

Hyôko: winter habitat of wild swans at Suibara

ROSE LESSER

Four hours on the northward-bound express train take us from Tōkyō to Niigata City. A drive through a maze of entangled, eye-offending streets follows, to Suibara, 16 km from the Sea of Japan, an agricultural-industrial town of 20,000. Hyôko, a tiny water reservoir, lies totally exposed in the midst of paddy-fields which it serves, alongside an ugly, noisy highway. A tight row of low wooden houses a few yards from the water along its west bank is a poor screen against this busy road with cars, heavy trucks, and motorcycles coming and going all day long.

The impact therefore on the visitor is enormous, when he finds himself confronted by many hundreds of graceful big white swans, undisturbed right before his eyes, resting peacefully on the water. And while his eyes feast on the unexpected sight, the question arises: how ever was this possible?

Tradition and history

Swans have been coming to Japan ever since history was recorded; the literature abounds with names for them, most likely derived from their unique voice. Niigata prefecture has a particularly old swan tradition, as revealed in a delightful little story from the oldest Japanese Chronicle, the *Kojiki*.

Homuchiwake no Miko, one of the specially favoured sons of Emperor Suinin Tenno (B.C. 27–A.D. 78) did not talk. He was born under strange circumstances. In a palace fire, his mother in the last stage of her pregnancy was burned to death. The child in her womb survived and was born after her death. Since then he had grown into a man with a beard already reaching deep down to his sash. Yet he had never uttered a single word and his father was greatly worried.

One day it happened that a big bird called 'Kugui' (swan) flew over the palace in Nara where the Prince lived, uttering its strange cries. The Prince who had heard it, watched it with amazement and exclaimed loudly: 'Wow! What is that?' Hearing his words, the Emperor was overjoyed. 'For sure, the Prince was pleased to see that bird. Go right away and catch it!' he instructed his vassal, Otaka of Yamabe.

Otaka accepted this order humbly, though he was wondering how he could ever manage to catch that strange big white bird flying so high in the sky—who knew where? Nevertheless, he started at once from the palace in Kinai and ran on and on, over mountains and valleys and through many a plain towards the northwest and to the farthest end of the Hokuriku path at the Sea of Japan, on the Wanaminozu in Echigo (now Niigata). And here, at last, Otaka succeeded in catching the Kugui with a net. Gladly he hurried back with the bird and handed it to his pleased Emperor.

Since the Kammu Age (starting A.D. 797), besides the adoption of Buddhism by many which did not permit taking of life, large areas were fenced off as special hunting areas for privileged persons. These were called 'Kinya' or 'Shimeno', 'Forbidden Fields' and 'Marked Fields' respectively. Thus Kinya and Shimeno served well to increase wildfowl, as did later the many reservations, viz. the 'Otaka-Ba' or 'Otome-Ba' of the Tokugawa Lords (A.D. 1603–1867). Besides, swans were for a long time declared specially 'protected birds', the shooting of which was punishable.

For these reasons Niigata (gata = lagoon) had many places where swans and other wildfowl liked to go, rivers, lakes, swamps, ponds and paddy fields.

Before all, Sagata in Akatsuka Village was since olden times an important natural winter habitat of Whoopers. After Kominato in Aomori Prefecture, it was second in importance of Honshu until 1940. Surveys in February 1921 reported 300 swans and in January and March 1939, 900 swans. Sagata offered not only a broad water surface and a variety of water plants behind a thick screen of lovely trees, but also was a 'permanent non-shooting area'. From December until March no boats were allowed on the water, nor was fishing. Schoolchildren voluntarily refrained from skating on the ice of the lake and from skiing on the nearby hills.

But when the war came, barracks were built everywhere and trees hacked down. Soldiers found wildfowl ideal to shoot at; consequently, they decreased rapidly. Then, soon after the war, American soldiers enjoyed shooting game from their jeeps, and fishing in the lake. Moreover, the

people lacked food and gathered the roots of water-plants, causing disturbance. However, legally the area remained all the time a non-hunting area and, as times came back to normal, so gradually swans returned to Sagata.

Hyôko, with a circumference of only 1250 m and an area of about 18 ha, seems so tiny that one would think it is of no importance at all. But situated at the centre of Niigata's many fine water systems, it has an ideal position. Within a radius of 7 km lie, to the north the 300 ha Fukushima Swamps, to the west the Agano River, coming from the south and making a sharp detour towards the Sea of Japan. Again, 15 km south-west flows the Shinano, Japan's longest river; Sagata with the oldest wildfowl tradition in Niigata lies 30 km south-west. In the east 10 km away rears the mountain chain of Gozusan and Hishigadake (2,922 ft).

From the time of its creation in the Kan'ei period (beginning 1624), when it still had its original outline, that of a 'Hyôtan' (Bottle Gourd), Hyôko was used for wildfowl preservation. In winter, big flocks covered the entire surface of the lake which now has dwindled to a mere two thirds of its former size. Whoopers and the Eastern Bean Goose used to be dominant.

However, in the Meiji Age (beginning 1868) reservations like these were abandoned. The reason for this was that many people throughout the nation, which for so long had been secluded, became eager to copy 'Western Culture'. And the most embarrassing and exciting of all the things the Westerners had brought to Japan were firearms. Another strange thing imported was the eating of meat, which heretofore had been despised, for only outcasts ate meat unabashed. The 'up-to-date' hunters would aim at whatsoever things happened to be big (assuring the hit) or of rare beauty (which could be sold as a souvenir from Japan to Westerners) or at anything, bird or beast, that tasted good. And so wildlife disappeared quickly.

Then, in the 28th year of Meiji, in 1895, new hunting laws were issued: now only specified birds could be hunted; those not on the list were protected by the law. But in the Bird Atlas of the Agriculture and Forestry Ministry of that time one can see the swan included in the 'Hunted Bird List'. And thus swans diminished more and more.

Only in the Taisho Era, in 1921, were the swans again declared preserved birds. For

the next 10 years little flock of eight to ten Whoopers could be seen on Hyôko every season. In 1931 this law was revoked and, as a consequence, the beautiful swans vanished entirely.

Later, Japanese soldiers were stationed at Shibata and, bored with the dull life in the barracks, found fun in shooting at any wildfowl wherever they were. Again the big swans were the preferred target, probably also because they provided a welcome addition to the monotonous diet. And so swans as well as all other wildfowl no more went to Hyôko.

The build-up of swan preservation at Hyôko

On 28 January 1950, during a heavy snowfall, farmer Jusaburo Yoshikawa and his son Shigeo observed for the first time after the war seven or eight huge white birds circle over Hyôko and disappear in the south. About a week later, on 6 February, eight Whooper Swans *Cygnus cygnus* alighted on the water, all of them adults.

The people of the town rushed to the waterside shouting with excitement, causing the birds to leave after a stay of barely 2 hours. They departed for the south. Three days later, on 9 February, six swans returned. The moment they settled on the water Jusaburo knew only one thing: he must make Hyôko the wintering haven for these beautiful birds. He sacrificed everything, time, money, health, even his family life. The swans became the centre of the life of Yoshikawa's house.

The six swans left on 11 February, but came back two days later. On 17 February a large flock of forty new Whoopers arrived, as before adults only. They stayed until 30 March, when all left. The next morning four cygnets alighted, leaving in the evening.

The Mayor of Suibara, urged on by Jusaburo and Mr. Kazuo Nita, Director of the local Hunters' Friends Society, submitted a request for the preservation of Hyôko to Niigata Prefectural Office. By 14 April, only 60 days after the first Whoopers had set their feet on the water of Hyôko, a law prohibiting shooting there was passed, valid for 10 years.

Two swans arrived on the morning of 16 January 1951 and left in the afternoon; on 26 January, thirteen came to stay. Unluckily, gunshots on 11 February chased them all away; eight returned to the lake. On 8 March they built up to twenty-seven. All left on 30 March, except for one sick

swan. Its mate returned the next day. As the swan was very sick, Jusaburo took it home. At this, the mate left the day after.

Two adults arrived on 7 February 1952, twelve on 10 February and the swans built up to thirty-four with six families on 16 February. Twenty-five left on 25 March, while nine stayed. For the first time Jusaburo thought about the necessity to feed the swans and began feeding experiments. The nine left on 16 March.

On 16 January 1953 two adults with one cygnet arrived. Without special incident, the flock built up to the peak of the first 10 years, forty-nine swans. All left on 15 March. Jusaburo continued his feeding experiments, noting which plants were eaten (Table 1).

Again two adults arrived with one cygnet on 20 January 1954, increasing to twenty-seven on 5 February and on 14 February to thirty-three. Among these were, for the first time, two Bewick's Swans *Cygnus bewickii jankowskii* which showed themselves more inclined to trust man. One of them, whom Jusaburo called 'Cowboy', boldly stepped forward to accept food from him, one Whooper following. After that, the other swans dared to approach Jusaburo and openly received his man-mixed food. From now on he called them to feed. They left on 18 March.

Table 1. Names of plants eaten by swans

Japanese	Latin
Amamo	<i>Zostera marina</i>
Gama	<i>Typha latifolia</i>
Kawa tsurumo	<i>Ruppia rostellata</i>
Fukuro nori	<i>Glotopeltis furcata</i>
Baikamo	<i>Ranunculus aquatilis</i>
Watasuge	<i>Eriophorum gracile</i>
Ezo ukiyagara	<i>Scirpus maritimus</i>
Yoshi	<i>Phragmites communis</i>
Inusugina	<i>Equisetum palustre</i>
Tokusa	<i>Equisetum hiemale</i>
Hiyodori jogo	<i>Solanum lyratum</i>
*Makomo	<i>Zizania latifolia</i>
*Junsai	<i>Bradenia schreberi</i>
*Kawahone	<i>Nuphar japonicum</i>
*Hishi	<i>Trapa natans</i>
*Onibishi	<i>Trapa natans</i>
*Hirumo	<i>Potamogeton franchetii</i>
*Hitsujigusa	<i>Nymphaea tetragona</i>
*Hasu	<i>Nelumbo mucifera</i>
*Onibasu	<i>Euryale ferox</i>

Besides these, the swans eat also, when staying in the shallow water of a bay, tiny fish, lobworms and lobsters.

*Plants that grow in Hyôko. Hyôko and Fukushima-gata are the northernmost limit of the Onibasu or Ogre Lotus.

The open acceptance of the swans of Jusaburo's man-mixed food caused another great turn in the preservation work of Jusaburo. Thereafter 'Feeding of the Swans' became an important factor in the swan conservation at Hyôko. Moreover, it founded an entire new relationship between man and bird. It enabled Jusaburo to observe his swans far better. He found many had very easily distinguishable features, so he named a good number of them according to their bill markings.

Because of the enormous cautiousness of wildfowl in general and of the Whoopers in particular, Jusaburo showed himself to them always in the same uniform: black cap, black jacket, brown trousers and boots, the feed basket hanging down from over the shoulder before his chest. Furthermore he applied the conditioned reflex to let the wild birds know beforehand what he was going to do and what they were to expect, calling them whenever they were to get food. Fixing the feeding time at 08.00 hours, 11.00 hours and 15.00 hours was another successful measure to reassure the swans.

By now Suibara had gained quite a lot of fame and on holidays many visitors came to see the swans at Hyôko. It was quite a meaningful year for Jusaburo as well as for Hyôko. On 10 February it was declared a Natural Monument and on 20 March a National Monument and the official name 'Winter Habitat of Wild Swans' was given. On 5 November the government of Niigata through its Department of Social Education and Cultural Affairs bestowed on Jusaburo the unusual title of 'Swanfather'.

Since then the town has paid for most of the food and people from all over the country began to send food packages.

Seven adults and three young swans arrived on 26 January 1955; among these was one Bewick's Swan. This season, however, not more than fifteen swans gathered on their peak day, 10 March. They were all 'old-timers', for, when Jusaburo called them, they at once gathered to get his food. They left, three families and a loner, on 11 March in the afternoon, after a stay of only 44 days. In this year the perimeter of the protected area was enlarged to 1.6 km (Figure 1).

Five adults came on 23 January 1956. Peak day on 13 February had twenty-two swans, five families and a loner. The entire flock left on 13 March. Some high-school boys caused disturbance by snowballing the swans, but were rebuked. A far greater disturbance was caused by a helicopter

coming down like 'a curse from Heaven' with three game-eager GIs, delighted to see so many ducks and mallards below. Instead of a duck, a swan was hit. Jusaburo's protests to higher authorities resulted in the personal appearance of the American Air Force Commander and the Provincial Governor, to apologize and offer reparations.

On 19 January 1957 ten swans, six adults and four young ones, came, and on 20 January two groups arrived separately in the morning. In all they were four families, twenty-two swans, on 13 February, leaving on 13 March.

Two adults and one cygnet alighted on Hyôko in the forenoon of 7 January 1958. By 14 February they had built up to twenty-three, in all six families, of which one was a new one. Fifteen of them returned on 12 March, eight lingered until 15 March. Jusaburo began to study their individual features more intensively. He divided them into two groups, one in which the black went up to the forehead of the swans divided like a 'Y' (not reaching it, though), while the other went up higher, in an 'I' shape. From this, together with their attitude, he believed he was able to distinguish their sex. He tentatively divided his flock into eleven females and ten males but felt that this had to be studied more. He gave them names according to their individual features.

In 1959 the swans again came early, two on 8 January. With thirty-one swans on 19 February they reached their peak, and the last left on 26 March. The numbers and attendances of the swans during their first decade at Hyôko are summarized in Table 2. One of the swans, after an excursion to Fukushimaagata, came home with his right eye, side, wing and neck badly wounded. However, it left with the others. One cygnet was bitten by a dog, having become too familiar with man. This seemed to be a warning that too much familiarity on the side of the wild birds might bring new danger to them.

Jusaburo had become ill, so Shigeo, his eldest son, took over the feeding. In February, Suibara town officially celebrated the first decade of its 'Winter Habitat of Wild Swans' at the lakeside with many people present. This turned out to be Jusaburo's farewell to his beloved swans of Hyôko.

Early in the morning of 25 December 1959 eight swans showed up over Hyôko. However, in the afternoon Jusaburo died

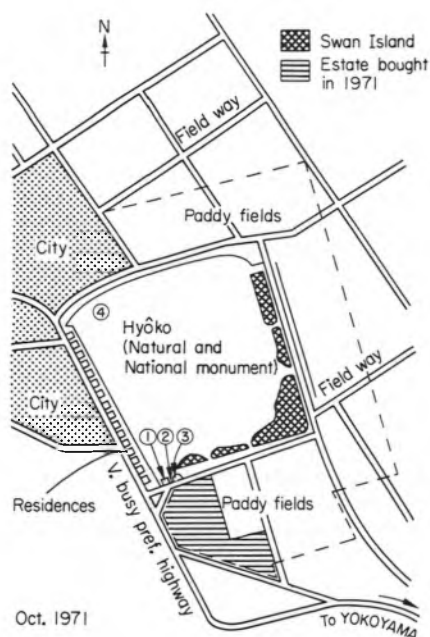


Figure 1. Map of Hyôko showing the winter habitat of wild swans at Suibara Niigata Prefecture, Japan. 1, observation post; 2, feeding dock, 3, water inflow; 4, water outflow; ----, planned purchase of additional estate.

rather suddenly without having been able to see the swans alight. They did not do so until 31 December, when a flock of six swans settled on the water. This was 11 days earlier than the year before.

On 15 January the flock was already fifty-one and grew to seventy-nine at the end of the month. It continued to increase to 3 February, and from then on to mid-March remained constant between 250–300. However, these swans could be divided into two units. One soon accepted the food from Shigeo and followed him like they did Jusaburo. However, the second group of more than 200 swans absolutely would not come near the feeding place.

The first group consisted of established 'old timers' that often had come to Hyôko. But the question remains open whether the second group was not used to man, or whether it could not approach the feeding place because of the domination of the first group.

The further growth of the Hyôko flock, passing the thousand mark in 1970, is shown in Table 2. The security and at-

Table 2. Migrating swans at Hyôko during 23 years, 1950-1972

Season	Number	First swan observed	Last swan departed	Length of stay (days)
1950	46	6 Feb.	31 March	54
1951	27	26 Jan.	24 March	61
1952	34	7 Feb.	16 March	39
1953	49	16 Jan.	15 March	59
1954	33	20 Jan.	18 March	58
1955	15	26 Jan.	10 March	44
1956	22	23 Jan.	13 March	51
1957	18	19 Jan.	13 March	57
1958	23	7 Jan.	15 March	68
1959	32	8 Jan.	26 March	78
1959/60	312	31 Dec.	6 April	96
1960/61	340	8 Nov.	1 April	144
1961/62	138	14 Nov.	31 March	137
1962/63	315	7 Nov.	30 March	143
1963/64	354	29 Nov.	7 April	129
1964/65	253	6 Dec.	6 April	121
1965/66	453	2 Nov.	7 April	156
1966/67	687	2 Nov.	8 April	157
1967/68	583	25 Oct.	26 April	183
1968/69	566	16 Oct.	24 April	191
1969/70	1019	1 Nov.	14 April	164
1070/71	811	28 Oct.	14 April	168
1971/72	543	28 Oct.	12 April	166

mosphere of love Jusaburo built was carried on by his son Shigeo, finding response in the swans. The Whooper and other wildfowl concentrations rapidly grew tenfold. Some 10,000 Mallard and Teal came.

The swans began to reach Hyôko earlier (16 October) and linger longer (26 April). The maximum stay was 191 days. Even the minimum stay of 96 days was longer than that of any season in the first decade. The average length of stay was 146 days.

The swans accepted Shigeo, following him wherever he went, racing towards him at his call. They adapted themselves to the unusual environment, remaining unconcerned about masses of spectators on the embankment and the moving cars. (A slammed door used to chase them away.)

The swans came to know the exact feeding time; many came from the farthest end of the lake aforetime, before Shigeo was visible or called them to line up at the feeding dock.

When the weather permits, Shigeo trains the swans to fly to the opposite side for food to keep them fit and to please visitors. They make a magnificent sight, racing over the water to their Swanfather upon his call.

Pupils of the Elementary School of Suibara voluntarily formed a 'Lake Patrol'. They serve daily after school, taking turns,

and on holidays, when visitors throng to see the swans.

In the autumn of 1971 the 'non-shooting' area was expanded to cover the entire hinterland, Fukushima-gata 6 km to the north and in other directions.

Origin and migrations

The swans which come to Japan are mostly Whoopers; Bewick's Swans are few. In January 1971 a survey showed an overall total of 7,023 (Table 3).

The nearest breeding place is in Sakhalin at Raichishi Lake. Here are still about twenty nests. Their breeding places spread over the northern Soviet Union, N. Mongolia and the Komandorskiye Islands. The Bewick's Swans breed in the eastern part of Siberia, the Lena Delta and the Kolyma Delta.

The Whoopers that come to Japan most probably come from the east of the Baikal Lake, the Altai Chain and the Amur River which comes from the Yablonovy Chain. They go up the Amur river, their favoured breeding ground, having to cover 4,000 km to Japan. On the way they pick up other flocks, growing in number. From the river mouth they cross over to Sakhalin, where all gather at Raichishi Lake in great num-

Table 3. Survey of swan species, January 1971, (by Tetsuo Kamaoku, Tôkyô, Ueno Zoo, Data Research Station)

Place	Whoopers	Bewick's Swans	Unidentified
Hokkaido			
Nozuke	2,500	—	—
Akkeshi	800	—	—
Aomori Prefecture			
Ominato	—	—	456
Kominato	—	—	449
Akita Prefecture			
Hachirogata	—	—	107
Miyagi Prefecture			
Izunuma	—	—	1,049
Fukushima Prefecture			
Inawashiro	—	—	218
Niigata Prefecture			
Fukushimagata	—	—	174
Sagata	385	53	—
Uwasekigata	192	34	—
Hyôko	191	23	—
Total	4,518	122	2,383

bers. After picking up the last swans, they proceed to Aniva Bay at the south of Sakhalin. The first flock arrives about 10 October. Here they linger until the middle of November, for in the shallow water they find plenty of food.

The Bewick's Swans are said also to go down the Amur River to Khabarovsk and then via Karafuto where they join the Whoopers. The two kinds of swans do not fight each other. In Nemuro, the swans' most favoured winter habitat, one can find about 20,000. There on the Odaito Beach and on Lake Furen they all come together. This lake has a circumference of 52 km, a length from north to south of 20 km and a width of 4 km.

When a severe cold freezes the water of lake and beach, the swans proceed gradually to the south and come finally to Honshu. Here is the bay of Kominato in Aomori Prefecture at the Sea of Japan, the swans' favoured wintering ground. Since olden times the people in this town treated all swans well. They see in the swan a messenger of God and a shrine is dedicated to it, the Raiden-Ji. This beach was declared in 1922 a 'Natural Monument', in 1952 as 'Extraordinary Natural Monument'.

With progressing winter, the swans move on to other parts of Honshu, searching other places where they can find peace and food. And, as in tiny Hyôko Jusaburo Yoshikawa gave them both, Hyôko became their regular winter habitat.

The man and his achievements

Jusaburo had been but a farmer, bringing for his immense task nothing but love for these migrating birds. Their presence was to him the assurance that man had not yet lost his foothold in nature, that man was still trustworthy. And it was this love, not his knowledge, nor the cold reasoning of a scientist, nor was it the skill with which he handled his job that lead to success. There are in Japan many much more magnificent swan concentrations, some even over 10,000. During all the 10 years of Jusaburo's conservation work his swan concentration remained small.

Neither the number of the swans nor the length of their stay were the important factors leading to the fame of Hyôko. It was the unusual, deep inner relationship between bird and man, wonderful harmony radiated by both.

Though the people mocked him so often, yet when he asked them to oblige him in the name of love for the wild creature, in his zeal of his task to give them justice and to readjust man to nature, he spoke with such dynamic force and authority that people in the end could but co-operate. And so he accomplished his aim, laying the foundation for the miracle of the second decade: the ever increasing swans at Hyôko. Through him Hyôko proved to the world that modern man and migrating bird can coexist.



Figure 2. Hyōko Lake.

Kiyoshi Honda



Figure 3. Distribution of wild swans in Japan, January 1970. Δ , Most known swan concen-

trations; \bullet , swan winter habitats; X, places temporarily visited; \circ , cities.

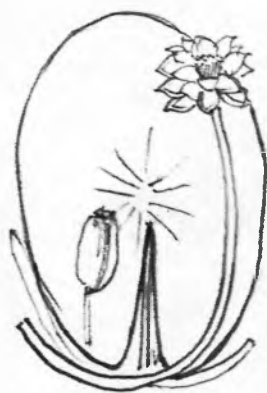
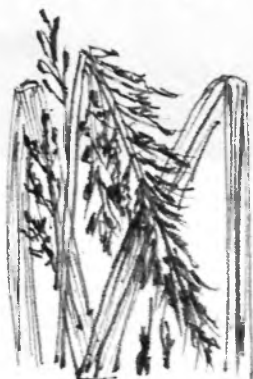
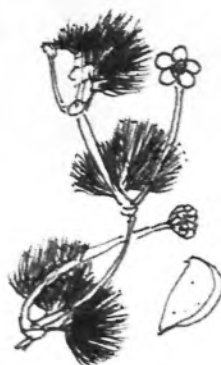
Acknowledgments

As I am not a bird expert, only a lover and keen observer of nature, preparing this report was quite a task, though a fascinating one.

Deep gratitude I owe, before all, to Dr Godô Nakanishi who always immediately 'had time' to answer my thousand-and-one questions. Likewise Dr Tetsuo Kamaoku did not tire to further this work. Other people who gave advice and information were Dr Yoshimaro Yamashina, Tôkyô, Dr Saburô Ieda, Suibara,

Dr Walther Thiede, Kobe, Mr Kiyoshi Honda, Niigata, who made the excellent photograph and, of course, Mr Shigeo Yoshikawa himself, on whose behalf this paper is written. From him and Toshi Yoshikawa, Jusaburo's widow, I learned many hitherto unpublished facts.

Finally my heart goes out to Paquita Aeschlimann who passed on the writer's article on 'The Miracle of the Ever Increasing Swans at Hyôko' (written August 1970) to Mr Peter Jackson of the World Wildlife Fund in Morges, who then contacted the Wildfowl Trust at

*Nymphaea tetragona**Trapa natans**Typha latifolia*
(stem and root)*Zizania latifolia*
(root and stem)*Phragmites communis*
(seed, stem and root)*Ranunculus aquatilis* h.
(seed)

Slimbridge. This led to the publication of a brief account of Hyôko in *Wildfowl* 22, and to the presence of Mr Kiyoshi Honda, Mr Shigeo Yoshikawa and myself at the Swan Symposium at Slimbridge. The pen and ink plant drawings were drawn especially for the Wildfowl Trust by Godô Nakanishi, aged 70 years.

Summary

The winter home of up to 1,000 Whooper Swans *Cygnus cygnus* at Hyôko, Japan, is described. The swans are artificially fed and given complete protection on a small (18 ha) reservoir on the outskirts of the town. Details are given of the past history of the area, the build-up in swan numbers, and some of their food plants.

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- Rose Lesser, More Joy, P.O. Box Nakahara 5, Kawaseki, Japan.



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Plate II. Above: the Black Swan *Cygnus atratus* male on the left was loaned to Slimbridge by Sir Winston Churchill in 1953. He died in 1973 having fathered over thirty cygnets and been a foster parent to many more. Below: the Black necked Swan *Cygnus melancorpus* demonstrates the young carrying behaviour common to the knob-billed group of swans.

A. Middleton

