The Status and Problems of Snow Leopards in Captivity in China

Full Text:

In October 1986 when the Fifth International Snow Leopard Symposium was held in Srinagar, India, Tan Bangjie and Liao Yanfa submitted a paper entitled "The status of captive snow leopards in China". For the first time, this paper reviewed in detail the 30-year history and the problems confronted by captive snow leopards in China, from 1956 when these animals were first reared and exhibited. The paper was published in the Proceedings of the Fifth International Snow Leopard Symposium. The present paper, prepared for the Seventh International Snow Leopard Symposium, builds on the last article and may be regarded as a sequel. It is concerned primarily with the gains and losses related to snow leopard in captivity in Chinese zoos during the past 6 years, and includes both a presentation of the situation and an analysis with comments on the whole process.

GENERAL COMMENTS ON THE STATUS OF SNOW LEOPARDS IN CAPTIVITY

Developments over the past 6 years may be summarized as follows: the general trend has been retrograding and not progressing, disappointing but not totally discouraging, more losses than gains and more passive than positive elements. However, the conclusion we draw from these comments should be that we must not submit to passivism and disappointment. On the contrary, we must draw good lessons from it and determine to overcome the difficulties, correct the mistakes and create a new prospect for snow leopard captive breeding in the not too distant future.

Concerning the discouraging situation stated above, the following figures are illustrative and we shall mention other similar indications in later sections:

1) The number of Chinese zoological gardens keeping snow leopards in 1986 was 15-16, whereas in 1992 the number decreased to 8.
2) The total number of snow leopards kept by Chinese Zoological gardens in 1986 was 35 (22__, 13__), whereas in 1992 the number decreased to 16 (10__, 6__).
3) There were two births of kittens (3 survived) in 1984-1985, but none during 1986-1990.

In concluding our 1986 paper, we put forward 5 points to express our views on the problems existing in the undertaking of maintaining snow leopards in captivity and in the direction of future advances. Even though some of the problems mentioned in these 5 points are already outdated, the majority still exist, some with increasing significance and some revealing new problems. It is therefore necessary to reexamine them here to place us in the position of reaping benefits from our experience.

The Problem of Snow Leopard Collection

The first point concerns the collection of snow leopard from the wild. Before 1987 the collection of wild animals in China had been more or less unplanned and uncontrolled. Of the 35 snow leopards in captivity only 3 were zoo-born, the others all being wild-born and purchased either from poachers or chance captors. These purchases were thus passive and not active, for in cases of active collection the rate of loss in the course of capturing, transporting and early stage of rearing had always been high. This state of affairs is of course harmful to the conservation of snow leopard in the wild and it is therefore hoped that both poaching and purchasing must be prohibited hereafter. The proper channel for zoo collection of snow leopard hereafter should be through planned arrangement of supply. Characteristics such as time, place, sex and age should all be fixed beforehand by the departments concerned. The ways and means of collection must also be put under legal control, outlawing unacceptable methods.

With governmental authorities attaching more importance to the cause of nature conservation since 1986, public support continued to uncover and sharply criticize cases of poaching, and concrete measures for the protection of wildlife were also strengthened. The proposals on controlled collection and planned supply suggested by our paper have also gradually materialized. According to past records, snow leopards purchased by the Xining Zoo alone amounted to 73 from 1968 to 1984. By comparison between 1986 and 1991 the total number of snow leopards purchased by all zoos was 10 (Qinghai 2, Sichuan 2, Xinjiang 6; 4 died soon after purchase). This was mainly because of the Chinese Law of Wildlife Conservation which was legalized at the end of 1988, to be followed by the announcement of the Implementation Rules of Conservation which provided detailed stipulations on the hunting, collection, purchasing and transportation of wild animals with clear articles of penalty against violators.

The snow leopard, being included on the list of first priority national protected animals, naturally receives high attention and as a result of the above conservation laws we can cite two differences in the status of snow leopard conservation after 1990. The principal change is that the common people who understand the protected status accorded to the snow leopard dare not hunt the animal any more. Even if they have the opportunity of capturing some snow leopard kittens most people dare not bring them to the zoo for sale, but rather release or dispose of them in privacy. Nevertheless, there are still a handful of individuals who continue to poach after high profit. Not daring to capture live animals they kill the snow leopards

and sell the skins and bones. For this reason, almost no zoo has received living snow leopards for sale since 1989, thus explaining the main cause of disease in the captive population of snow leopards. This situation has brought new problems to the zoos because, with the cessation of chance purchase, they have met practical difficulties in the matter of planned supply. It is known that some of the zoos had long waited in vain for the approval of their application for capturing a few living snow leopards to renew their stock. In our opinion, the correct way of acting according to the spirit of the Chinese Law of Wildlife Conservation is, while giving due protection to the key animals, allow special permits for hunting to the units that rightfully need to obtain some of these animals. Since zoological gardens are rightfully in need of new resources of snow leopards it is only fair to meet their requirements and to give them all necessary help. With new breeders in hand the zoos have greater potential to raise the reproduction rate which, upon reaching a certain degree, will naturally lower the zoos' requirements for wild-born breeders.

The Problem of Raising Reproduction Rate

The second and third points of our 5-point comments and proposals relate primarily to methods for improving and raising the reproduction rate of captive snow leopards. Considering our second point, the situation that after 30 years of captivity only one of the 15 Chinese zoos has succeeded in the reproduction of snow leopards indicates chiefly a problem of technology and management. It is quite possible for more zoos to succeed through means such as improvement of the captive environment and housing facilities, exchange of breeders and exchange of technical expertise, raising of management expertise and improvement of feed quality and quantity.

Nevertheless, the experience of zoos during the years 1986-1992 has been a drop in reproduction rate to zero. There was not only no increase in the number of zoos with successful breeding, but the only zoo that previously bred snow leopard has joined the ranks of non-breeding units. Thus, the opinion that breeding or non-breeding is mainly a problem of technical management is incorrect or at least not comprehensive. It seems more likely that this problem not only involves technical and managerial elements, but also and more significantly, requires the understanding and resolution of the leading cadres of the various departments concerned, the spirit of collaboration between the various related organizations, and even personnel matters such as the changes of leading cadres or responsible persons. This, however, is a problem beyond the scope of our discussion.

The third point of our comments included a concrete proposal for increasing the breeding rate of captive snow leopards in China. Using the 8 snow leopards at the Xining Zoo as a foundation, with moral and material support from Chinese and foreign sources, we proposed to build up a Chinese snow leopard breeding center at Xining. This center would not only breed but also exchange snow leopards with foreign countries to maintain a supply of animals to zoos throughout China for breeding and exhibition. Needless to say, this suggestion has come to nothing. The original breeding group at Xining Zoo was disbanded, leaving only three females, which with a loaned male from the Lanzhou Zoo makes a small breeding group of four now at Xining. Whether it is possible to form a larger central breeding group on this basis is left open to discussion in our symposium.

The Problem of International Exchange

The fourth point of our comments raised the problem of international exchange of snow leopards, a problem also related to improvement and increase in the reproduction rate. There have been two conditions unfavorable to improvement of the reproduction rate in captive snow leopards. One was the fact that there were more males than females, with a ratio of 22:13 in 1986, apparently a seriously imbalanced ratio. It was unrealistic to obtain more females from the wild to pair with the single males, for it would take a long time to collect the proper animals and would also be unfavorable to the wild populations. The other condition was that there were many more wild-born individuals than zoo-born (32:3), a situation unfavorable to breeding both from the viewpoint of animal nature and zoo management. For this reason we proposed to exchange surplus wild Chinese male animals with foreign zoo-born females, a proposal beneficial to both sides.

Reaction to our proposal was quick following the publication of our paper. The Helsinki Zoo in Finland, internationally known for its breeding success, was willing to undertake this exchange with China. Dr. Leif Blomqvist, Deputy Director of the Helsinki Zoo and International Studbook keeper for snow leopard, wrote to Tan Bangjie and Liao Yanfa on 8 October 1988, saying "In your paper, you are mentioning that you feel it would be useful if you would get some more female captive born snow leopards from West to be paired with the wild caught males you have. Unless this will be undone, zoos in your country will continue to try catch more animals from the wild. This should of course be avoided." Dr. Blomqvist therefore made a proposal that, in exchange for young wild-caught males of approximately the same age, his zoo could send two female snow leopards (born in 1987 and 1988) to China and asked to which zoo in China they should be sent. He also noted that, with his experience of breeding more than 80 snow leopards cubs, the best results would be achieved from a pair of possibly the same age, adding "I do not think that it is very successful to keep a 10 year old male together with a 2 year old female." Dr. Blomqvist continued, saying that if the exchange is to be made he was ready to ship two female snow leopards that winter on a flight to Beijing, in exchange for two wild caught 2-4 year old non-crippled males (crippled animals cannot be shown to the public in Europe). Futhermore, he said he could also present a slide lecture of breeding the snow leopard in captivity.

We deemed this a very good opportunity for the establishment of an ideal breeding center. It was a pity that, owing

to the lack of response from the authorities concerned, this mutually beneficial deal was laid aside. We now reiterate this problem because we believe it still has realistic significance. We consider that the national open-door policy and strengthening of international interflow should also be applied to the field of zoo development. We raise this question on the occasion of the symposium just as a response to the correct line. Fortunately, we have noticed very recently more signs of animal exchanges between China and foreign countries. It seems that Chinese contacts with countries of the Commonwealth of Independent States has increased since the disintegration of the Soviet Union. In May this year the Beijing Zoo received a pair of <1 year-old snow leopard cubs from A. Akayev, President of Kyrgyzstan, as a gift when he visited China. This was the first time snow leopards were imported into China, which should be good for improving the blood line of Chinese snow leopards. Futhermore, since Kyrgyzstan is a neighboring country to Xinjiang separated only by the Tian Shan Mountains, the snow leopards of Kyrgyzstan and Xinjiang belong to the same Tian Shan population. Lastly, the Shenyang (Mukden) Zoo and Harbin Zoo each had contacts with the Novosibirsk Zoo this spring, related to the exchange of Russian snow leopards for Chinese animals. The Harbin Zoo received a pair of Russian snow leopards very recently, which is a gratifying news indeed.

The Problem of Setting up a Studbook for the Snow Leopard

The fifth point of our comments proposed that in order to improve scientific management of captive Chinese snow leopards, the first thing to do should be to set up a studbook. There were more than 30 snow leopards kept by 15 zoos at that time. Not only was there no unified studbook, but some of the specimens lacked a registration card or even a registered number and house name. As matter of fact, not only snow leopard but many other precious animals kept by Chinese zoos were in a similar situation, creating many difficulties in the matter of scientific management. Many other rare and precious animals have international studbooks set up long ago (as of 1989, 20 studbooks for birds, 87 for mammals including one for snow leopard begun in 1976). Chinese zoos have been kept outside of these international studbooks. We deemed this an abnormal condition of a closed-door policy. Hence we proposed in the conclusion of our paper that we need not only set up a national studbook at the earliest moment, but should also incorporate it into the international studbook for snow leopard. This would be beneficial for all units keeping snow leopards in China and abroad. Following these proposals Volume 5 of the International Pedigree Book of Snow Leopards, edited by L. Blomqvist of the Helsinki Zoo and published in 1988, reprinted the paper written by myself and Liao Yanfa, at the same time incorporating the pedigree of the 35 captive Chinese snow leopards into the registered international list. Thus, for the first time there was a studlist incorporating precious animals from both China and foreign countries.

What is even more pleasing to us, the Chinese Association of Zoological Gardens has decided to start, since 1990, the setting up of studbooks for 26 species of rare and precious animals, including the snow leopard. Of course things are always difficult on the first step. The newly established studbooks are still comparatively sketchy, data and reference materials are still insufficient and will require improvement over the course of time.

CURRENT INFORMATION ON SNOW LEOPARDS IN CAPTIVITY

According to our latest investigation, as of mid-June, 1992 there are 8 Chinese zoological gardens keeping a total of 16 snow leopards (Table 1). From Table 1 we may sort out the following figures: 1) of the 16 snow leopards, 10 are males and 6 are females, 2) 13 adults are >4 years, 4 are >10 years and 3 cubs are ca. one year old, 3) 13 are wild-born and only 3 are zoo-born, and 4) of the 8 zoos only 4 (Beijing, Xining, Jinan, Harbin) have pairs in captivity, the other 4 (Shanghai, Dalian, Chengdu, Urumqi) have males only. The pair kept by Beijing Zoo are immature young

Table 1. Registered list of snow leopards kept by Chinese zoological gardens as of June, 1992.

Location	Reg. No.	Sex	Birth or age	Source	Since	Condition
Beijing Zoo	2	M	1979	Qinghai (w-b)[1]	12/1985	fine
	3	M	1991	Kyrgyzstan (w-b)	05/1992	normal
	4	F	1991	Kyrgyzstan (w-b)	05/1992	normal
Xining Zoo	3	F	81-82	Qinghai (w-b)	04/1984	fine
	5	F	1987	Qinghai (w-b)	1987	fine
	7	F	1991	Qinghai (w-b)	08/1991	fine
	6	M	ca. 8	Gansu (w-b)	1992 loaned	normal
Jinan Zoo	1	M	ca. 9	Qinghai (w-b)	06/1984	fine
	2	F	06/85	Xining Zoo	11/1985	fine

Urumqi Zoo	1	M	07/88	Xinjiang (wb)	08/1988	fine
Chengdu Zoo	1	M	06/88	Sichuan (w-b)	08/1988	fine
	2	M	06/88	Sichuan (w-b)	08/1988	fine
Shanghai Zoo	1	M		Gansu (w-b)	11/1983	fair
Dalian Zoo	1	M		Qinghai (w-b)	1983	normal
Harbin Zoo	1	M	adult	Novosibirsk	1992	
	2	F	adult	Novosibirsk	1992	

[1] w-b = wild-born

ones. The breeding potential of animals above 10 years of age is questionable. There is also some information in addition to that in Table 1, as follows: The Urumqi Zoo received a male cub from Huocheng, Xinjiang, in August 1987, which died on 25 January 1991. Two female cubs were received from Bole, Xinjiang in August 1988, which died on 23 June 1989 and August 1989, respectively. A male cub was received from Tokxun, Xinjiang in January 1989, but died on 25 May 1989. The Urumqi Zoo received but immediately transferred a female cub in September 1989. These data are helpful in determining the range of snow leopards in Xinjiang, but it is not known whether any other zoos have also received animals from this region.

Existing Problems and Future Prospects

The most outstanding problem is how to enlarge and strengthen the zoo captive population and increase breeding pairs, so as to launch the breeding project with the aim of collecting few or no more breeders from the wild. To achieve this aim, the following suggestions may be considered:

1. First, it is necessary to strengthen the central and local authorities and devote more attention to the task of maintaining snow leopards in captivity. The Chinese Association of Zoological Gardens should bear the responsibility of drafting an overall development project, assisting in mapping out a plan for breeders and an action plan for transferring breeders among all zoos concerned, and drafting a concrete plan for the establishment of a central breeding group.
2. Efforts should be made to obtain help from home and abroad, including more qualified technicians, new technology, and financial and material resources. These should be used to build up new construction, improve internal installations and equipment, add new technical strength and new breeders. Moreover, we consider this international snow leopard symposium a good opportunity for strengthening our connection with international circles, especially the International Snow Leopard Trust, as well as scholars and specialists from various countries.
3. To develop animal exchange agreements with more foreign zoos, not necessarily limited to snow leopards, but other species of animals as well, and not necessarily just Russian zoos, but European and American zoos as well. We are aware that both Novosibirsk Zoo and Moscow Zoo have conducted snow leopard exchanges with American and British zoos on a number of occasions.
4. With the aim of elevating the technical standard of rearing, management, breeding and veterinary care, it is beneficial to hold gatherings such as lecture classes or technical interchanges at certain times of the year.
5. To improve and enrich the contents of our studbook and to make it more timely and more comprehensive, each zoo should appoint a specific coordinator responsible for regular reporting and exchange of information.
6. An appeal should be made to the office in charge of wildlife conservation that in order to better coordinate the breeding plan for snow leopards in Chinese zoos, it is hoped that on occasions of approving the application for collecting wild snow leopard breeders, convenience and help be given as much as possible so that the plan may be realized efficiently.

CONCLUSIONS

As a sequel to the paper submitted to the Fifth International Snow Leopard Symposium held in 1986, this paper has presented the basic status and problems of captive Chinese snow leopards in recent years. Despite the numerous troubles, difficulties and passive elements, it is still believed that, as pointed out by the comments made in the opening words of this paper, a new phase can be realized in the not too distant future only if we have the determination to make a breakthrough. To sum up, we consider that the holding of the Seventh International Snow Leopard Symposium in Qinghai is a good opportunity for summarizing our experiences and lessons. Following all the analysis and criticism of the unfavorable situation, chiefly resulting from the lack of enthusiasm and attention, it is time to end the stage of idleness and start writing a new chapter. We have firm belief in this hope because we consider this symposium different from all previous symposiums in that it is attended by representatives from all related Chinese Circles, especially with more delegates from Chinese zoological gardens. It differs fundamentally from the 5th Symposium, which Liao and I failed to attend, and despite the fact that our paper was published in the Proceedings, it was never translated into Chinese or even made public in China. In contrast, there are many noted personages coming to this symposium, which gives us confidence and hope that accomplishments will be gained in time.