga Service Foundation with the express purpose of improving infant nutrition and the quality of all milk products. This foundation was completely different in nature from that proposed by Zenkyo for research into the after-effects of the arsenic-laced baby-milk poisonings. The formation of the service foundation was intended to counter criticism from professionals and promoters of mother's milk through the use of medical and bureaucratic authority and to silence certain vociferous opponents of the company. The Morinaga Service Foundation also surveyed related consumer information, distributed certain limited research funds, and organized groups to promote artificial nutrition for babies. The foundation was also bent on developing, among medical doctors, clinics, and hospitals, friendly consumer attitudes in relation to milk products, in the hope that this would contribute to the increased use of bottle-milk.

After Zenkyo had been disbanded, an organization was established in Okayama Prefecture for the express purpose of providing protection for the Morinaga arsenic milk-poisoned children. In conjunction with other related organizations, it pursued activities to ensure that children's rights would be protected. In July 1957, this new organization entered into negotiations with Morinaga in which they demanded and received a memorandum from the company that acknowledged the company's responsibility in paying for periodic medical examinations for those infants who had been poisoned. Then, 19 of the poisoning victims received medical confirmation that they were indeed suffering from the after-effects of the arsenic-laced milk. The Organization to Protect the Poisoned Children of Okayama submitted a report on the situation at the sixth Japan Mothers' Congress, and received wide public attention.

In October 1963, the Tokushima District Court handed down a not guilty verdict in the case against the Morinaga Milk Company, and this was felt to be a great betrayal of the parents of the poisoning victims. Angered by the unfair court decision, this same group decided to spread their movement throughout the country in order to continue the struggle for the poisoning victims. Then in March 1966 the Takamatsu High Court reversed the Tokushima District Court decision and sent the case back to the district court for retrial. In the same year, the Okayama Association against Medicine

Poisonings (a private organization) proved through careful surveys that the MF milk poisonings had serious after-effects. This higher court decision and the advent of a supporting medical team provided a glimmer of hope for the victim families.

IV. Visit after 14 Years—The Maruyama Report

The arsenic milk-poisoning appeal made by the parents became an issue for some of the more conscientious medical doctors, but the case was past history as far as the general public was concerned. However, the parents of the association to protect children from arsenic-poisoned milk were encouraged by their children who were suffering from the after-effects, and were therefore able to continue their struggle to find light in the darkness. The parents said: "It was the Morinaga Milk Company who mixed poison with the milk, but it was we parents who gave the poisoned milk to the children. Therefore it is our responsibility to take care of these poisoned children. We must live and fight a ten-year battle."¹

In 1956, when the company announced that there were no more after-effects of the poisonings, many of the children were still the victims of very definite after-effects. It was also becoming more and more evident that the after-effects multiplied as they grew older. However, some of the children, who had shown intractable retardation, eyesight problems, central nervous system involvement, skin diseases, irregular physical development, mental disorders, and difficulties in studying, were diagnosed as victims not of the poisoning but of congenital disorders. Further, some of the parents, in whose children no clear after-effects were seen, were in a constant state of worry that problems might rear their ugly heads any day.

Fourteen years had passed and yet no survey had been made of the problem. At this point the children were 14 to 15 years of age. There were those who thought a survey should be made before the children left compulsory education. These were persons involved in special education programmes for the handicapped and in nursing the said people as well as doctors in the same fields. This group organized a survey of the Morinaga arsenic-poisoning victims under the guidance of Professor Maruyama of the Medical Department of Osaka University. They interviewed many of the parents of the victims in order to discover what the after-effects were, how the children were getting along at 14 years of age, and what the parents were thinking and feeling. The survey was completed and made into mimeographed copies containing 93 pages. The title of the work was "Visit after 14 Years" and contained interviews with 68 people, 80 per cent of whom were found to have definite after-effects and abnormalities.

With Associate Professor Hideyasu Aoyama of Okayama University Medical Department, Professor Maruyama held a press conference on 18 October 1969 to publicize "Visit after 14 Years."² It was a time when there was increasing public interest in the issue. The Victims' Protest Association

continued its struggle with some hope of light at the end of the tunnel. On 30 October, the same survey was reported to the Japan Academy of Public Hygiene. It was expected that there would be interference in the report by other scholars who did not want the old style of the academy assembly disturbed by the likes of Maruyama. But many of the younger researchers were determined that the report should be made and did everything in their power to allow Maruyama to complete his presentation. These efforts enabled the parents of the victims to speak at the meeting. Therefore, in autumn 1969, after a period of 14 years, the matter of the arsenic poisoning was once again discussed in the Japan Academy of Public Hygiene.³

Many of the victims' parents were encouraged by the Maruyama Report, and once again a Morinaga Arsenic Milk Poisoning Protection Association was formed. The new association met for its first national convention on 30 November, and decided to create an amalgamated association in order to further study the after-effects of the poisonings, methods for bringing about a complete cure, and steps to be taken in regard to the limits of the company's responsibility for the problem. In December, the association issued its first publication named *Hikari* (Light) and also set up its headquarters in Osaka. In 1970, branches of the association were set up in Nara, Hiroshima, Kagawa, Kyoto, Hyogo, and Osaka in order to expand the influence of the organization and to provide suitable measures in relation to local problems. The organization expanded but the members took great care lest the mistakes of the past association be repeated. At the new protection association national meeting, the following four goals were decided upon with the shared understanding that the past organization had been divided over demands for compensation, and that it had been won over by the company:

1. To demand a complete cure as well as full protection for the victims.
2. To make further surveys of the after-effects of poisoning in co-operation with humanitarian medical doctors.
3. To discern and define the extent of responsibility for the problem that should be shouldered by the Morinaga Company.
4. To unite in solidarity in the protection association in order that demands be met.

In comparison to the situation surrounding the 1955 protection association, the new association had a much better chance of success, for there were growing public demands for control of pollution and the anti-pollution movements were in the making. The mass media were also calling for pollution elimination. Again, at this time, in the latter part of the 1960s, students were struggling against the arbitrary authority held by professors and scholars.

The Morinaga Company responded to this new situation by saying that it could not believe that there were so many people who were suffering from the after-effects of the milk poisoning, and promising that it was not thinking of stopping its compensation to patients. The company further pledged that it would pay for hospital treatment. Even though it showed surprise at the findings of the association and the Maruyama Report, the Morinaga Company had ignored the demands made by the parents of the victims for the past

14 years. Because of the irresponsible attitude taken by Morinaga and the Ministry of Public Welfare, conscientious scholars and young researchers began to make patient examinations in a co-operative effort with the parents of the victims and the protection association in January 1970. The researchers found some very definite after-effects of the poisonings, tried to discover effective treatments for the problem, and provided immunological analyses relative to victim medical prognosis. Osaka and Okayama universities became the centres for these studies, and Professor Maruyama organized a committee to survey the after-effects of the poisonings in co-operation with the Japan Public Hygiene Academy, the Japan Paediatrics Academy, and the Japan Hygiene Academy.

The parents making up the protection association gave their support to these efforts in co-operation with medical doctors and citizens' groups. In order to increase inter-group support the parents communicated with the PCB poisoning victims and Minamata disease patients in various districts,⁴ and visited labour unions, co-operative groups, consumer groups, small research groups, and universities in order to make their appeal in regard to the Morinaga poisoned-milk problem. One year after the Maruyama Report, the protection association had grown from a few family members to 800 persons. On 6 December 1970, the ninth national board meeting of the protection association decided to respond to Morinaga's proposal to carry on two negotiations at the same time—negotiations at the headquarters of the protection association and also with local associations. For negotiations at the headquarters, the protection association would select the date. On 12 December, representatives of the Morinaga Milk Company met with those of the protection association in Okayama, and thereafter, once a month until 11 July 1971, they met eight times for negotiations. The Morinaga Company tried purposely to delay the negotiations, and at the eighth meeting the company announced that no further discussions would take place. Thus negotiations were suspended until the conclusions of the Okayama Prefectural Powdered Milk Arsenic Poisoning Survey Committee had been submitted. Once again Morinaga sought for solutions through the intercession of a third party from the government administration.

V. Expansion of the Movement to Save the Victims

Bowing to pressure from the protection association and also from public opinion, the Ministry of Public Welfare agreed to make examinations of the poisoning victims. However, playing on an old theme, the government commissioned a third-party group composed of so-called scholars and authorities, and this group came up with the conclusions that no after-effects existed. The Ministry of Public Welfare decided to examine victims in Okayama City, where the headquarters of the protection association were situated, and commissioned Okayama Prefecture to carry out the study. The Okayama Prefectural Public Health Department, the organ responsible for the ex-

aminations, in October established another committee for Okayama Prefecture arsenic-poisoning victims. However, this committee was composed of doctors who were critical of the survey made by the protection association and of the doctors who were co-operating with it. Citing the need to respect the privacy of the children involved, the contents and results of the examinations were not made known to the protection association or to the doctors who had made their own private examinations. The protection association was afraid that the same conclusions would be reached as in 1955, when there was a closed-door policy that was not responsive to the real needs and facts of the case. It therefore protested to the Ministry of Public Welfare and to Okayama Prefecture. But the administration forcefully carried out its closed-door policy. The report was made to Okayama Prefecture in December 1972, and the conclusion was that there was no special need for the patients to worry. This was the type of conclusion that the protection association feared most.⁵ It was clear from the exchanges in the National Diet sessions in relation to the findings of the report that Morinaga had paid 10 million yen (about \$34,000) and the Ministry of Public Welfare 1.3 million yen (about \$4,320) to have the report completed.

The protection association fully understood the aim behind the "official examinations," and roundly criticized the Morinaga Company for its intention to use the report as a means of reducing its liability. Further, public opinion was at this time in full support of the protection association. Many citizens who were fully aware of the seriousness of the pollution problems at that time started a boycott movement against Morinaga products in the hope of forcing the company into accepting proper responsibility for the poisonings. The boycott of Morinaga products was accepted by the Fukushima Cooperative Association as one of its resolutions, and from autumn 1970 this boycott began to spread to all parts of the nation. The Morinaga Company had not expected this, and, five months after withdrawing from the negotiations, company headquarters personnel came again to the table in order to try to avert the bad publicity they were sustaining. The company kept repeating publicly that it would accept responsibility for the problem and pay compensation to the victims of the poisoning,⁶ but at the negotiation table it continued to evade responsibility, proposing to move to a "permanent solution" to the problem. "Permanent solution" was a kind of quibble, and Morinaga did not admit that it had caused the arsenic poisoning. Therefore, the protection association did not accept the company's proposals.

Because of Morinaga's insincere response to the initiatives of the protection association, the movement decided to strengthen its bargaining position *vis-à-vis* the company. In August of 1972 at the fourth national assembly of the association, it was decided that permanent measures should be specified for the victims of the Morinaga arsenic milk poisoning,⁷ and thereby guidelines were created for negotiations that would specifically designate the responsibility of both the company and the government for the problem, as well as create conditions for the realization of the demands of the association. This involved the payment of compensation for those who had died as well as

those who were still suffering the after-effects of the poisoning. The demands for compensation included remuneration for all victims who were drinkers of Morinaga Milk in 1955, including even those patients who were not registered as suffering from the after-effects. This demand was qualitatively different from other demands made in regard to pollution-related diseases, because in the other cases the victims were recognized as patients for compensation only on the basis of specific symptoms caused by specific pollutants ingested in specific amounts. This was epoch-making within the context of victim compensation negotiations related to environmental destruction.

The subsequent negotiations between the protection association and the Morinaga Company did not develop further because of the company's delaying tactics. In December 1972, at the fifteenth negotiation meeting, the Morinaga Company went back on their promise and the meeting ended in failure. As a result of this renegeing on the part of the company, the meeting was converted into the protection association's second national meeting on the spot and a resolution was passed to further boycott all Morinaga products until the company met all its obligations and to take the damage claims to the civil courts. The boycott movement against Morinaga products was already nationwide, and with these resolutions it spread like wildfire all over Japan. Morinaga stocks had dropped in value ever since the "Visit after 14 Years" report, and the Meiji and Yukijirushi companies had taken up the slack in Morinaga business, so that Morinaga now found itself in third place among the big three milk-product companies. Before the boycott movement had got under way, the Morinaga Company held 45 per cent of the market for powdered baby milk, but after the boycott started that share went down to 17-18 per cent, because Morinaga's milk was seen to typify unsafe food products, just as it had ten years before. In this situation the company's management orientations continued to worsen.⁸

In April 1973, members of the Kinki branch of the protection association filed a suit for damages against the Morinaga Company in the Osaka District Civil Court. In the same year a lawsuit, was begun in the Okayama District Court in August and in the Takamatsu District Court in November, in the hope that the civil cases would work to clarify Morinaga's responsibility for the poisonings.⁹ The Tokushima District Court case was reopened and in March 1973, after the Public Prosecutor had brought charges, the director and production chiefs of the Morinaga Company were sentenced to five years in jail, the longest sentences of this kind in Japan's legal history. The company faced its most difficult test ever in the civil and criminal courts.

The boycott of Morinaga products and the court cases were the two most important aspects of the protection association movement and both were long-term measures. The government was criticized for its collusion with the Morinaga Company, but the former was forced to distance itself from Morinaga when the company began to experience difficulties. In September 1973, the government finally recognized its responsibility, at least in part, and proposed a three-party negotiation arrangement between the protection association, the government administration, and the Morinaga Company. At

the fifth negotiation session on 23 December, an agreement was reached between the chairperson of the protection association, the Minister of Public Welfare, and the President of the Morinaga Company. This signed agreement contained five items. In summary, the agreement reached attributed full responsibility to the Morinaga Company for the original problem. It designated the establishment of a committee as proposed by the association, which would work out all unsolved problems. The said committee would respect all proposals of the association as well as have all its expenses paid by the Morinaga Company. The company would co-operate in the realization of a long-term reorganization plan proposed by the Ministry of Public Welfare. Finally, the three-party negotiation meetings would be continued until all problems could be completely solved.

In April 1974, the sixth negotiation meeting was held, followed by a seventh meeting for the establishment of the Hikari Foundation as an organ designed to help relieve the Morinaga milk-poisoning victims while various other specific issues in relation to the Foundation were being discussed and decided. The three-party negotiations between the protection association, the government, and the Morinaga Company continued alongside the litigation and the boycott. Then, on 28 November 1973, the Tokushima District Court also sentenced the production section chief of the Morinaga Company to three years in prison. The boycott movement continued to spread with increasing rapidity.

VI. Establishment of the Hikari Foundation

1. Work of the Hikari Foundation

In April of 1974, the Hikari Foundation was established in order to help the Morinaga poisoning victims. It took 19 years for this organization to be formed. The protection association held a national board meeting in May and decided to stop the boycott against Morinaga products, as well as withdraw their lawsuits, as agreed by the three-party negotiations. The protection association continued in its work, which was focused mainly on the strengthening of the Hikari Foundation. Except for a few scholars, the executive members of the Foundation were mostly parents who had been involved in the protection association. The membership of the two organizations was very much the same. The Hikari Foundation was headquartered in Osaka where a committee, composed of professional doctors and educators, was founded. The district offices were located so as best to provide services to the many victims of the poisoning. As of 1981, there were 17 district offices, managed by parents involved in the protection association. There was also a great deal of co-operation from medical doctors and from people working in special education.

By the end of March 1983, there were 13,396 victims of the Morinaga milk poisonings, and 6,389 of these were in communication with the Hikari

Table 3.7a. Number of Recipients of Basic Services (a) and Respective Expenditures (b) (unit for b: 1,000 yen)

	1974	1975	1976	1977	1978	1979	1980	1981
Diagnostic examination	a	569	514	505	606	584	579	725
	b	13,136	16,863	9,727	16,877	7,575	12,057	14,097
Medical treatment	a	780	754	698	689	689	636	665
	b	32,927	29,930	23,684	32,714	34,613	37,277	40,538
Basic allowance 1	a	87	119	134	151	156	172	181
	b	47,850	64,258	75,100	84,220	89,600	100,210	100,500
Basic allowance 2	a	55	99	114	135	153	171	195
	b	27,225	43,751	58,170	66,690	76,995	89,365	98,375
Basic allowance 3	a	64	175	210	187	204	194	217
	b	14,080	38,863	41,041	41,520	46,320	44,920	44,740
Hospitalization allowance	a	47	61	60	60	69	79	76
	b	13,340	11,350	12,752	13,340	14,840	16,600	17,040
Special health control allowance	a		76	114	136	126	116	150
	b		1,196	3,820	6,420	6,816	7,608	9,920
Employment allowance	a		16	38	41	39	25	20
	b		1,100	2,752	2,990	3,040	1,950	1,980
Training allowance	a		3	7	5	2	18	20
	b		52	318	112	42	2,372	2,666
Self-aid allowance	a						51	54
	b					6,300	11,226	9,801
At-home training	Centres	5	5	6	7	13	16	17
	a	5	12	18	23	60	147	185
Trainers						78	142	129
Visits						2,324	4,782	5,076
	b		3,108	4,901	6,378	9,477	24,851	33,125

Consultative service	a	514	844	1,156	1,225	1,124	1,342	1,430	1,722
	Meetings					4,616	6,286	6,914	7,808
Total recipients		1,633	1,720	1,767	1,851	1,769	1,809	18,37	2,385
New recipients		1,633	552	350	309	326	243	247	

Table 3.7b. Budget (B) and Actual Expenditure (E) (unit: 1,000 yen)

Year	1974	1975	1976	1977	1978	1979	1980	1981
B	348,955	489,288	553,229	643,630	702,093	787,707	878,854	927,622
E	348,955	480,268	549,009	627,750	684,490	765,221	799,756	829,895

Source: Zaidan Hojin Hikari Kyokai, *Kokuyuu kyuusai*, no. 17 (October 1982), 23.

Foundation.¹⁰ The work of the Foundation centred mostly on the development of the victims' independence as well as on creating social conditions for that development. The Foundation is involved in many areas, such as the distribution of available funds and helping with health care, education, counselling, and occupational therapy, and providing for the victims a place and the ability to meet each other.¹¹ The relatively severely poisoned victims receive basic compensation and medical fees. For those who need funds for daily needs, a certain amount of financial aid is provided. In March 1981, 593 persons were receiving basic compensation support funds, and of these 181 were badly handicapped (table 3.7). The Hikari Foundation provides financial aid to "Taiyo no Kai," which was organized by the victims, and to the protection association for activity funds.

The annual budget of the Hikari Foundation was 348.9 million yen (about \$1,186,000) in 1974 and 927.6 million yen (about \$4,174,000) in 1981. These funds are covered from amounts provided by the Morinaga Milk Products Company. As the Foundation's activities increased, so also did the need for funds.

2. Remaining Issues

Through the activities of the Hikari Foundation it would appear that the needs of the poisoning victims are being met. However, there are still a number of unresolved issues. Table 3.8 indicates the number of victims recognized by the Ministry for Health and Welfare and those who were later recognized by the Hikari Foundation. The question still remains as to what should be done with those persons who would rather not be labelled as arsenic milk-poisoning victims.¹² Another problem has to do with compensation for people who died as a result of the poisoning, as well as compensation in relation to past damages. A third unresolved issue concerns compensation to the adult victims of the poisoning—that is, those persons who were adults at the time they ingested the powdered milk. Some of the persons who have been involved in working with the victims of the poisoning are criticizing the Hikari Foundation for not extending its work to include the resolution of these outstanding issues. In this regard, the coverage of the government and the Morinaga Company is all too inadequate.¹³

By way of conclusion, the issues generated by the Morinaga arsenic-poisoned milk incident can be summarized as follows. First, there were large numbers of victims discovered over a very wide area. It should be noted that the problem raised its ugly head just as Japan was entering its high-economic-growth period. In this context, young women were hired as cheap labour and as such met the requirements for an expanding labour force. In order to participate in these production activities, young women and working mothers would use powdered milk.

Secondly, in the context of these economic conditions, people were caught up in a headlong and unquestioning race towards "modernization," because it was assumed that modernization could solve all problems. The use

Table 3.8. Changes in the Number of Service Recipients^a

Year	Group 1 ^b	Group 2 ^c	Total
1974	12,401	0	12,401
1975	12,401	89	12,490
1976	12,401	703	13,104
1977	12,401	850	13,251
1978	12,373	930	13,303
1979	12,369	987	13,356
1980	12,368	1,010	13,378
1981	12,368	1,021	13,389
1982	12,368	1,029	13,397
1983	12,368	1,028	13,396

a. For details, see note 12.

b. Those recognized by the Ministry of Health and Welfare as MF milk victims.

c. Those recognized by the Hikari Foundation.

Source: Zaidan Hojin Hikari Kyokai, *Kokuyuu kyuusai*, no. 22 (January 1984): 9.

of powdered baby milk was seen as a step in the direction of modernization and therefore the demand for this product was very great. Thus the mentality that placed modernization above all other values was in part a cause of the tragedy seen in the arsenic milk poisonings. Immediately after the Second World War, the Japanese suffered greatly from shortages of food and consumer goods, and thus there was a very strong desire that the factories be reopened and that new ones be built utilizing new technologies; these were seen as a means of fulfilling the desire for consumer goods and the materialistic culture of the West. From this came the energy that was needed for Japan to "catch up" with the West, whose life-style they envied. The powdered milk situation provides a good example of this. After the Second World War, knowledge of nutrition was introduced from the United States and statistics became the basis for judging food nutrition in the modernizing age. This produced an excessive degree of trust in nutritional analyses, especially in relation to processed foods, and as a result one misguided social phenomenon was to be discerned in the absolutizing of the so-called "science" of nutritional analysis. People were charmed by the powdered milk that had been produced by a well-known company and were duped by the pretty cans upon which nutritional analyses were recorded. Every company competing in this field advertised that their product was better nutritionally than any other; they also claimed that it provided better nutrition than mother's milk and that, because of this, babies fed on it would grow and mature better. And so, instead of making efforts to breast-feed their own children, young mothers were led to purchase expensive powdered milk.

A third reason why the poisoning produced so many victims is related to the problems created by health professionals such as paediatricians, gynaecologists, and local public health nurses. The excessive trust in powdered baby

milk and in nutritional analyses, along with the powerful product advertising, greatly influenced the vast majority of health professionals. The responsibility for the poisoning incident and the tremendous increase in the number of victims rests not only with the doctors and nurses who assumed the same stance as the profit-seeking company, but also with local medical practitioners who uncritically accepted powdered milk as being of significant value. These medical professionals told young mothers that the powdered milk was very nutritious, but failed to indicate that it should only be used as a last resort under circumstances where natural breast-milk is not available or cannot, for some special reason, be supplied. In this regard, is it not best to build a society in which it is unnecessary for young mothers to work while they are feeding their infants?

In the fourth place, there still exists the issue of how to deal with the problems created by the arsenic milk poisoning incident. The Hikari Foundation method was different from the avenues of approach taken in other environmental poisoning cases. The specific measures provided were determined by the victims and their associated supporters, and these were the best measures possible at the time. However, in practice, this orientation was not able to provide help to all the victims. There are two aspects to this problem that should be considered in the future. The first relates to the fact that the Hikari Foundation is totally dependent on the Morinaga Milk Company for financial backing. The day will come when the company and its management practices will lead to another crisis, and funds for the victims of the poisoning will be cut off. Even though the Hikari Foundation has been established with a sufficient degree of independence so that it is not excessively subjected to the whims of company management, we are still greatly concerned by the fact that the relief plan for the victims is based only on the viability of a private company, which seeks only profit, in the economic market-place.

In relation to this, the government, which also carries a very heavy burden of responsibility for the problem, did not make clear its administrative responsibility for the incident and did not include the poisoning in the protection provided by the social security and medical care systems. The government should recognize the deficiencies in the social security system in this regard, and should seek to redress these problems, especially in respect of the miserly security provisions allowed to the handicapped. The government did not accept any responsibility for this problem, though it promised some degree of co-operation with the Hikari Foundation. But in this respect also, it has been no help at all. The example of foundations such as the Hikari organization was adopted in other environmental destruction cases, such as that of the thalidomide poisonings, but continued government support for such foundations is important; we must therefore ensure that government help is forthcoming over the long term.

The fifth issue is related to the fact that the Hikari Foundation continues under the leadership of the Morinaga Milk Poisoning Protection Association, and as such is a third-party organization. This, then, is the public forum for the victims and the members of the protection association. In other words, the Hikari Foundation is in fact the locus of confrontation between the vic-

tims of the poisoning and the Morinaga Company. The continued relief of the poisoning victims is totally dependent on the members of the protection association, who are fully supportive of the Hikari organization. But the active members of the protection association are ageing and they are looking for younger volunteers who are capable of understanding the situation. It is important to rejuvenate the association, which is being run chiefly by victims who were relatively lightly poisoned.

Notes

1. *Morinaga Arsenic Milk Struggle—20 Years* (Ijiyakugyo Shimposha, 1977), p. 28.
2. *Asahi shimbun*, 19 December 1969.
3. "Indict the Academy," Young Public Hygiene Workers Meeting, 1970.
4. The "Kanemi" incident was a food-pollution problem that was discovered in October 1968. The cause of the widespread poisoning was the leakage of polychlorinated biphenyls (PCBs), used as a heat-transfer medium for edible oil processing, into the oils being manufactured. The victims numbered 100,000 and this case is still being tried in the courts, especially in relation to the problem of compensation.
5. The Group to Indict the Morinaga Company, ed., "Arsenic Milk 3" Survey Committee meeting notes from the Okayama Prefecture Baby Milk Arsenic Poisonings (1974), supplementary material, p. 7. This paper explains the manner in which the official report to Okayama Prefecture tried to undermine the victims and make their problems seem of little consequence.
6. Words of Isamu Ono, President, *Nihon keizai shimbun*, 13 December 1971.
7. Morinaga Arsenic Milk Poisoning Protection Association, *Hikari*, no. 39 (20 October 1972).
8. *Nihon keizai shimbun*, 11 April 1972, and *Hiroshima shimbun*, 24 August 1972.
9. Morinaga Arsenic Milk Poisoning Victims' Lawyers' Group, ed., *Morinaga Arsenic Milk Poisoning Incident and the Court Struggles*.
10. Zaidan Hojin Hikari Kyokai, *Kankyo kyusai*, no. 22 (January 1984):9.
11. Refer to *Kankyo kyusai*, the publication of the activities of the Hikari Foundation.
12. These figures were registered with the local government offices and with the Ministry of Public Welfare in 1955. Some of the victims who did not register became the central issue of negotiations between the victim families and the Morinaga Company. The decrease in the number of victims is an indication that some of them died. After the establishment of the Hikari Foundation, the victims recognized by the Foundation were immediately recognized by the Ministry of Public Welfare. There were some people who had been poisoned by MF milk which was not withdrawn from the market until later or who did not realize that they were victims; they were refused recognition simply because there was no authentic proof that they used to drink MF milk.
13. *Asahi shimbun*, 7 May 1981 (evening edition).

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