

PARTICULARS ABOUT THE PRZEWALSKI HORSE

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**Foundation for the Preservation
and Protection of
the Przewalski horse**



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History of the horse's descent

The Przewalski horse is in fact the only truly wild horse still alive on earth today, the only ancestor of the present domestic horses that has survived since prehistoric times. It is certain to be extinct in the wild. Their number is now around the 1450 (per 01-01-2000), spread all over the globe in zoos, parks and semi-reserves.

60 Million years ago.

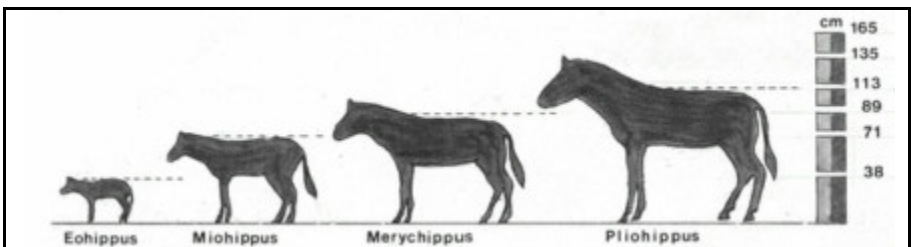
Some 60 million years ago there lived in the wet forests amongst the bracken and shrubs a small animal called Eohippus, the size of a fox. Its food was leaves and twigs, and it was equipped with four toes on its front legs and three

on its rear was the ancestor of we know it Naturally years is which can ined, but to idea we this on an clock, sho-hours, each tes, each seconds. divided the over the 12



legs. That very first the horse, as t o d a y . 60 millions something not be imag- get some may project ordinary wing 12 of 60 minu- minute of 60 Now if we 60 million x 60 x 60,

then one second would amount to 1400 years, so one second back in time would bring us to the year 480. To the time when Clovis, the first Western European king to be converted to Christianity in 498, was king of the Franks, and defeated the Romans, pushing them out of Western Europe. In the course of those 60 million years our small animal developed into the horse, as we



know it nowadays. The animal of the woods became an animal of the steppes, requiring its teeth to change and adapt themselves. Its legs and feet changed too, and gradually it grew into the single-toed animal as we see it today. And it had grown as well. All these changes happened gradually, and if there were significant changes, the horse like animal was given a different name, and these names are awkward, to say the least. To name but a few; after Eohippus came Orohippus, then millions years later Mesohippus, to be followed by Miohippus.

Pliohippus lived 10 to 1 million years ago, and he was the first equine animal that had a real hoof, and already looked somewhat like the horses, which are alive today. After Pliohippus came Plesippus, and he is really the oldest ancestor of all present equids, such as the zebras, the Grevy-zebras, the wild asses, the Asiatic wild ass and the Przewalski horses. Its withers measured about 142 cm. Now through all these ages and ages the horses have managed to hold their own, and it must have been far from easy. Gigantic wingless birds of prey threatened the small Eohippus prey, such as the Diatryma, and huge predators such as the tiger, Eusmilus. Then the earth was ravaged by volcanic eruptions, massive flooding, causing famines, but fortunately these. Twenty million years ago animals were hunted twice the size of the ones they too hunted in by then grown to meter, and they were. When the Ice Age arrived, with glaciers, ice covering everything, all the animals, including our equine



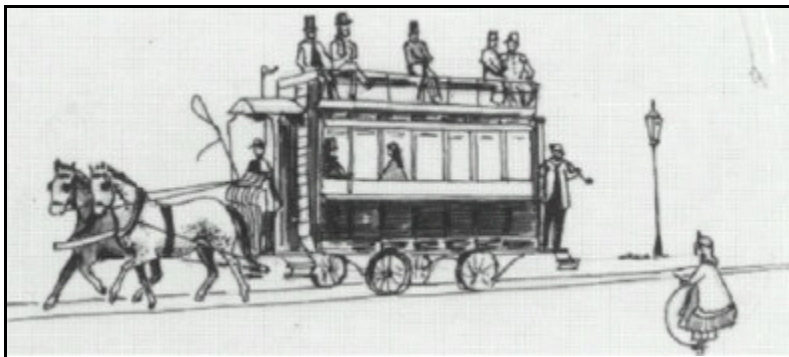
as the sable-toothed 25 millions years ago by earthquakes and volcanoes accompanied by extensive the death of many animals. Mesohippus survived years later the equine by primitive wolves, ones alive today and packs. The horses were withers of just over one meter managed to survive. When the Ice Age arrived, a million years and snow covering everything, all the animals of the steppes, ones, had to cover terri-

fic distances looking for new grazing grounds. Yet these difficulties they managed to overcome as well, they populated the earth in great numbers. Lastly some 30.000 years ago the wild horses came in touch with the prehistoric man, who hunted them and killed many, but the natural increase of the wild horses offered sufficient possibilities to survive once again. The very first visual account of the existence of Przewalski-horse type wild horses dates from 20,000 years ago. Rock engravings, paintings and decorated tools were found in France and Spain. During the following ages mankind developed extensively, their number increased rapidly and they spread all over the world, making a start with farming and with keeping cattle. The relationship between the horses and man changed; whereas it used to be an animal to be hunted, a prey, it became to be regarded as the enemy of man. Wild horses grazed on the pastures man made for his tame cattle, and early farmers feared that tame

mares ran off with the wild stallions. This caused the horses to gradually be pushed back to more distant areas, barren regions of little importance to humans. Their last refuge was the deserted south- western part of Mongolia where they were last seen in 1968. Now they are as certain as extinct, after having populated the earth for 60 million years and during that time survived against all odds.

Why is the Przewalski horse so important?

Our domestic horses have a number of ancestors, and since the nineteenth century the forest tarpans and the steppe tarpans died out, the Przewalski horse is the only remaining ancestor left. Even so, the time that there were only wild horses around was very long ago, because some 3000 years B. C. man started domesticating wild horses, that is making them into animals for their use. They caught wild horses, killing the wildest ones for their meat supply, keeping the tamest, and breeding with those. This went on for hundreds of years, the wildest foals born in captivity were killed, and the tamest kept. In this



manner the domestic horse evolved. In early days these were only kept for their meat, avoiding being dependent for that on the hunt. Later on horses were trained to pull carts, and the next step was to ride them. In this manner horse became very important for man, in fact indispensable. By the use of domestic horses one could move heavy loads, cover large distances, have an advantage in times of war, as a mounted man is taller and quicker, therefore more dangerous, than a man on foot. Another discovery was that with the help of horses one could till the land quicker and better. Within the past hundred years the horse drawn wagon was the means of transport of the day: baker and greengrocer came to the door plying their goods by horse and cart, stage coaches crossed the countries, loaded with people and mail. Then there was the horse tram, drawn by the sturdy horses. Thousands of ponies pulled their coal tubes to the shafts, deep under the surface in the mines. And even during the last world war 10 million horses perished. But as the train, the passenger

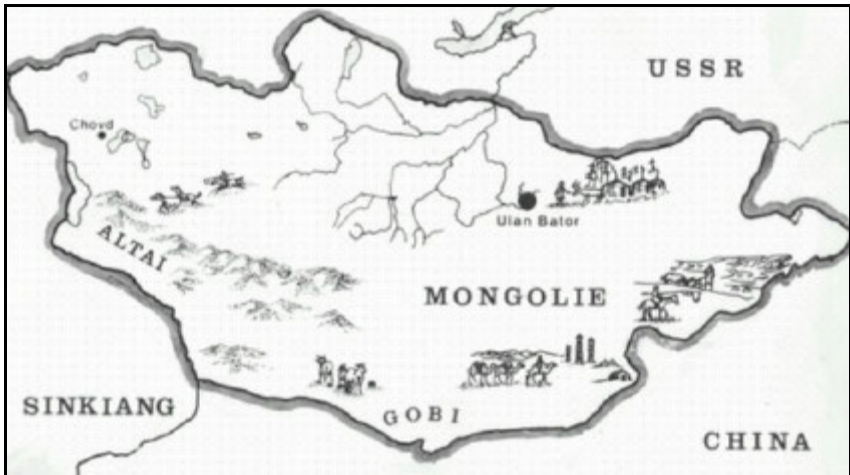
liner and the motorcar gained popularity, the horse seemed to have lost its important position. Yet that was deceptive: whilst the horse was increasingly being used for sport and recreation in the industrial world, in the agricultural countries the horse retained its position, and in the underdeveloped countries the horse never lost any of its useful functions. Considering its importance in the past as well as still in the present, it can easily be understood why the only remaining wild ancestor species of our domestic horse should not die out but remain with us for the future as well.

What does a Przewalski horse look like?

Of course it is a horse, and does look like one, yet there are some clear differences. It is a heavily built horse, not large, with withers of 1.30 meter (about 13 hands), a short strong neck. Its colour is beige-brown, becoming lighter towards its belly. It has a stripe over its back, called 'eel-stripe', has stripes across its legs like zebras have, and it has upright manes, which unlike with the Fjord pony's, do not fall over if they are not cut. These manes stop between the ears, and hence a Przewalski horse has no forelock. Around its nose it is pale, and this is called a mealy nose. Its tail is different too: in the domestic horse the hairs on the tail start at the top, tight where the tail is implanted on the body. But in the Przewalski horse, as in the asses, the dockhairs are short and the longer hairs only start lower down. In a sandstorm he would turn his head with eyes and nose away from the fierce wind and the driven sand grains, and protect the vulnerable parts of his rear with the tail. Tail and manes too, contain quite a lot of black hairs. Then there is the difference in chromosomes. A difficult thing to explain, perhaps the best description is that chromosomes are the particles in the nucleus of human, animal and plant cells, carrying the genetic elements. Remarkably the domestic horse has 64 chromosomes whilst the Przewalski horse has 66. The Przewalski horse is very shy. When they are approached in the wild, they run away when humans get as near as 300 to 400 meters (330 - 440 yards). Hunted by man humans had become their most important enemy! Naturally much has changed during the nearly 90 years in captivity in zoos, where the possibility of escape was lacking; there they can even be touched yet they remain unreliable. If they have to be transported, or even when their hoofs have to be trimmed, this can only be done after anaesthetising them.

Where did the Przewalski horse live?

Many wild horses lived in Europe and Asia some 10 to 15 thousand years ago, part of which would later acquire the name Przewalski horse. That they lived in Europe too we know from the drawings made in the caves in France and Spain by our ancestors, who hunted horses. Then the number of human beings increased on this part of the globe, land was being cultivated more and more, whilst animals were being domesticated. Naturally the wild horses did not respect the wishes of man, they continued to use the land taken into cul-



tivation, and the stallions even incorporated tame mares in their herds, abducting them in this way. So instead of hunting object the wild horses in Western Europe. The tarpan had withdrawn to Eastern Europe the Przewalski horse to Asia. But there too the population grew. More and more land was brought into cultivation. The wild horses were pushed away to the furthest regions in the East, the Southwest of Mongolia. The tarpan died out in Eastern Europe around 1900. Mongolia is situated in the middle of Asia, having borders with Russia on the North and West, and with China, 48 times the Netherlands, as large as Spain, Portugal, France and Great Britain together, with no more than two million habitants. In the past it has been alternatively under Chinese and Russian rule, but from 1923 to 1990 it was a ruled as an independent communist state with a large Russian influence. The area where the Przewalski horses had their last abode in the South West of this country, and extending perhaps into Sinkiang, the adjacent province of China. The area is called Dzungarian Gobi. It consists of a large desert surrounded by mountains covered with dry steppes. Only some drinking places are present for wildlife. There are no towns in that area, and the only population consists of nomads with their herds. The soil contains much salt, causing the growth of very special plants, such as the saxaul. This plant has no leaves but absorbs much moisture, ideal food for camels, but not for horses. When the rains fall in March, the desert becomes green very quickly, the flowers show up in the most beautiful colours yet towards the end of April all is soon scorched, and the usual desolate waste remains, wherein the drinking places dry out too. The nomads crossed this territory from autumn till spring moving from one drinking place towards the other. Under Russian influence the situation has changed gradually since 1923. Pumps were placed near drinking places facilitating regular human occupation, thereby forcing the Przewalski horses away from them. The horses retreated into still less habitable areas, where food and water was even less easily available. This is probably one of the reasons why they are now extinct there as well.

Who has discovered the Przewalski horse and how did that happen?

Czars ruled Russia for centuries up to the end of the First World War in 1918, and the country extended from Europe to the pacific coast of Asia. Little was known of this latter part, and to explore the area expeditions were equipped and sent out. One of these explorers was called Colonel Przewalski, a man of Polish descent in the service of the Czar. He made 3 trips into the middle of Asia, and from the second he returned in 1878 because of illness. This time

the chief of a border control post presented him with the skull and hide of a ?wild? horse. At that time the general opinion at that time was, that wild horses were extinct. Colonel Przewalski took the skull and hide to the university of St. Petersburg. Poliakov investigated that it was indeed from a wild horse. In 1880 Colonel Przewalski made his third trip into Central Asia, and this time he did discover two herds of wild horses, which fled as soon as they saw him. In scientific circles it is customary that a newly discovered animal or plant be given the name of its discoverer, and thus this wild horse from Mongolia got its name of ?Przewalski Horse?. Some years later the brothers Grum



Russian hunters, covered Central Asia. They probably have been the first to see Przewalski-horses in the wild. Przewalski's observations seem to indicate that he saw wild asses instead of wild horses. Grum Grshimailo shot Przewalski-horses. The skulls and hides of these were also taken to Petersburg, investigated there, and once again the conclusion was, that they were from wild horses, and that consequently these had not died out, but still existed.

How did the Przewalski horses live in the wild?

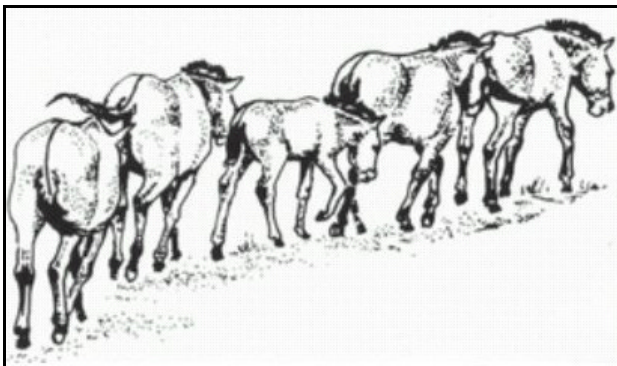
Having related what the Przewalski horses look like, where they once lived and how they were re-discovered, we will now tell how they lived. Przewalski horses are social animals like steppe zebra's and domestic horses. They live in groups. There are two kinds of groups, family ones and bachelor ones. A family group generally consists of a stallion plus 3 or 4 mares, with their foals and some yearlings. As the name implies, a bachelor group consists of stallions only, mostly led by a somewhat older stallion. Each group covers a specific area or home range during day to day activities. The mayor requirements of a group within a home range are food, water and shelter. These resources

can be found in different parts of their home range with the change of seasons. These resources may be shared with other groups as well. Then the home ranges of more than one group may overlap.

A family group.

The leader of a family group is an older stallion, who protects his group against predators, leads them to the drinking places and grazing grounds, and covers the mares in the spring. The mares in his group are far from equal amongst each other. One mare is the highest in the hierarchy, and she usually takes the

when the trek to here else, stallion in Conflicts the mares juveniles accidents ever happens quickly, and anyone is a gain.



lead horses somewhat the rear. between and the occur. Yet hardly pen, restored soon ever-grazing Horses

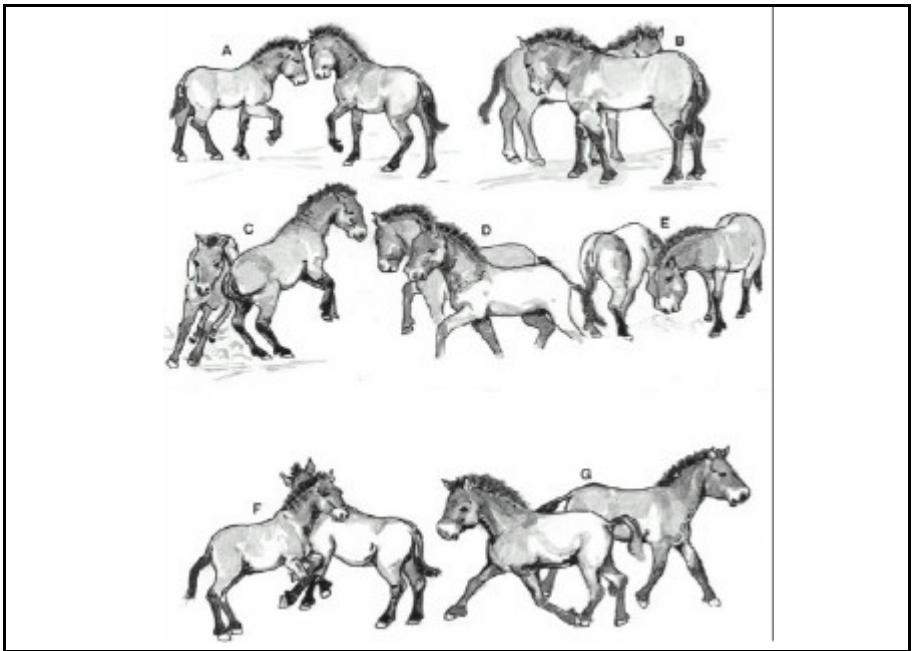
also have a social grooming behaviour, whereby they use their teeth to nibble each other's skin. Not only do they enjoy this, but it also cleans the skin. Horses tend to establish one or a few regular grooming partners. After introductory smelling, the grooming activity usually begins along the crest of the neck; it may proceed to the withers, the shoulders, or along the back to the croup stays together for years. Juveniles are chased away after 1,5 - 3 years, the fillies usually at somewhat older age than males. The young males then join a stallion group, whilst the fillies seek another family group, or are picked up by a stallion from a bachelor group.

The bachelor group.

This is formed of stallions only, with an older stallion leading it. When the young stallions have lived in such a group for 3 to 4 years, they have learned much, and may get into a position of founding their own family group. Either by collecting young mares after these have been chased away by their father, or by challenging the stallion of a family group. If the latter is still able to fight, the struggle can become fierce, and the attacker may have to pay for it with his life. The meeting of two family stallions, is more ritualised and most less aggressive.

The meeting of two family stallion.

In free nature meetings of two family groups did occasionally occur; when the groups had arrived at a certain distance from each other, the stallions would step out of the group to meet each other.

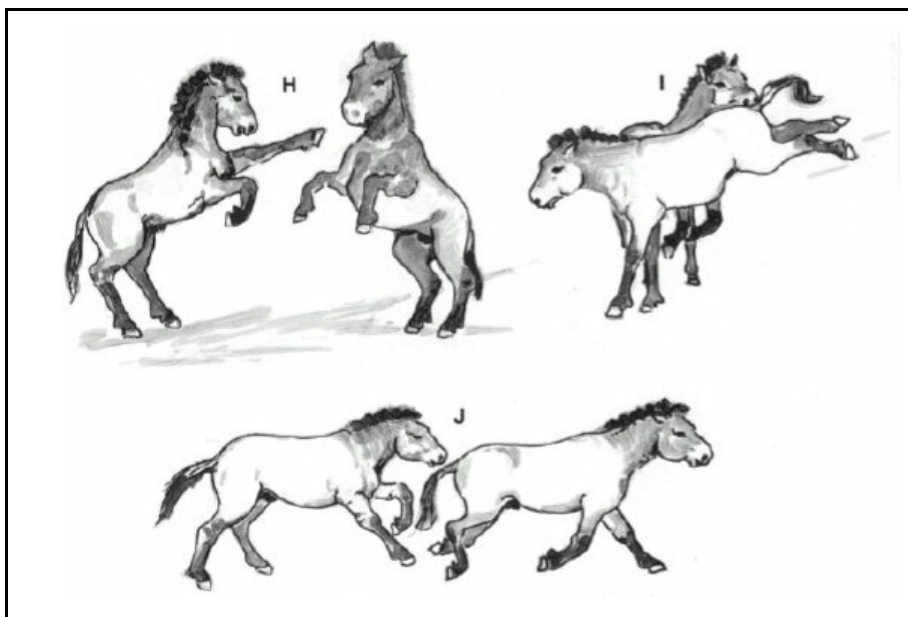


- A. They proudly approach each other, and smell each others muzzle.
- B. Then they smell each other's flanks.
- C. They threaten each other, push and kick with the rear legs.
- D. With a proud stance they trot next to each other, head held high.
- E. Jointly they smell the stud piles
- F. They push with their shoulders against each other, and bite somewhat.
- G. They proudly return to their own group.

The meeting of a stallion of a family group and one of a bachelor group.

Such meeting happens in the same way as far as stages A to F inclusive are concerned, but things can then get very rough indeed:

- H. They prance and hit with the fore legs and try to bite.
- I. Then kick each other with the rear legs.
- J. Ending with the conqueror chasing away the vanquished one.



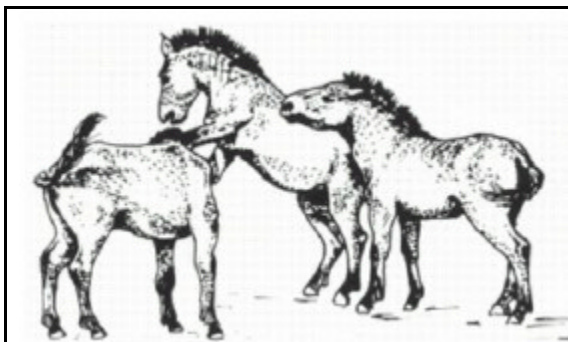
Whilst all this is going on the mares go on grazing peacefully at a distance. When the family stallions return to their groups they herd the mares away. However, if the intruding bachelor from the stallion group has the upper hand, then this usually points to the fact that the family stallion has become old or has received irreparable injuries. It is mostly difficult to defeat a harem stallion as he has both strength and years of experience.

Foals.

The mares are sired in the spring and after 11 months so in the next spring, the foals are born. Newly born foals sleep a lot, drink often from the mother and play with each other at times they are mischievous. As they grow older they sleep less, play less and graze more. The mother will always defend her foals against other mares and even against the stallion. If wolves attack her then the entire herd will come into action for defence. The mares circle the foals and the stallion attacks.

Male juveniles are allowed to remain in the family group for as long as they behave submissively towards their father, and do not try to mate. If they do try to mate they are expelled from the group, irrevocably. But the situation is different for the fillies.





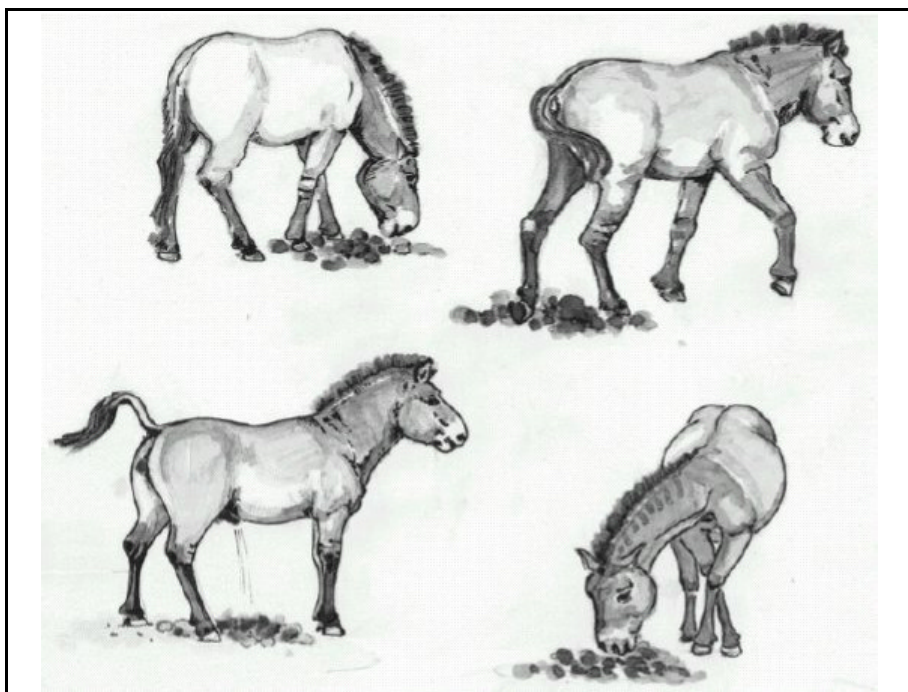
Whereas the family stallion will never allow his adult mares to come into contact with a strange stallion, he is much more permissive towards his daughters. When the fillies are 18 months to 2 years of age they are permitted to contact other stallions or other family groups. Neither the harem stallion nor the

mother would object to this. So it can happen that a filly remains for a while with a stallion from a stallion group, or leaves the family group to “stay” with another family group. If she did not like it, she would return and rejoin her father and mother. This could be repeated until at last she would either decide to stay with a single stallion who was in the process of forming his own family group, or more often she would join another existing harem.

Stud piles and orientations

Within their environment horses remain well oriented. Visual cues provide information about the location of landmarks, the horizon, the sun, and the stars. On windy days, horses tend to orient parallel to air currents while feeding and resting. Trails are often established and utilised along frequented routes. Long distance travel appears to involve memory and landmarks. Horses tend to follow the route of other horses. Vision and smell are very important, also in finding water sources. Smell is important in social behaviour as well and keeping distance between groups. A harem stallion knows the smell of his mares very well. Stallions smell the urine and faeces of their mares regular and especially during courtship to determine the state of oestrous of the female. A stallion frequently displays the specialised flehmen, or curled lip, which enhances olfaction. Because stallions mark with their urine or faeces some stud piles or urination spots and ignore others, each seems identifiable to him. Marking behaviour is said to occur when a stallion approach a recently voided pile of faeces and after smelling takes up a marking position in order to defecate or urinate on top of the faeces. The stallion turns 180 degrees, or steps back over the pile, to investigate his own faeces. Harem stallions exercise exclusive rights to the mares in their group. He must continually work to prevent his mares from leaving the harem, to protect them from marauding stallions, and to drive young male offspring out of the band when they become a threat to him. Marking behaviour is telling “these are mine mares....keep distance!”

When a stallion defecate on a stud pile it can be seen as a signal to other stallions that he passed this route with his mares. The other stallion can be alert

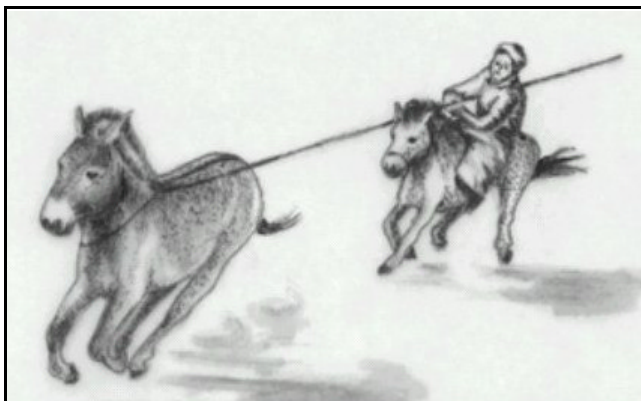


to keep distance or prepare for an encounter. A stud pile develops in an area where repeated defecation occurs by one or more stallions over a period of time. As most stud pile use occurs during locomotion more stud piles are to be expected on routes leading to and from watering, grazing and resting areas.

We should not forget that the Przewalski horses became extinct in 1968. What we know of their behaviour before their extinction we know from Colonel Przewalski and from the brothers Grum Grshimailo. That is not much. Much more is published on the behaviour of steppe zebras and feral domestic horses. Different studies on the behaviour of Przewalski-horses in semi-reserves have been executed as well. Although Przewalski-horses seem to be more aggressive than domestic horses their social organisation and social behaviour seems to be comparable.

The capture of Przewalski horses.

When it became known that Colonel Przewalski had discovered wild horses in Southwest Mongolia plans were soon made to catch them alive. The trading house Asanov in Kobdo was quite prepared to organise the hunt for Przewalski horses by local herdsmen, as long as money was made available. Around 1900 there were various people with huge estates, rich people, owning much land, who were interested in collecting rare and unusual animals and



housing them on their estates. One of these was Baron von Falz-Fein who had an extensive estate near Askania Nova, in Southern Russia. He was the one who ordered the catching of the Przewalski horses. The first effort was made in 1898, but it became soon obvious that it

was impossible to catch adult horses; they were much too fast and took to their heels as soon as they saw people approaching in the distance. The only thing possible proved to be to catch foals of a few months old. As soon as a group had been sighted, by herdsman, as even then there were not so many Przewalski horses in the wild, the chase started. Riding very fast horses for so long that the foals got exhausted, lagged behind, allowing the hunters to gradually gain to them. At that point the harem stallion might turn, to drive the foals further, but if that did not succeed either, the stallion would attack the pursuers, which as often as not he had to pay for with his life. After that the herd would disintegrate in panic, enabling the exhausted foals to be caught with the help of fresh, well-rested, domestic horses. The mares, deprived of their leader, fled in unrestrained speed, whilst the mare who would offer resistance would also be killed. The legs of foals were tied together, and in sacks along the sides of camels they were taken to a fenced area in the Dzungarian Gobi. In this manner 6 foals were caught in 1898, and these were so young indeed, that they still required mother milk. At first it was thought these foals could be fed on sheep milk, but that is unsuitable as it contains too much fat, so they all died. So here was a dilemma, what could be done? It was decided to deprive tame Mongolian domestic mares of their foals, and substitute the captured Przewalski foals, providing them with a foster-mother. As the Mongols themselves refused to provide their mares for this purpose, the organisers were forced to recruit the foster-mothers all the way in Bysk, in Russia. In this manner the second hunt started in 1899, successfully, as the foster-mothers did accept the Przewalski foals, let them suckle, and together with these step-mothers they were later transported to Askania Nova. In 1900 the catch was small, no more than three foals in all. By then Baron von Falz-Fein had spent a lot of money, more than 10.000 roubles, an enormous amount at that time. So when in 1901, 29 foals were caught, he decided not to buy at once, but to try to bring the price down by bargaining. At that time there lived in Hamburg a well known animal dealer, by the name of Carl Hagenbeck, who caught or bought animals all over the world, selling them to the zoos. He had done this in Central Asia too, and recently he had acquired an order from the

British Duke of Bedford to secure some Przewalski horses for him. It happened that just at the moment the negotiations between von Falz-Fein and the sellers stagnated, a catcher from Hagenbeck happened to be in Kobdo. He wired Hamburg, got the order to purchase the Przewalski foals, which he did just under the nose of von Falz-Fein. In this manner the Przewalski horses, caught that year, arrived in Europe. The following year, in 1902, 14 foals were caught, 11 of which went to Carl Hagenbeck, 3 to Askania Nova, as did the 2 fillies caught in 1903. After that catching stopped, the zoos had proved not to be very interested, as the Przewalski horses resembled the common domestic horses too much, and the cost of catching them was very high indeed. In 1947, so nearly 50 years later, a few more Przewalski horses were caught, and taken to Shargalantu, the new name of Kobdo; in 1957 one of these, a mare, was taken to Askania Nova.

Their transport.

Not only the catching of Przewalski foals was not easy, as has been related, their transport was very difficult as well, and it might take 6 to 8 months before the horses arrived at their destinations. After they had been caught they were taken to an fenced area, where the tame mares were ready for them, although it would need some time before the foals had got used to their stepmothers. Once the area had been cleared of Przewalski horses, the caught ones started the long trek on foot to Kobdo, during which the foals were tied to their stepmothers. In Kobdo they were allowed some rest before starting the 310 miles (500 km) journey to Bysk, mostly on foot too, accompanied by riders on camel back. This journey might take some 50 days, during which



they crossed uninhabited areas, at times attacked by fierce, biting snowstorms. Very hard tasks for these young animals and they must have been glad to travel the last section by boat where they were given space between barrels and other merchandise. Bysk was a station on the Trans-Siberian railway, which did not often run, hence they might have to spend some weeks there, in a fenced area, where they could recuperate from their trek. Once the train did arrive they were loaded in a wagon with their step-mothers for the trip right across Siberia and Russia to Askania Nova and Hamburg. This trip would again last for months. Hence foals caught in the spring might not arrive at their destination until the end of that year, and several died during the trip. Five arrived in Askania Nova, the others went to the stables of Hagenbeck in Hamburg and from there to their various destinations: Twelve to the Duke of Bedford (England), two to Halle (Germany), one to Edinburgh (Scotland) three to London (England), one to Paris (France) and two to Gooilust, an estate in the Netherlands. Some of them were shipped to the United States, of which: two to New York and two to Cincinnati. During the year of arrival 9 died in Hamburg, and for one colt Hagenbeck could not find a buyer until many years later, when the stallion was aged 18. He went to Artis Zoo in Amsterdam (The Netherlands).

Przewalski horses in captivity.

Many of the 54 Przewalski horses died very quickly after reaching their destinations because of the stress from capturing them, the long lasting journey to Europe and the deprivations during all those months. Of the ones that survived only a few did breed. Foals were born only in Askania Nova, Halle, Gooilust, Woburn, New York, Cincinnati and Paris. But those foals born in Gooilust and Paris did not breed themselves when they were adult. Actually not to be wondered at, considering that these animals, accustomed to the wide- open spaces and life in groups, were now confined in couples in an utmost limited space in captivity. Whereas in their freedom they grazed all day, or searched for their water, now they received some hay in a rack twice a day, and water from some container or trough. What else was there to do than to be bored? In the years leading up to the Second World War there were on average 40 to 50 horses, distributed over 15 to 20 zoos. Yet the war took its toll of these too, many died from bombardments and war activities, and in 1945 there no more than 31 left, fortunately most of them in the Prague and Munich zoos, where with luck and good management they bred well. From these two places they were sold to zoos and parks all over the world, even to Askania Nova, where all the horses had been lost through war activities. Then in 1947 a last mare was caught in Mongolia, and 10 years later she was taken to Askania Nova. She was called Orlica III, and her arrival was important indeed as by that time the inbreeding was well on its way. All the foals had descended from no more than 13 ancestors caught wild. At the end of the



seventies some new breeding centres were established. Less related Przewalski-horses were bought and breeding results in these centres were better. The 600 Przewalski horses alive on January 1st 1984 were spread over 95 zoos and parks, Askania Nova having the largest number, 46, and they have a large grassed area at their disposal. The new Marwell Park, near Winchester in England, had 21, Port Lympne in Kent (G.B.) had 33. Here too they have enough space where grass can grow. Yet in most zoos that is quite impossible, and the area is so small that not even a single blade of grass can emerge. It should be said that the number of 1450 (per 01-01-2000) of these horses is something to be proud of, considering that in 1945 there were no more than 31 left, of which only 13 did actually breed. Yet this very increase brought with it important problems in the 40 years after 1945: in many zoos the stallion mates his mare, later often his own daughter, and even his granddaughter as well, leading to what is called inbreeding. Inbreeding is dangerous for the horses. It increases the chance of the manifestation of genetic diseases, which means that they are carried on from one generation to the next. Consequently there is quite a chance that less healthy foals will be born and that the horses themselves may no longer reach an old age. So confining small groups in very limited spaces can and does present problems. Furthermore in the wild the mares choose their own stallion, always a strong one. In zoos the management puts a stallion together with some mares, and preferably they take a stallion which is amenable as that provides for less trouble. All in all it can be said that it's far from simple to keep wild animals in zoos, and to retain their wild characteristics: this requires much more than just housing and feeding them. On the other hand we should be more than

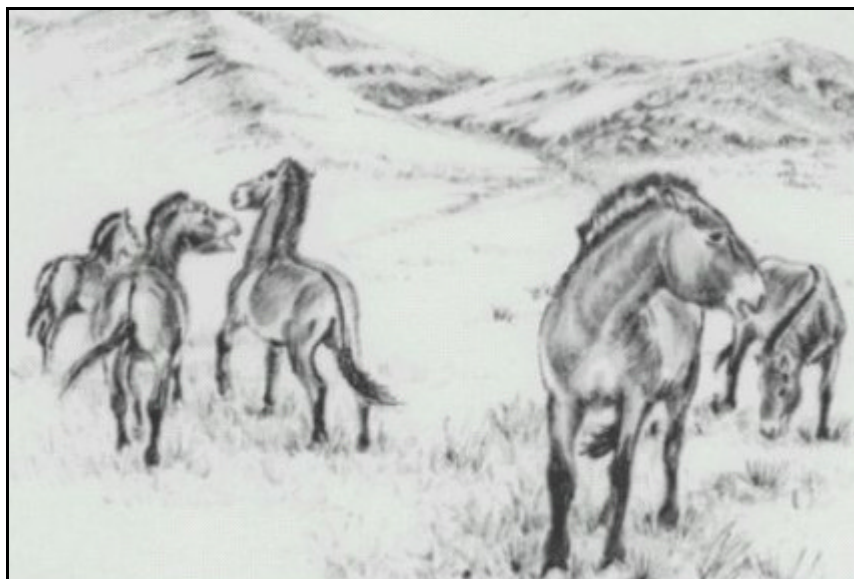
grateful to the zoos, as without their efforts there would no longer be any Przewalski horse at all on this earth!!

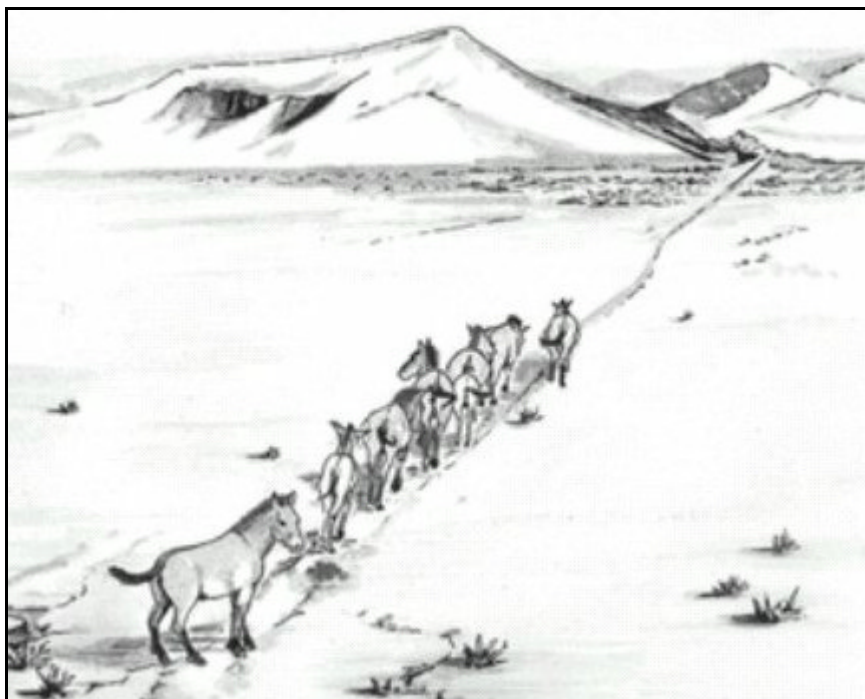
Nowadays (per 01.01.2000) some 1450 Przewalski-horses live world-wide in Zoos, semi-reserves including some 200 in the wild in Hustai National Park and in Tachyn Tal, the two reintroduction sites in Mongolia.

What happened to the Przewalski horses in the wild?

When colonel Przewalski and the brothers Grum Grshimailo re-discovered the Przewalski horses, around 1900, they could still be seen quite regularly in parts of Dzungaria and in the South West of Mongolia. During their travels they only saw groups of horses twice, so there can not have been that many. It can be assumed that up to the Second World War the number of Przewalski horses in the wild remained about the same, and their number was such that no one thought they might be threatened with extinction. After the Second World War their number was reduced quite drastically, and one can point to several reasons for this. One of them is the political tension existing between Russia and China around the 1950s. Then the border patrols were reinforced, and large army units entered the once deserted territories, where the Przewalski horses had their home. It is likely that many animals were then killed to provide extra food for the troops in these outlying districts.

Another reason has undoubtedly been the cultivation of more and more soil.





From time immemorial a large section of the Mongolian Peoples Republic's population consisted of nomads, herdsman who roamed the remote areas, sometimes with as much as thousands head of animals. In fierce winters hundreds of them died from hunger and cold, hence the need to provide supplies for the winter during the summer months. To achieve this extra hay was stored and the obvious place to do so was where wells were situated. The soil was more fertile there, and the cattle could slake their thirst. This caused the nomads to keep their cattle there longer, regardless of the fact that these wells were henceforth unreachable for the rather shy Przewalski horses, which were forced to withdraw to territories even less inhabitable, and with even less food and drink. Some important drinking places are situated at the border with China. Soldiers are there encamped with their livestock competing with the Przewalski horses for the last grazing grounds and water sources.

Between 1949 and 1960 various expeditions searched the areas where the Przewalski horses were usually to be found; in the beginning the conclusion was that their number was reduced quite a lot. Both the Mongolian and the Chinese authorities then prohibited the shooting of the Przewalski horses. Apart from the near impossibility of enforcing such a ban, it can be said that it was by then too late. Only rarely were Przewalski horses seen then; the expeditions sent out by the Mongolian University in 1967 observed a group of 5 near a well in the Altai Mountains. The one in 1968 discovered in that same

area, in a valley, a mare with a foal, elsewhere an adult stallion and then the next day another 2 young horses. These were the last Przewalski horses to be seen in the wild. Now and then there were rumours the Przewalski horses have been seen on the Chinese side of the Gobi desert, the last one came in 1980, but these haven't ever been confirmed. On the contrary, scientists of the Peking University do not believe these sightings are true, whilst it may well be that whatever was seen were Dziggetai's, which do still live in that area. Dziggetai's, which do still live in that area. Dziggetai's are an Asiatic wild ass species, resembling the Przewalski horses quite a bit in colouring and build, only they are somewhat smaller and less compact. At a great distance the difference would hardly be distinguishable. Another possibility is that the horses observed are crossings between a Przewalski stallion and Mongolian domestic mares. It is possible that Przewalski stallions mated the Mongolian mares when the nomads crossed the desert with their huge herds. The descendants of these matings would then certainly resemble the Przewalski horses. Within the twenty years several expeditions have crossed the Dzungarian Gobi and no sightings have been mentioned. In conclusion it can be stated that it is for sure now that there are no Przewalski horses in the wild anymore.

What has to be done to provide the Przewalski horse with its last chance?

It will by now be clear that the future for the Przewalski horses was far from a bright one in 1977 when the Foundation was founded. As certain as extinct in the wild only some 250 horses lived in captivity at that time spread all over the globe in more than 50 zoos and parks. Nothing can be done about its being extinct, yet for the ones in the zoos it is certainly possible to do something if a comprehensive and concentrated effort were to be made. Various problems had to be faced.

The first problem was that these horses are spread all over the world, over all the continents except in Africa, and it is therefore far from easy - and most expensive - to exchange Przewalski horses between the various zoos. Yet that is just the thing needed to counteract the inbreeding which has been described in the chapter about their life in captivity. Higher juvenile mortality and decreased life span were signs of a reduction in fitness in successive generations. The natural reservoir of genetic variability which constitutes the gene-pool of the species, had been diminished by bottlenecks in the breeding history and by management procedures such as breeding in pairs, or small groups, selection, inbreeding and over-employment of certain stallions.

The second problem was that there are quite a few Przewalski horses with genetic problems. One of them was underdeveloped ovaries, but also move-

ment problems. Przewalski horses show signs of weak hindquarters causing the horses to drag its rear legs. In the wild these would fall by the wayside, and die early, so would never get young, and the diseases would not spread. In the zoos these Przewalski horses did breed and the disease is therefor handed on. Since 1977 the Foundation has tried to stimulate international co-operation between breeders of Przewalski horses. Our data system, from which it is easy to extract all data on any one horse as well on a line of horses, was made available in order to analyse their breeding potential. In co-operation with Dr Jiri Volf, the previous keeper of the Przewalski horse studbook, a bulletin was sent twice a year to each zoo with data on the new born foals as well as additional information on inbreeding coefficients and founder representation, all indicated by various colour codes. With the bulletins we hoped to bring about a change of heart, resulting in the sense to use less interrelated Przewalski horses for breeding purposes and/or acquire horses from different genetic backgrounds. The Arnhem Study Conference on genetics and hereditary diseases of the Przewalski horses was organised in 1978 by our Foundation in co-operation with the Arnhem Zoo to exchange knowledge and stimulate further co-operation in research. This resulted in the setting up of a working group on diseases of the Przewalski horses. Unfortunately time was then not ready for international co-operation, in any case not in Europe. We are happy therefor that co-ordinated and co-operative breeding plans for the Przewalski horses in zoos got off the ground, such as the SSP (Species Survival Program) established in 1979 and the EEP (Europäisches Erhaltungszucht Programm) later, in 1986. It is not only important to maintain the genetic variability of these species by co-operative breeding plans, but they have to be kept in species specific environments where they can develop a normal social behaviour repertoire, where selective pressures can be more natural and the duration of captive breeding is minimised. The third problem is that the Przewalski horses mostly live in limited enclosures, so different from what they do in the wild. For a while that may be acceptable, although it is comparable with a prison where everything happens as the management wishes, and what is convenient for the keepers, far from what is the best for the animals. When we analyse the breeding history of the Przewalski horses in zoos and private parks the process of creeping domestication is evident. Under long-term captive conditions other phenotypic and behavioural genotypes came to expression due to unnatural selective pressures caused by captive environment, human selection and human interference in the normal patterns of mate choice and of dispersal of adults and young. These irreversible changes in the gene-pool cannot be nullified. Practically no other wild species has yet been kept in captivity for so many generations with almost no new genetic input. We expect that the Przewalski horse, when released into a presumed natural habitat, will suffer enormous losses. The selective pressure will even be stronger because many wolves will be around in Central Asia and Mongolia. These thoughts motivated us 20 years ago, to develop a plan to enlarge their chance for survival after release, by trying to increase their fitness and their adaptability to changed environments in semi-reserves before

planning their release into the wild. This plan was submitted to the World Conservation Union (IUCN), the most important scientific body in the world for conservation of nature, which acted jointly with the World Wildlife Fund. In the IUCN the plan has been examined in detail and ultimately officially agreed.

The plan

The Foundation for the Preservation and Protection of the Przewalski Horse (FPPPH) proposed a plan for reintroduction into a wild reserve based on the principle that Przewalski horses cannot be released directly from zoos into the wild. An intermediary phase in semi-reserves is essential. The necessity of establishing semi-reserves for the Przewalski horse was discussed, accepted and later endorsed by the Symposium for the preservation of Przewalski horses in Winchester. In the same year the Foundation Reserves for the Przewalski Horse came into being in the Netherlands, a joint enterprise between FPPPH and the WWF-Netherlands, aiming at the promotion of semi-reserves (IUCN/WWF 3077). In 1990 a sister Foundation "Deutsche Stiftung Urwildpferd" was established. Until now six large semi-wild reserves were established in the Netherlands and Germany. Together more than 70 Przewalski horses of a variety of bloodlines and little related with each other have been released divided in breeding groups or bachelor group. In the semi-reserves the Przewalski horses get the chance to adapt themselves to a semi-natural living in large territories varying in size from 30 to 250 ha (75 - 625 acres), where they have to search for their own food and can raise their offspring in more natural social relations. Although a minimum of human contact and interference is aimed at, the horses still need to be controlled and watched for behavioural or genetic problems. It is important however that selective pressures have to be made more natural, weak foals have to die and horses with genetic diseases are rejected. Only the best "quality" of Przewalski horses must get the chance to be selected for future release. This intermediate stage may probably have to last more than one generation, dependent of the results of running semi-wild before they can released in wild reserves. The Przewalski horses for the reserves were carefully selected on criteria of genetic background. All 13 founders are represented in the Przewalski horses, which were bought from zoos. A breeding program could be formulated by means of data from our own data system and computer programs for founder representation and inbreeding coefficients. Attempts are made to equalise contributions from the wild-caught founders and a minimisation of inbreeding. Another guideline of the project is that the Przewalski foals get the chance to grow up in stable social groups to learn a natural behaviour repertoire from adults and peer groups. The ultimate aim of breeding Przewalski horses in semi-reserves was establishing a reservoir of run wild Przewalski horses for reintroduction in the wild. In the period from 1980- 1990 efforts were made to look for suitable areas for release in accordance with the IUCN/SSC-guidelines for reintroduction.

What has been achieved so far?

So once the IUCN had accepted the project (IUCN/WWF NO 3077) as submitted by our Foundation, a new and separate organisation was established by the Netherlands W.W.F. jointly with our Foundation. This is called the "Foundation Reserves Przewalski Horse Netherlands", aiming at raising the funds to obtain the horses to be placed as the areas might become available.

The first suitable area was found in Naturepark Lelystad in the Flevopolder. In 1981 the 'Rijksdienst voor de Ysselmeerpolders' made some 45 ha available for the Przewalski horses. It is a varied terrain with gullies, hills, meadows, woodland, shrubs, sandy patches and watering-places.

There is ample space for a family group consisting of a stallion, a number of mares and their foals and juveniles. The adult horses are scarcely related to one another. Strong, healthy foals were born here each year. Many descendants from this breeding group found their way to Mongolia.

In January 1983 the Dutch Forestry Commission acquired a 265 ha big totally fenced-in area, Noorderheide on the Veluwe. The area consists for the most part of broad-leaved trees, conifers and heather. In this beautiful entourage another family group was released. Many foals grew up on the purple heather. Meanwhile the entire Noorderheide group has been brought over to Mongolia. There are no more Przewalski horses at Noorderheide.



The third semi-reserve was the Ooijpolder near Nijmegen. This nature reserve covers about 30 ha and is owned by the Forestry Commission. In this varied semi-reserve we released the mares that were born in Lelystad and Noorderheide. After the introduction of a genetically unrelated stallion the first foals were born in 1989. From 1994 onward many of this group's progeny was reintroduced in Mongolia. Since December 1998 there are no more Przewalski horses in the Ooijpolder.

Since the 1980s the number of stallions born in the semi-reserves had increased considerably. When they have reached the age of two, their father the leader of the group, no longer tolerates them in the group. In the wild he will chase them away. It was time for an all-male group.



Luckily, such an all-male group could be established at the Goudplaat (owned by the Forestry Commission), a 40 ha large peninsula in Zeeland. Here the two-year old stallions, born in the other semi-reserves, could live and learn. It could be seen as a boarding school for young stallions. Through play and mock fighting they had the chance to grow up into sturdy fellows.

In April 1990 a fifth 80 ha large semi-reserve was established in nature reserve Sprakel (near Meppen), just over the Dutch-German border. The breeding was successful. Many horses born in this group were shipped to Hustai National Park (1998 and 2000). Since the final transport in 2000 the Sprakel group consists only of Przewalski stallions.

In 1995 the National Park Uckermärkische Seen (East Germany) offered a fenced in area of some 60 ha for the Przewalski horses. In this beautiful semi-reserve Klosterwalde with parts of wood in between the hilly pastures a lake



is situated where a pair of cranes nests. In 1996 the first foal was born in Klosterwalde. This young stallion will be transported to Mongolia in 2000.

In 1995 a sixth semi-reserve was established near Templin to the north-east of Berlin. It has a beautiful varied vegetation. A young mare that was born here, was shipped to Hustai National Park with the final transport of 2000.

Now that there is enough progeny of the semi-reserves living in Hustai National Park, the Foundation has reached its goal. The breeding activities in the semi-reserves were discontinued. The ownership of the Przewalski horses at Lelystad was handed over to Flevolandschap. The Foundation only takes care of the Przewalski stallions at the Goudplaat.

Zoo-bred Przewalski horses are mostly confined in small holding facilities without vegetation, habituated to humans from which they get hay and palleted food once or twice a day. Under these conditions the behaviour repertoire is restricted. In the semi-reserves, the Przewalski horses got the chance to expand their behaviour repertoire considerably. During day to day activities, Przewalski horses tend to move along specific trails through their territory in search of water, food, shelter and resting-places. They mostly carry out maintenance behaviour from day to day at nearly the same time and place within the home range. There are however seasonal changes in the abundance and quality of food, insects and the need for shelter, which has its influence on their movements and the habitat utilisation of the horses.

We have the strong impression that young Przewalski horses developed a much higher responsiveness to changes in their biological and physical environment in the semi-reserves through the variety of opportunities for percep-

tual and locomotion stimulation. They will need this adapt perception to facilitate survival after release into the wild. The type as well as the quantity of food for the Przewalski horses in zoos is kept mostly the same during all seasons. Their condition is kept the same in summer or winter. The change in life from confinement to free ranging has effected the Przewalski horses in many ways and has to be seen as a gradual process. The main activity of the Przewalski horses in the semi- reserves is feeding, it takes them many hours a day as well as at night. During the seasons the nutrient value of the food varies greatly and in winter the protein content is much lower, they have to eat more to make up for reduced quality. It took the zoo-bred animals some years before they could maintain themselves on a high fibre, low protein diet in winter without extra food supply. After some years the horses were better able to build up sufficient fat in summer for the next winter.

Like feral horses, the nucleus of the harem of Przewalski horses in the semi-reserves appeared to be the adult mares with their offspring of the past 2-3 years. Social attachments between individual mares and between juveniles were evident at various levels.

The stallion's role is much more differentiated in the semi-reserves and not restricted to siring mares. The stallion takes the leadership role if intruders enter his territory. He always takes up a position between his band and the intruder(s). Herding was seen towards a mare, which could not leave her weak wounded foal. He pressed her to follow the group, which had moved away out of sight. The harem stallions were very watchful and are often seen patrolling along the fence in case of disturbances. We had the impression that the Przewalski horses born in the semi- reserves have become much more vigilant. Attachment and social facilitation do influence that. Vigilance is one of the basic characteristics associated with predator avoidance together with grouping, male defence of harems and flight. Predator pressure of wolves is strong for the Przewalski horses when they have been released into reserves in Middle Asia and Mongolia.

The reintroduction into Mongolia

Many foals were born in the semi-reserves. Within ten years the Przewalski horses numbered more than seventy. It was necessary to look for suitable areas for reintroduction. In pre-historic times the Przewalski horses grazed on the endless steppes which extended from the present Manchuria (China) to the South of France. The wild horse once was an integral part of the steppe ecosystem, a key species together with other large herbivores such as wild sheep, wild goats and antelopes. The present overabundant domestic horses, sheep, goats and cows have gradually replaced their wild ancestors on the steppes. In 1986 the co-operation started between the Foundation Reserves for the Przewalski Horse (hereafter-called FRPH) and the Institute of Evolutionary Morphology and Ecology of the Academy of Sciences in Moscow.

Within the framework of the Joint Russian-Mongolian Biological Expeditions some 15 areas have been thoroughly investigated as possible reserve area for reintroduction of this unique wild horse in Central Asia and Mongolia. Representatives of the FRPH were invited to visit several areas in the Ukraine, Central Asia and Mongolia. It then became very clear that rather undisturbed steppes are among the most threatened biotopes of Central Asia.

After visiting three areas in Mongolia, the mountain steppe of Hustain Nuruu, 120-km southwest of Ulaanbaatar, was selected as most suitable area for re-establishment of a wild population of Przewalski horses. Hustain Nuruu is a well-known area first protected as a hunting ground for the last Khan afterwards as a pasture reserve for the local people. Hustain Nuruu is a mountainous area with a typical steppe vegetation, shrubland and some small forest patches cover about 5% of the area. Several natural water springs makes the area a favourite spot for migrating herbivores like the marals (red deer), the Mongolian gazelles, the Ibex, and even Argali sheep. Other typical steppe animals like susliks and bobac marmots are very abundant. Different predators inhabit the reserve permanently as well like wolves, foxes and some lynx and wild cats (manul).

The climate is continental. In the short summer temperatures can rise till 40 degrees Celsius. In the long winter, temperatures can drop till -40 degrees Celsius. It is a dry climate. Over 70% of the rain falls during summer. Moderate snow depth with strong winds, mostly leaves the grass bare without snow, offering the large grazers easily accessible food in winter. The river Tuul along the southern border surrounds the area. In the north some agricultural fields border the reserve. Hustain Nuruu has never had permanent settlements for people. It was used as pasture reserve for the nomads belonging to the three surrounding villages some 30-50 km outside the reserve area. The people of Mongolia are very keen on the return of this indigenous wild grazer, or "takh" (wild horse or Przewalski horse) to Mongolia. When the first transport of 16 wild horses arrived at the airfield at Ulaanbaatar on July 5th, 1992, hundreds of people were waiting to welcome them. For the old herdsmen it was the return of a well-known part of the past, for the younger people it is the materialisation of the mythical horse of their cultural history. MACNE, once a state organisation and at present a non-governmental organisation could take advantage of the large symbolic value of the takhi in order to gain the Mongolian people's goodwill for the conservation of the habitat of the takhi as well. Furthermore it is important that the Hustain Nuruu area is well known, easy accessible and at short distance of Ulaanbaatar.

Due to these advantageous factors Hustain Nuruu was selected as reintroduction area. In 1990 an agreement of co-operation was signed between the Mongolian Association for Conservation of Nature and Environment (hereafter called MACNE), the FRPH and the governor of the Central Aimak (province), the owner of the reserve Hustain Nuruu and some other organisations. The



Mongolian Government soon thereafter (March 2nd, 1991) endorsed the project.

In November 1993 the Mongolian government endorsed the official status of Hustain Nuruu as a reserve. In spring 1994 the rules and measures to protect its fauna and flora were accepted by parliament. In 1998 the status of the reserve has been upgraded to National park. Livestock and herdsman had to leave the 50,000 ha large area gradually, hunting and poaching are forbidden.

It is a myth to believe that nature is separate from people and that nature is diminished whenever people try to live among it.

Although Mongolia is the seventh largest country in Asia and has with its 2.3 million inhabitants the lowest population density in this continent, virtually no habitable part is "empty" or without livestock. Protected areas therefore require active management, especially important in the case of the Przewalski horses. Crossbreeding with domestic horses has to be prevented. Reintroductions and setting up effective park management are generally complex, long-term and expensive operations. Thus, the level of funding is very important for success. The training of the Mongolian reserve staff for effective protection, management, research and the starting up expenses (staff establishment, radio-communication, the installation of monitoring facilities, jeeps, equipment etc.) are supported financially by the Directorate General for International Co-operation (DGIS) of the Dutch Ministry of Foreign Affairs. The sustainable conservation of a population of Przewalski horses is not possible without conserving the biodiversity of the steppe ecosystem of Hustain Nuruu. The Hustain Nuruu project consists of two separate but complementary projects in the same area. The first project, the reintroduction program for

Przewalski horses, aimed at the establishment of a free ranging, viable population in the Hustain Nuruu reserve, started in 1992 and lasted 10 years. This project is fully dependent of subsidies from private funds. It is executed within the framework of the second project, the Hustain Nuruu Steppe Reserve Project, a Mongolian-Dutch project aiming at restoring and conserving the biodiversity of the area. It is led by the Foundation Reserves for the Przewalski horse (FRPH, the Netherlands) and executed by the Mongolian Association for the Conservation of Nature and Environment (MACNE, Mongolia).

The present situation

It is really heart warming to know that at this moment more than 150 Przewalski horses live in total freedom inside Hustai National Park. The realisation of the reintroduction programme's first goal seems to be a fact. However a group of 150 is still a very vulnerable small one. The Foundation will be completely satisfied if there are about 300 to 500 Przewalski horses in Hustai National Park.

Apart from that, the future of the free living Przewalski horses can only fully be guaranteed with a minimum of three different populations in the wild each consisting of 300 to 500 animals. Therefore, we hope that there will be more attempts to reintroduce Przewalski horses in Mongolia.

The sustainable preservation of the Przewalski horses in Hustai National Park will of course remain the focus of attention for the Foundation. Very essential in this is the protection of the Park. At present a well-trained and dedicated staff of rangers and wardens takes care that Mongolian domestic horses stay away from the Przewalski horses to prevent crossbreeding. In order to guarantee the sustainable protection of Hustai National Park the Foundation will



continue her financial support.

A major role will be reserved for scientific research. It is important to stay informed about the developments within the Przewalski population, to gain knowledge about the carrying capacity of the area and whether the Przewalski horses will be able to withstand the pressure of the rather large presentation of wolves inside Hustai National Park. These are only a fraction of the questions and problems that needs to be studied.

It is also very important that Hustai National Park enjoys much international recognition.

One of the biggest successes in recent years was the recognition by UNESCO of Hustai National Park as a 'Man and Biosphere Reserve.' The Park is now part of an international network of nature parks. Communication and exchange of experience with others is very important for the future of the Park.

At the moment (01.01.2003) some 150 Przewalski horses live on the steppe of Hustai Nuruu. The last groups were released from their acclimatisation enclosures in 2002. The results of the first five years of the reintroduction program are described separately.

You can become a subscriber of the Foundation and will receive the newsletter Przewalski Horse, published annually for subscribers.

Milestones in the recent history of the Przewalski horses

1879 Colonel Przewalski discovers some wild horses in Southwest Mongolia; they are named after him.

1899 Capture of the first wild Przewalski foals.

1905 First foal, a colt, to be born in captivity in Askania Nova is given the name Myska.

1932 In Askania Nova the hundredth foal to be born in captivity dies the same day.

1945 The first foal to be born after the Second World War sees the light in Munich and is named Berta.

1947 Capture of the mare Orlica III, she is the last Przewalski horse to be caught in the wild.

1959 Dr. Erna Mohr publishes the first studbook for the Przewalski horses.

1960 Dr. Jiri Volf of the Prague zoo continues keeping the studbook.

1962 The 250th foal, a colt, is born in Paris and called Pacifique.

1968 The last time Przewalski horses have been seen in the wild in Mongolia.

1973 The 500th foal, a colt, is born in Catskill, USA, and named Rolex.

1977 The Foundation for the Preservation and Protection of the Przewalski Horse was established in Rotterdam; its first task was to set up a card index system comprising all data of descent, bloodlines and inbreeding of all horses back to 1900.

1980 The Foundation Reserves Przewalski Horse was established in the Netherlands. The stallion Rondo arrives in the Netherlands; he is the first Przewalski horse destined for the semi-reserves.

1982 The 1000th Przewalski horse born in Leipzig; he is named Rico.

1984 The first Przewalski foal born in Naturepark Lelystad; he is named Davaa.

1987 The 1500th Przewalski foal was born in Midway Manor (GB). Her name was Geraldina.

1989 Usch, the first foal is born in the Ooij, both his Przewalski parents were also born in the semi-reserves.

1990 The Foundation for the Preservation and Protection of the Przewalski Horse visits Hustain Nuruu in Mongolia.

1992 The first transport of 8 Przewalski horses from the Dutch semi-reserves and 8 from Askania Nova (the Ukraine) to Mongolia took place. On Friday, June 5th 1992, on 19.00 o'clock local time the Przewalski horses landed at the airport of Ulaanbaatar. The next day they were released into their acclimatization areas.

1993 The first foal called Manlaj, was born in its homeland Mongolia after extinction of the species in the wild around 1968.

1994 At the beginning of June the first harems from the stallions Khaan and Patron passed the last fence in their life. They were released from the acclimatisation enclosures into the steppe.

The second group of 16 Przewalski horses from the semi-reserves arrives in

Mongolia.

1996 The third group of 16 Przewalski horses from the Netherlands arrives in Mongolia. The whole Noorderheide group is reintroduced at Hustai Nuruu.

1997 Hustai Nuruu Steppe Reserve becomes a National Park and from now on it is called: Hustai National Park

1998 The fourth transport. No less than 20 Przewalski horses are shipped to Hustai National Park. All adults from the Ooijpolder now live in Hustai National Park.

2000 The final transport. Again three groups arrive in Hustai National Park. The ownership of the Przewalski horses in Naturepark Lelystad is being transferred to Flevolandschap. The ownership of the Przewalski horses living in Klosterwalde (D) is handed over to the Ueckermärkische Seenlandschaft. The Mongolian government defines the borders of the buffer zone area around Hustai National Park: 462,000 ha.

2002 The final harems are released from the fenced-in acclimatization areas. Thirteen groups now freely roam in Hustai National Park.

In December 2002 Hustai National Park gets the important status of UNESCO 'Man and Biosphere Reserve'

2003 More than 150 Przewalski horses, distributed over 13 harems and a casual group consisting of bachelor stallions live in the wild at Hustai National Park.

Hustai National Park is being transformed into an independent NGO "Hustai National Park Trust" according to Mongolian legislation. The Mongolian Ministry of Nature and Environment, the Mongolian Association for Conservation of Nature and Environment, the Buffer Zone Council and the Foundation Reserves Przewalski Horse choose the members of its Board.



