= Campbell 's dwarf hamster =

Campbell 's dwarf hamster (Phodopus campbelli) is a species of hamster in the genus Phodopus . It was given its common name by Oldfield Thomas in honour of W.C. Campbell , who collected the first specimen in Mongolia on July 1 , 1902 . It is distinguished from the closely related Djungarian hamster as it has smaller ears and no dark fur on its crown . Campbell 's dwarf hamster typically has a narrow dorsal stripe compared to the Djungarian hamster and grey fur on the stomach .

In the wild , the breeding season for Campbell 's dwarf hamster varies by location . For example , the breeding season begins towards the middle of April in Tuva and towards the end of April in Mongolia . However , in captivity , there is no fixed breeding season and they can breed frequently throughout the year . Females are usually sexually mature at two months of age and the gestation period is typically 20 days . Campbell 's dwarf hamster is crepuscular , along with all species of Phodopus and is active throughout the year . Campbell 's dwarf hamsters are omnivores , and so feed on both plant and insect material . Campbell 's dwarf hamster inhabits burrows with four to six horizontal and vertical tunnels in the steppes and semi deserts of central Asia , the Altai mountains , autonomous areas of Tuva and the Hebei province in northeastern China .

This hamster is listed as of Least Concern by the International Union for the Conservation of Nature (IUCN) . It is native to China , Kazakhstan , Mongolia and Russian Federation .

= = Taxonomy and naming = =

The binomial name of Campbell 's dwarf hamster is Phodopus campbelli . This species is the type species of Phodopus , and is named after W. C. Campbell , who first described it on July 1 , 1902 , in Inner Mongolia . The exact location was given as " Shaborte " (a Mongolian word for a dry lake) and so the exact co @-@ ordinates are not clear . Thomas described the type specimen in 1905 as Cricetulus campbelli .

Synonyms for this species are Phodopus crepidatus and Phodopus tuvinicus . Common names have been applied to Campbell 's dwarf hamster , including the striped hairy @-@ footed hamster , the Djungarian hamster , the Siberian hamster , and Campbell 's hamster . Campbell 's dwarf hamster is commonly confused with the Djungarian hamster (Phodopus sungorus) due to some of the common names , such as the " Siberian hamster " also being used to describe the Djungarian hamster .

= = = Subspecies = = =

American biologist Ned Hollister described a subspecies in 1912 :
P. c. crepidatus : Found in the Altai Mountains of Siberia

= = Physical description = =

A typical wild Campbell 's dwarf hamster is 13 @.@ 5 mm (0 @.@ 53 in) long , with a tail length of 5 mm (0 @.@ 20 in) . In captivity , they are proportionally larger , as commercial pet food and fruits provide more nutrition than food found commonly in the wild . The lips and cheeks have white fur and the rest of the fur around the face can be either grey or brown . A dark and narrow dorsal stripe runs along the center of the back from the nape of the neck to about 2 @.@ 5 cm (0 @.@ 98 in) above the tail . The surface of the hands and feet are white to ensure the animal stays warm in colder climates in countries
such as Mongolia .

In both the wild and captivity , Campbell 's dwarf hamsters scent @-@ mark around their territories using Harderian glands , skin glands located behind the ears . They use urine and feces for communication .

Campbell 's dwarf hamster is distinguished from the similar looking Djungarian hamster by its smaller ears and no dark patch on the crown of its head , in certain colourations . The dorsal stripe

of Campbell 's dwarf hamster is narrower , shorter , and darker than that of the Djungarian hamster , and the fur on the stomach of Campbell 's dwarf hamster is grey , but it is white on the Djungarian hamster . Campbell 's dwarf hamster does not turn white in the winter and has a grey tint to its fur . It has a smaller interorbital breadth , but has a larger auditory bulla . Campbell 's dwarf hamster is much less tolerant to lower temperatures than the Djungarian hamster . A laboratory experiment showed Campbell 's dwarf hamster can resist temperatures as low as ? 31 @.@ 8 ° C (? 25 @.@ 2 ° F) , where the Djungarian hamster can withstand temperatures as low as ? 44 @.@ 7 ° C (? 48 @.@ 5 ° F) . Campbell 's dwarf hamster reacts to lower temperatures by constantly exercising and tries to find a sheltered location , unlike the Djungarian hamster , which curls up and relies on its autonomic thermoregulation .

Campbell 's dwarf hamster has cheek pouches , which are an extension of the mouth , extending from the mouth all the way to the rear legs . Food is transferred into these pouches through the diastema . The inside of the pouch contains a large number of folds of dermal papillae . When the pouch is full , it extends and becomes part of the structure of the skin . By 11 days of age , the cheek pouches are fully grown and can carry objects up to the size of a sunflower seed . When the cheek pouches become full , they extend back to the shoulder blades , which restrict movement .

Campbell 's dwarf hamster is prone to genetic abnormalities in the metabolism of carbohydrates and lipids . They can develop tumours of the mammary glands , lungs , uterus , and ovaries . Tumours can also develop if the animal is exposed to chemical carcinogens . Due to having slow locomotion and an insignificant response to bright lights and humans , as well as having a low population density , field studies allow scientists to study entire populations in the wild .

= = = Lifespan = = =

In a laboratory experiment , the average lifespan for a male Campbell 's dwarf hamster in captivity was 278 days and for a female was 356 days . In a different experiment , hamsters kept in captivity born in the summer lived for an average of 2 @.@ 0 ? 2 @.@ 5 years . Young hamsters provided widely varied diets early in life are less likely to suffer digestive problems as they mature , but this is not always possible in the wild due to lack of food ; this causes the life expectancy of captive hamsters to be greater than that of wild hamsters .

= = Diet = =

As omnivores , Campbell 's dwarf hamsters eat a variety of different foods . A balanced diet for a hamster consists of 16 @-@ 24 % protein , 60 @-@ 65 % carbohydrates , and 5 ? 7 % fat , with constant access to fresh water . In their natural habitats , dwarf hamsters feed almost exclusively on plant materials . In captivity , Campbell 's dwarf hamsters can get the required nutrition from commercially available food designed specifically for hamsters , which typically contain a mix of dry grains , nuts , and seeds that may be fortified with vitamins and minerals . An excess of any one particular seed or nut can lead to digestive problems , obesity , and forms nutritional deficiency .

In addition to a commercially prepared seed mix , a balanced diet for a Campbell 's dwarf hamster in captivity includes a regulated variety of fresh vegetables and fruits . Dark greens such as kale are rich in vitamins and minerals . Wild vegetables such as yarrow , chickweed , and dandelion and raspberry leaves , are also good sources of protein that helps prevent obesity .

A hamster in captivity can occasionally eat mealworms or earthworms , which have high protein contents . Boiled egg whites and small pieces of clean , cooked chicken are also sources of extra protein . They can also eat wheat grain , sunflower seeds , and locusts . The teeth of Campbell 's dwarf hamster never stop growing . Like all rodents , they must therefore gnaw regularly to keep their incisors from growing into the skin of the mouth and causing pain and irritation . Smooth , young wood from nontoxic trees , such as apple and willow , is readily used by most species in the genus . Most pet stores sell nontoxic wooden chews designed for rodents in captivity .

Certain food items commonly consumed by humans are toxic to hamsters and should be avoided completely in captivity . After they are completely weaned at around 21 days of age , Campbell 's

dwarf hamsters are lactose intolerant and cannot digest milk . Onions and garlic are very dangerous and can cause severe haemolytic anemia . Leafy green vegetables such as cabbage and celery contain a large amount of water , so can have severe laxative effects on small animals . Grapes and raisins may contribute to acute renal failure , due to their high level of acidity . Chocolate and other sticky foods such peanut butter may solidify in a hamster 's cheek pouches and lead to infections , which can lead to death .

In the wild , the diets of Campbell 's dwarf hamsters vary across the population range . A total of 51 different species of plants were identified to be consumed by the Transbaikalia population , the most common being Stipa capillata and species of Allium . However , in Tuva , only 10 species of plant were identified to be consumed by the population , the most common being Potentilla . Campbell 's dwarf hamster is a natural predator of burrowing worms and grubs .

= = Breeding = =

In Tuva , the breeding season of Campbell 's dwarf hamster begins in April , and in Mongolia , it begins in at the end of April or the beginning of May . However , in all distribution ranges , it ends in late September or early October . In captivity , Campbell 's dwarf hamsters breed throughout the year , with no fixed breeding season , but a large number are born in the summer months . In the wild , three to four litters are produced each year , with an average of eight offspring per litter . In captivity , females can have between one and 18 litters per year , with one to nine offspring per litter . In captivity , the gestation period for Campbell 's dwarf hamster is between 18 and 20 days , and the shortest gestation period recorded for a captive female was 13 days . The male hamster is likely to assist the female during birth . The male may pull the offspring from the birth canal , clean them , or collect food for the mother and offspring .

When the offspring are born , they are hairless and have a body mass of approximately 1 @.@ 5 g (0 @.@ 053 oz) . Incisors and claws are already formed , but the digits , eyes , and pinnae are closed and cannot be used . The rate at which the young develop differs depending on the distribution range . However , the differences are usually no longer than a day . In Tuva , the pinnae open on the first day of birth and are completely open after three days of development . However , in Mongolia , the same process occurs between two and four days of development . Fur first grows on the crown , back , and abdomen . The young are usually have a full coat of fur after seven days of development . Offspring born in captivity have a shorter development time than those born in the wild . Specifically , the growth and development of the head and body , tail , hind feet , and pinnae can be up to a day sooner than those found in the wild . After 28 days of development in captivity , the young are already around half the mass of their parents .

In captivity , females become sexually mature at two months of age . The ovarian follicle forms about 16 days prior to the birth of the offspring . After mating , female hamsters typically have larger uteri , ovaries , and adrenal glands compared to females which live alone , with other females or those that have not mated . The females and males may fight each other when getting to know their partner . Also , these females have a shorter gestation period , around four to five days .

= = = Hybrids = = =

In captivity , only Campbell 's dwarf hamsters and Djungarian hamsters are able to interbreed and produce live offspring or hybrids . Although hybrids make suitable pets , the breeding of hybrids and cloning can cause health problems , due to inherited diseases . Because genetic information can be very similar , genetic health problems or vulnerabilities can easily be inherited by the offspring . The widespread breeding and distribution of hybrids could threaten the existence of both pure species and subspecies of the ecosystem . This could ultimately lead to the extinction of the subspecies . Each litter becomes smaller as more generations are produced and the young commonly begin to inherit many congenital problems .

= = Habitat = =

Campbell 's dwarf hamsters inhabit burrows in the steppes and semideserts of central Asia , the Altai mountains , autonomous areas of Tuva , and the Hebei province in northeastern China . A burrow can contain four to six horizontal and vertical tunnels . The tunnels leading to the nesting area can be as deep as 1 m (3 ft 3 in) below the ground , but are usually 20 ? 30 cm (7 @.@ 9 ? 11 @.@ 8 in) deep . The burrows are lined with either dry grass or sheep 's wool . They may sometimes share burrows with Daurian pikas , but only in the steppes and semideserts of northern Manchuria . In parts of Mongolia , the hamsters may also share burrows with species of Meriones to save them from digging their own . In Tuva , Campbell 's dwarf hamsters have been found living with other hamsters , such as the Chinese striped hamster , the Roborovski hamster , and the long @-@ tailed dwarf hamster . The diets of the three types of hamsters are different to avoid fighting over the same type of food , which is why they live together .

Campbell 's dwarf hamsters may also live near areas of human civilization . In Mongolia , they may be found in yurts to keep warm during the winter , as they do not have thermoregulation like the Djungarian hamster . They have five main predators : the Eurasian eagle owl , the steppe eagle , the corsac fox , the common kestrel , and the saker falcon . All distribution areas have more females than males , because males are at higher risk from predators , as they cannot move as quickly .

= = Status and conservation = =

This hamster is listed as of Least Concern by the International Union for the Conservation of Nature (IUCN) . The population and distribution size are large , and no major or widespread threats to the species are known . However , the increasing number of livestock in the areas of distribution , such as the steppes of central Asia , some burrows are at a small risk of being destroyed . In arid areas of distribution , the reduction in the amount of water sources is also a minor concern . These hamsters are conserved in protected areas .