

# The Development of Kittens and Their Relationship with Their Mother and Siblings

The kitten's life during the first months will have a great impact on how it will function as an adult cat. This includes its experiences in the environment in which it lives, and its relationship with its mother, littermates and people. Therefore, the cat breeder has a great responsibility to ensure the kitten has a good start in life. The new owner must then continue to offer suitable experiences for the kitten's further development. For the cat to live in harmony with people, without behaviour problems, it is important to know how experiences of handling, socialization and play affect the kitten's future behaviour. In this chapter we examine how kittens develop. But we must begin before their birth; without heat, mating and a successful foetal period, there will be no kittens.

## Heat, Mating and Gestation

### Fertility of the cat

Female cats can be very fertile. A breeding female, called a queen, can potentially produce four litters a year, though two litters is more common. After a smaller first litter, three to five kittens per litter is typical up to six years of age, with a slow decline at higher ages. Litter sizes tend to be highest in short-haired, so-called oriental breeds such as the Burmese and Siamese, with one Burmese reported to have given birth to 15 liveborn kittens and four stillborn. Queens are most fertile from 1.5 to 7 years of age, but can have kittens until 8–10 years old, and occasionally after this. One mother even managed to produce two kittens when she was 30 years old. Queens can also become pregnant while nursing an existing litter, especially if the litter is small. All this goes to show that one queen has the potential to produce many kittens during her lifetime.

It is physiologically demanding for a queen to have frequent litters, especially if the litters are large, so best for her health to avoid more than two litters per year. To prevent unwanted pregnancies, contraceptive pills can be prescribed by a vet. However, these should not be given while a queen is nursing offspring, as they may reduce milk production or otherwise affect the kittens. The only solution then is to keep the queen away from males.

We must also consider that when more kittens are born than there are homes to take them, cat over-population quickly becomes a problem. Therefore, if we cannot be sure of finding good homes for all the kittens, a queen should not be allowed to have kittens. To ensure that she cannot

become pregnant, it is safest to get her spayed. Owners of male cats must also take their share of responsibility in preventing the birth of unwanted kittens, not least among homeless female cats, by getting the males castrated.

## Heat

Heat, or oestrus, means that a female is receptive to being mated (Fig. 2.1). Female kittens usually have their first heat at 6–10 months of age, but some come into heat by 4–5 months. Male (tom) cats usually reach puberty at 6–12 months but, like females, some may start breeding as early as four months of age. Except for the short-haired oriental breeds (e.g. Burmese), pedigree breeds typically become sexually mature a little later than non-pedigree cats. A general rule is that once a female reaches a weight of about 2.3–2.5 kg, we must expect her to come into heat. She will then cycle at roughly two-to three-week intervals, with the heat typically lasting 4–8 days.

Cats are considered seasonal breeders, being most likely to produce kittens during the spring and summer. If a queen gets less than 12 hours of daylight, she usually does not come into heat.

During long winter nights, her brain produces enough melatonin to suppress her cycles. But as the days get longer with the approach of spring, both males and females become restless indicating that the breeding season (or rut as it is termed for males) is on its way. Indoor cats can come into heat throughout the year if they get at least 12–14 hours of bright light. A heat is also more likely if there are fertile tomcats around, or other queens in heat. When living in social groups, queens can have synchronized heats and, if they then mate and become pregnant, their litters will arrive around the same time.

Normal heat cannot be mistaken. The queen shows clearly changed behaviour both towards the owner and towards male cats. She gets very cuddlesome, frequently brushing her body against our legs and the furniture. She rolls around on the floor and miaows loudly and deeply, attracting visits by the tomcats in the neighbourhood. She often urinates and may mark vertical structures in her territory by spraying urine on them. Unfortunately, this can include us and the furniture. Her urine contains chemical signals, called pheromones, which attract toms. She may suddenly become aggressive if someone pats her on the back. If she reacts similarly to a tom, this tells him that she is not yet willing to be mated. Eventually, she will stand with stiff legs and her tail upright or held to the side, treading with her front paws. This typically occurs about three to four days into the heat period and shows that she is becoming more receptive. If there is a tom nearby, her enticing heat behaviour may be even more pronounced.

However, if a female is young or has a low rank in her social group, she may have what is known as a silent heat, not showing the typical signs of being in heat. While it is not obvious that she is in heat, she can nevertheless still copulate and become pregnant.

## Mating

The tomcat starts his courtship by sniffing the queen's head and hindquarters. If she is receptive, she will lie down on her chest, lift her pelvis and swing her tail aside. This posture, called lordosis, is an invitation to the tom to mate with her. He mounts her quickly and holds her by biting the

scruff of her neck. The copulation itself may last for just a few seconds, and when the tom withdraws his penis, the female yowls. She then rushes forward or rapidly swings around towards the tom and hisses or snarls at him. The male pulls back quickly, while the female rolls around on the ground for a few minutes, licks her genitals and miaows. Mating usually occurs multiple times, and the male therefore waits nearby until the female is receptive to another mating – often after approximately 20 minutes.

It is possible for a queen to ovulate spontaneously without mating, especially if a tom is present but prevented from mating. However, most ovulations are triggered by copulation, with ovulation occurring around 24–48 hours later. This is called induced ovulation. The tom's penis is covered with tiny backward-pointing spines that play a role in stimulating ovulation (Fig. 2.2). It is the bit of pain the queen experiences as he withdraws that causes her to hiss at him. Multiple copulations increase the likelihood of ovulation. If there are other toms nearby, they can also mate with the queen. The consequence is that, in a single litter, different kittens can have different fathers. However, queens can be somewhat choosy about which males they will accept. They also show inbreeding avoidance, meaning that they are more likely to reject the advances of a closely related male if other males are available.

## Gestation period

The gestation period of cats lasts about 63–66 days on average, but it may vary from about 52 to 71 days. Siamese cats tend to have a relatively long pregnancy. In general, gestation lengths and birthweights are lower in cats having larger litters. If you suspect that your cat is pregnant, a vet can check for this by examining the stomach (abdominal palpitation), or by ultrasound or X-ray. By about five weeks into the pregnancy, you will notice that your cat is getting a typical hanging belly. Pregnant cats can be as active as before, and they can catch mice. In the wild, a feral cat will be even more dependent on her hunting skills as her pregnancy proceeds and she needs more food. Only near the end of pregnancy does the queen become less active. She sleeps a lot and may hide away in places where she won't be disturbed.

# Maternal Behaviour

## Birthing den

When nearing term, the queen will start looking for a suitable place to give birth. She favours a dark and safe place, separate from the activities of people and other animals. It is not uncommon for her to find a place inside a closet, well hidden behind shoes and clothes – or under the duvet, as Bjarne experienced once. This is not so desirable for the cat owner, so it is better to offer her a birthing den that both parties can accept. It should be available a couple of weeks before the expected delivery, as the queen prefers to have this decided in good time.

The birthing den does not need to be a complicated construction, but must be a good hiding-place, well sheltered and with a roof to make it dark and secure. The mother seeks a place that she perceives to be safe from potential predators. Therefore, the opening of the den should be small

enough for only the cat to enter, and not larger animals such as dogs. The cat owner can make a simple nest using a cardboard box of about A3 size (about 30 x 40 cm). Cut out a round opening approximately 15 cm in diameter near one end of the long wall and 5 cm up from the floor. Add newspaper to the bottom to capture the birth fluids, and place clean towels on top of the newspapers. Remember to close the lid, which should be set so it can easily be opened without creating a lot of disturbance. Put the box in a quiet place such as a bedroom or spare room where the door is always open. If the queen does not examine the box you offer, try putting it somewhere else. Keep all your cabinet doors and drawers closed if you do not want them to become the chosen nest site!

## Behaviour around parturition

During the final days before parturition, the queen's behaviour will change. If she has not yet found a secluded den, she will look for one in all sorts of unthinkable places. She may become more aggressive towards both people and animals with whom she does not feel completely comfortable, especially dogs. But towards people with whom she is socially bonded, she can become more affectionate and social. Through this behaviour, she distances herself from potential threats to her offspring while remaining open to those she trusts who, under natural conditions, are close relatives such as sisters or her own mother.

When the delivery is underway, avoid disturbing the queen. Cats have the instinctive ability to give birth by themselves. Especially if your cat has a nervous disposition, disturbance may interfere with the natural behavioural sequences involved in giving birth. These include cleaning the newborns, biting through the umbilical cords, providing the first milk (colostrum) and bonding with the kittens. It is important that all the kittens get colostrum within the first hours after birth as it is rich in antibodies needed to protect them from disease. Nevertheless, you can quietly monitor the process from some distance, especially if this is the queen's first litter. A few mothers can 'forget' to bite the umbilical cord. While there is no rush for them to do this, if there are many kittens and the cords become tangled, then we may need to provide assistance. It is best to keep young children, dogs, and visitors away from the kittens for the first three weeks. If the mother perceives too much disturbance, she may carry her kittens to a new nest site.

Newborn kittens soon begin to crawl to find the mother's teats. They do not have to move much because the mother lies down beside them to nurse. If they become too scattered, she will gently retrieve them with her mouth. They just need to crawl a bit, and they will soon find the teats. However, if a kitten is very weak after birth and fails to find a teat, we can gently push it onto a teat to stimulate suckling behaviour. If the kitten does not manage to suck or if the mother has too little milk, we can feed it from a pipette and later, a bottle (Fig. 2.3). This must be done carefully; otherwise, we risk the kitten getting milk in its lungs. We must not use regular cow's milk as this is very different from cat's milk. Instead, buy a milk mix specifically made for cats and give the milk slowly. We need to see that the kitten is able to swallow it before giving more.

A queen will cannibalize stillborn kittens and those born very small and weak. It is rare for her to show infanticide towards healthy kittens, but the potential exists if she is highly stressed for some reason. It is safest to keep tomcats away from newborn kittens, as they can occasionally practise infanticide. This is most likely in the case of a non-resident male who is not a father of the kittens.

With no kittens to nurse, the queen will return to heat sooner, giving him the chance to father her next litter of kittens.

## Nursing period

The queen eats much more than usual in the last part of pregnancy. Her body stores fat for milk production after birth. Normally, the queen will not eat in the first day after giving birth, but after this she will eat a lot. A nursing mother with four kittens will usually eat two-and-a-half times more than she did before becoming pregnant. Nevertheless, the nursing period will gradually deplete her body reserves. Studies show that she loses an average of 5–6 grams of bodyweight daily over the course of lactation, depending on the litter size.

The cat mother is active around the clock in the first couple of weeks. The kittens suckle on a regular basis, and the mother takes only brief breaks to eat, drink and sleep. Already on the first day, nursing can occupy a total of 6–8 hours, and by the end of the first week, it is occupying about 70% of the 24-hour day. While nursing and resting with the kittens, the mother often spends time grooming them. This includes licking the area around the anus and genitals, which stimulates the kittens to eliminate urine and faeces. She consumes the waste that they eliminate. This behaviour, called coprophagy, is normal behaviour until the kittens are around 30 days old, helping to keep the kittens and nest clean.

Over the first three weeks, the mother takes the initiative to nurse her kittens by adopting a body posture that gives the kittens easy access to her teats. She mainly lies on her side but, as the kittens grow, she can also nurse in a sitting position. Over the next three weeks, this behaviour gradually declines as she spends more time lying on her belly or sitting in a manner that makes the teats inaccessible. In this way, she controls how much milk the kittens obtain and starts the gentle, slow process of weaning.

It is important to be aware that the kittens suckle eagerly during the first three weeks whether the mother has enough milk or not. Therefore, it is useful to check that the kittens are growing normally. A kitten weighs around 90–120 grams at birth depending on breed and litter size, with kittens in larger litters having lower birthweights than those in smaller litters. The most important thing is that each kitten grows steadily – a weight gain of 10–14 grams per day is typical. A digital kitchen scale with a flat surface, that shows the exact weight, can be used to weigh the kittens individually one or two times a week for the first few weeks. As a rough guide, kittens in litters of three to four weigh about 170 grams after one week,

230 grams at two weeks, 310 grams at three weeks, 400 grams at four weeks, 800 grams at eight weeks, 1200 grams at three months and 1600 grams at four months. However, growth rates vary and kittens in bigger litters tend to grow more slowly. By four months, we can see a clear difference in weight between females and males. While growth rates vary, as long as the kittens are continuing to grow, there is no need to worry. It is also normal for growth to spurt when the kittens begin eating solid food, especially in large litters.

From about three weeks of age, kittens play a more active role in initiating nursing sessions through begging for milk when they are hungry. After six weeks of age, if they don't beg for milk,

they will not get any. Usually, kittens do not need milk after two months, but they enjoy suckling if allowed, and it does not harm kittens to continue suckling. The most important thing is that weaning from milk does not occur suddenly. A gradual weaning process leads to a natural end in suckling motivation. If weaning is abrupt, the kittens may remain motivated to suckle throughout life. This can result in a cat sucking on sweaters and other soft fabrics (see Chapter 11).

After the kittens are weaned, production of lactase stops. Lactase is an enzyme that breaks down lactose, the sugar found in milk. If they are later given milk again – for example because the owner gives the cat cow's milk – they may experience stomach pain because they cannot digest the lactose. Therefore, cats usually prefer to drink water after they are weaned from their mother's milk.

In nature, a cat mother will start bringing home mice to her kittens when they are around three-and-a-half weeks old. By then, the kittens are ready to start eating solid food. Cat owners can therefore start providing food for kittens from 3–4 weeks of age. Use wet food in the beginning, as it takes a while before the kittens can eat dry food pellets. When introducing pellets, you can mix them with wet food for the first days or weeks to provide a gradual introduction to pellets.

The queen must be able to get away from her kittens when she wants to. This becomes more important as the kittens grow older, so she can get enough rest. If the mother is not allowed to go outdoors or even leave the room, give her a shelf high enough off the floor so that she can be inaccessible to the kittens. Keep in mind that by two to three months of age, kittens can easily jump half a metre into the air.

## Development of the Senses

Kittens are born quite helpless. Their most important tasks during the first three weeks are suckling and sleeping. To find the milk, they only need the senses of touch, smell and taste, and these senses are well developed at birth. They move their head from side to side as they crawl and when they smell milk, they know they are on the right track. If their nose touches a protrusion on the mother's abdomen, which is normally a teat, the kitten puts its mouth over it and begins to suck. The milk tastes good, causing the kitten to continue suckling – it has now learned where to find milk.

In the first few days, kittens cannot hear or see anything. The ear canals are closed and will not open until after about five days. Therefore, the mother cannot attract the kittens with sound even though the kittens miaow to attract her attention. Instead, she responds to the kittens' calls by licking them. The kittens' sense of hearing gradually improves after five days. Once developed, their hearing range is impressive. It extends from about 48 Hz, which we can also hear, to 85 kHz, which is in the ultrasound range and well above what we can hear. Later, when the kittens start to hunt, their large, flexible ears and ability to detect ultrasound will help them to pinpoint mice and other prey that communicate in ultrasound.

The eyes are also closed at birth (Fig. 2.4). After a few days, you can see small slits between the eyelids. The eyes open fully by nine days, on average, but there is great variation. Bjarne studied

eye opening in 153 domestic kittens. On average, eye opening started at six-and-a-half days but ranged from one to eleven days. The time until complete eye opening ranged from four to thirteen days. Therefore, you cannot use the time of eye opening as a precise measure of a kitten's age. When Bjarne studied what could cause this big variation, he found that kittens who had a young mother up to two years of age opened their eyes earlier than kittens who had an older mother. Female kittens opened their eyes a little earlier than male kittens. If the cats were kept in a completely dark room, the kittens opened their eyes earlier than if there was bright light in the room. But the biggest effect was genetic; some tomcats had offspring that opened their eyes particularly early. In an Italian study, it was found that kittens of oriental cat breeds opened their eyes at five to six days, on average, while Norwegian forest cats did not have fully open eyes until they were nine to ten days old.

Nevertheless, it is not the case that kittens can see perfectly from nine days of age. The eye lens is present but there are still small blood vessels and connective tissue around the lens. This matrix of nutrient channels is involved in building the lens. Its presence causes kittens to have cloudy vision when the eyes first open, but it gradually disappears by about four weeks of age, after which kittens have clear vision. This is also why kittens appear to have blue eyes initially and their underlying true eye colour is revealed later.

Once their eyes are fully functional, cats are more near-sighted than people, but have much better night vision. This is due to a higher ratio of rods to cones in the retina, as well as the presence of a reflective tapetum lucidum behind the retina which causes their eyes to glow in the dark. The kittens' night vision will come in handy for future nocturnal hunting forays, as will their eyes' excellent motion-detecting ability. In the daytime, they can see the difference between blue and yellow-green colours but, like people with red-green colour blindness, cats cannot clearly discriminate red colours.

# Behavioural Development

## Behaviour during the first three weeks

The cat is a typical altricial species, having off-spring that are born in an undeveloped state and who stay in the nest for a period after birth, rather than following their mother from day 1, as do the young of sheep and horses. During the first two to three weeks, kittens use their legs as paddles to crawl around. This restricts their movement to the nest area. Gradually, their ability to hold their legs beneath their body improves, allowing them to start walking. From three weeks of age, they can move quickly and efficiently, and they become much more active (Fig. 2.5). A new phase of development emerges, the socialization period.

## The socialization period: 3–12 weeks

# Play is important

Once the kittens become active, they will try out all kinds of movements – jumps, bounces, somersaults and short sprints. This is obviously fun for the kittens and is also an important part of their development. Through this locomotory play, they gradually gain better control of their muscles and develop well-co-ordinated movements. It is amazing how accurate their movements become as they grow up. For example, look at a cat deftly stepping around objects on a shelf without touching them, or elegantly jumping onto a shelf a metre above floor level without jumping a centimetre too high.

As the kittens' movements become stronger and more co-ordinated, their interest in social play (play-fighting) increases. People may participate in these games to some extent, but if a kitten becomes too rough, immediately stop playing, turn away and ignore the kitten. We don't want kittens to get in the habit of biting or scratching people. It is better to offer objects that encourage object play. All forms of play have a central place in the kitten's behavioural development and are fun for them just as play is fun for us. During play, the brain releases dopamine, which is a neurotransmitter secreted in situations when an animal is rewarded or experiences a positive expectation of a later reward (see Chapter 8).

## Socialization to cats

Kittens neither experience enjoyment nor thrive if they are isolated from others of their own kind. If kittens are taken from their mother at two weeks of age and live just with people, they will develop emotional disorders. They grow up more aggressive, stubborn and frightened in novel situations. Such kittens are timid towards other cats. If they are taken from their mother and littermates between three and 12 weeks of age, they are also likely to have their psychological development negatively affected. This clearly shows how important it is for kittens to live with other cats during their first few months, and why it is strongly recommended that they stay with their mother and littermates until at least 12 weeks of age.

Just as in dogs, cats have a sensitive period for socialization, meaning that they need to learn basic social skills during this period if they are to behave appropriately in social situations later in life. The socialization period lasts from about three to 12 weeks of age, with social experience in the period between three and seven weeks of age being the most crucial for avoiding behavioural problems in adulthood. This experience is gained mainly through social play. Kittens begin to play with their mother and siblings at three weeks of age and their social play increases to its highest level between eight and 14 weeks of age. Through social play and general interaction in these weeks, they learn more and more details about cat social behaviour (Fig. 2.6). They become familiar with the characteristics of the different individuals with whom they interact. They learn to use their communication signals in the correct manner and context by finding out how others respond to them. For example, through social play, kittens learn to inhibit the strength of their bites and scratches because if they hurt their play partner, the play partner will not want to continue playing and the fun will stop.

## Socialization to people



Socialization is important, not only with other cats but also with people. If kittens have no contact with a range of different people before three months of age, they will remain shy of people and be very difficult to tame later. The cat breeder has a great responsibility in this respect. The kittens must get experience of being lifted from the floor and held by humans. They also need to learn what different people look, sound and smell like, and how they behave. This experience can start from about two weeks of age through brief handling by the breeder. After three weeks of age, additional people can be involved, both in gentle handling and in playful activities.

Socialization activities should be enjoyable for the kittens and not forced, as the important goal is that the kittens learn to be comfortable around people and not afraid of them. We also want them to generalize from the positive experiences they have with known people to unfamiliar people who they will meet in the future. Such learning about people involves familiarization with a diversity of sensory stimuli, movements and activities of different people as well as socialization so the kittens learn to behave appropriately around people. Socialization includes learning to inhibit scratching and biting of people, learning to recognize when people are open to friendly interactions such as play, social grooming and resting together, learning to avoid being accidentally stepped on or bumped into by people, and learning from positively reinforced training exercises conducted by people. You can read more about learning and training of cats in Chapter 10.

Experiments show that the most effective socialization is achieved if the kittens have positive exposure to people for 30–60 minutes each day, especially during the period from three to seven weeks. Contact beyond one hour daily gives no added effect. It is easier to socialize kittens if the mother is present and she shows friendly behaviour towards people. If the mother is not friendly, then it is better to socialize the kittens in a different room, but with all their littermates so they provide social support to each other. Kittens that are well socialized to one person will more quickly accept new people, too. Therefore, their social experience can be gradually expanded over the period from three to 12 weeks, so they get to know different types of people, both women and men, children and adults. The kittens will then get a more general understanding of humans. Many cats that have only ever lived with a woman fear men, particularly when they hear the deeper sound of a man's voice. If you are a single cat breeder, please include people of the opposite sex in your socialization programme. If you do not have children, you can invite neighbours to bring their children to socialize with the kittens. Of course, you can also dress up to change your appearance to look different.

## Socialization to dogs

The above guidelines for socialization also apply to different kinds of animals with which we want the kittens to be social as adults, such as dogs. As this is to teach the kittens about dogs, it is important that the right dogs are used so they do not frighten the kittens by barking at them or attempting to chase them. It is safest to restrict this socialization experience to dogs that have themselves been socialized to cats when they were puppies, and are trained to be calm and to look away from the kitten to the owner when asked. Initially, dogs should be on a leash or separated by a fence when introduced to kittens and they must be supervised. If kittens are going to a home that has a dog, it is important that the owners have prepared and planned for the introduction and continue to supervise the relationship as the kitten gets older and more active so all the good work by the breeder is not undone by the kitten being chased by the family dog. They may need to ask a

dog trainer or behaviourist for advice (see Chapter 11).

Care should also be taken to avoid introducing diseases to the kittens through exposure to other animals such as cats and dogs from outside the household. Follow your veterinarian's advice regarding vaccinations.

## Object play and hunting training

Kittens and many adult cats love running after and catching small, moving objects. Table tennis balls, yarn balls and strings are excellent objects for stimulating object play. Such play occurs from around four weeks of age, but the most active period for object play is from 18–21 weeks. Object play develops hunting skills and is sometimes referred to as predatory play. The kitten learns to intercept the movements of objects and capture them while in motion. For wild-living cats, it is essential that they become competent at this if they are going to eat.

When the kittens are around five weeks old, the mother may bring a live mouse home and drop it in front of the kittens. Their attempts to catch it give them valuable training in catching prey. If the mother is an indoor cat or does not have access to mice where she lives, the kittens will miss out on this early training. This practice in catching prey is continued throughout life, especially when cats are not very hungry. That is why they often do not kill the prey they catch right away but take opportunities to catch and release the same mouse several times. This does not look pleasant to humans (or the mouse), but it is important, if the cat will have to be dependent on catching live prey for its survival.

Object play is the play best suited for people to participate in (Fig. 2.7). Be sure to have appropriate objects, small enough for the cat to move and lift easily. The simplest things we can use are a table tennis ball or the traditional string with a piece of paper or cardboard tied to the end. When you move the string near the cat, be patient. Do not expect the cat to run after it immediately. As we shall see in Chapter 6 on hunting behaviour, cats often prefer to lie in ambush until they suddenly pounce with lightning speed. Part of the fun of play is the surprise element, which you can contribute to by moving objects suddenly in different directions. A string by itself is also an attractive play item. Cats have an instinctive urge to catch long, narrow objects. In nature, they could be small snakes, which cats can be highly skilled at catching, the instinctive urge perhaps being evolved to kill a predator that may be a threat to their kittens.

## When can kittens go to new owners?

To ensure that kittens learn what they need to learn about social behaviour, you should not take them away from their mother and littermates until they are at least 12 weeks old. It is a legal requirement in some countries (e.g. Norway) not to separate kittens before 12 weeks of age, and it is also a requirement of some pedigree cat clubs. The FIFe (Fédération Internationale Féline, an international cat fancier society covering 39 countries) has decided to extend this to 14 weeks, effective from 2023. Remember that the third month of life is the peak period for social play between kittens. It is a great advantage if the new owners can make some visits to develop familiarity with a kitten before it comes home with them. This will make the transition to the new

home less alarming for the kitten. Some breeds, such as the oriental breeds, may develop more slowly than others, and many cat experts suggest kittens of these breeds should wait until they are 14 weeks old before they are sold. Also, consider the development of the individual kitten. If growing more slowly than average, you may wish to wait a few more weeks. A recent large survey in Finland shows that kittens transferred to new owners at eight weeks of age are more likely to show aggression towards people and cats as well as other behavioural problems. The fewest behaviour problems were reported in kittens that moved to their new home after 14 weeks of age.

## New Home from 12 Weeks of Age – How to Achieve a Good Start

### Choosing a kitten – the choir of choice

There is little gender difference in behavioural development before the kittens reach 12–16 weeks. From around 12 weeks, one can observe that male kittens play somewhat more actively than females. Therefore, potential owners who come to inspect a three to four-month-old litter are easily attracted to male kittens when comparing the littermates. But you should not just note the activity level; think about what kind of relationship you would like to have with the cat. If you want a pet, choose a kitten that comes to you and does not object to being picked up and petted. An active male cat may become too independent, but at the same time may be fun to play with. Be somewhat sceptical about the smallest kitten in the litter. Is it completely healthy? If the eyes show secretions, it may indicate an eye infection or, in some Persian cats, improperly formed tear ducts. Is the kitten shy of its littermates? If you want just one indoor cat, this kitten can still be a good choice. If there are dominant cats in your neighbourhood, or you already have another cat, you could be more sceptical about this kitten.

If you are unsure how a new kitten will adapt to your cats at home, you may ask the breeder if you can try it out for a couple of weeks with return rights. During these weeks, you will get a good indication of whether the cats will get along, although they will hardly become best friends in only two weeks. Some breeders agree to such a test arrangement, as they really want their kittens to thrive well in their new home, while others are unwilling due to concerns about introducing diseases to their cattery with a returned kitten.

### Knowledge is required

To ensure the proper care of cats, new cat owners are obliged to acquire the knowledge needed to understand their needs. The official owner should be at least 16 years old and have the maturity and competence to be responsible for the cat. Feel free to give children co-responsibility, but parents should not delegate the main responsibility for the animal to a child. This book aims to give you the necessary knowledge to be a responsible cat owner. Cat breeders, or anyone else who sells or gives away a cat, are responsible for ensuring that the new owner has the necessary information to take care of the cat. This includes telling you about the food the cat is used to, what kind of cat toilet and cat litter it uses, typical places where it is used to finding water, any health issues of the cat or its parents, the vaccinations and medications it has received, and particular aspects of the cat's personality and history you should know about. If the cat has been exposed to any unusual

situations, new owners should be told about them as this information can provide an important background for understanding behavioural problems that may occur later on. If you receive no such information, ask for it. Ideally, all animals would come with a manual, like the technical equipment you purchase. The new owner must at least note the address, telephone number and e-mail address of the person supplying the cat and be able to contact him or her if any questions arise, especially if they may be related to the previous experience of the cat.

Be sure to meet the cat in its current residence before buying it, and look at the conditions in which it has been kept. Avoid buying a cat without directly seeing where it has been living. Beware of 'cheap' purebred cats – get them only from reputable breeders.

Anyone selling or giving away a cat must be able to assess potential owners and check that they have the necessary knowledge, attitude and time to look after a cat, and provide them with appropriate advice. If you are in doubt as to whether your cat will do well in its new home, find someone else to be the new owner.

## Vaccination, ID marking and neutering

When a kitten is sold or given away at three months of age, it should have already been vaccinated for the first time and labelled with a micro-chip for identification. Cats should be given vaccines according to recommendations of the veterinary authorities in your home country. The most critical ones give protection against feline distemper (feline panleukopenia virus), feline viral rhinotracheitis or cat flu (feline herpesvirus 1), feline calicivirus, and rabies, but there are several others that could also be relevant. A new owner must, of course, receive a certificate of vaccination and proof that the kitten is ID-marked. They must also follow up with booster shots and regular re-vaccinations. Cats are usually quite healthy animals, but your cat may suddenly catch a serious infection. Cat distemper is common and is highly contagious. The owner can bring an infection from outside to indoor cats, so no cat is safe without vaccination.

Some veterinarians propose six months or a bodyweight of 2.5 kg as a general rule for the age to neuter or spay a kitten. Other veterinarians recommend that this be done earlier, at three to four months of age, to avoid unwanted kittens. There appear to be no medical or physiological arguments that speak against this. It is currently unclear whether early neutering weakens a cat's ability to cope with social competition from other cats or increases the risk of behaviour problems.

## At the new home

When you are ready to bring a new kitten home, it can be a good idea to bring the carrying basket from your home and leave it in the room with the kitten overnight or for a few hours on the day of collection so that the kitten can start getting used to new smells from your house while still in a familiar place. You can also wipe a cloth or towel over the kitten's mother or let her rest on one that you then place in the carrying basket so you can bring home her familiar scent.

Once you have brought your new kitten home, open the carrying basket but leave it in the room as a safe retreat for several days, after which it can be gradually moved to its final location where it

will remain as one of the cat's resting places (Chapters 10 and 11). Allow the kitten to decide when to come out of the carrying basket – do not force it. Let it sniff and check all the nooks and crannies in any rooms it is allowed into. The kitten will not feel safe until it becomes familiar with all parts of its new home. It must learn where it can sleep, where to find food and water, where the cat toilet is and, not least, possible hiding-places. If the kitten is scared of something, it must know immediately to where it can run and hide. Make sure it cannot get outdoors. In a big house, restricting the kitten to one or two rooms initially will help it to establish a home base. Along with the carrying basket, you may provide a cardboard box as an extra hiding-place. Give the kitten the same type of food and cat litter that it is used to. After a few days, you can allow access to additional rooms, perhaps one at a time.

As important as getting to know the new home is getting to know individuals with whom the kitten will have social contact, both people and other animals. This must be done in a gentle, unforced manner. Do not chase after the kitten trying to catch it, and be careful that children do not do so. Make contact in the kitten's premises and at the kitten's pace – you need to work in 'kitten time'.

Sit down on the floor and wait for the kitten to come to you, but have great patience. The kitten will come only when it feels safe. How long this takes can vary enormously, depending on the personality of the cat, hereditary characteristics and past experiences with strangers. If you have already been visiting the kitten before bringing it home, you have made a good start, but remember that this occurred in the kitten's home environment and probably in the presence of the mother and littermates.

## Now everything is new, and some adjustment time is needed.

Keep other animals in the household, both cats and dogs, at a good distance in the beginning. The best thing is to let the new kitten get to know its new home well before it starts meeting other animals; then it will feel safer when it meets them, as it already knows where to find hiding-places and there is less risk that the kitten will panic. Be present in the room when the animals meet for the first few times. Be careful not to allow older cats to attack the new arrival. At the same time, avoid jealousy; give your older cats plenty of play and petting. They must not get the impression that you will replace them with the new cat. If they regard the new one as an intruder who will compete with them for resources, the relationship between the cats can be difficult for a long time. Give all the cats food at the same time, but in individual food bowls placed a good distance apart. It is a good idea to give the kitten its own litter tray, as it may be afraid to enter one that smells of unfamiliar cats.

Once your kitten has become familiar with its new home, you can start some basic training (see Chapter 10). One of the first things to teach the kitten is for it to come to you when you give it a specific signal such as a whistle or calling its name. When it comes to you, reward it with a treat or gentle stroking. It is also useful to train the kitten to walk on a leash.

Many owners will keep their cat indoors, or give them access to a safe, enclosed outdoor area, a catio. Others will want to take their cat out for walks on a leash or let it roam the neighbourhood.

There are advantages and disadvantages to both these choices (see Chapter 11).

A new cat must not be let outdoors before it is familiar with its new home – this may take two to three weeks. It must also have been well socialized to people. This is equally important whether the new cat is a kitten or an adult cat. Nevertheless, a kitten should not go outdoors until it is four to five months old and is fully vaccinated. You must wait longer if there is a lot of traffic or other hazards where you live.

The first few times the new cat goes out, you must go out with it. If you have trained the cat to walk on a leash, you can easily take it out and go for a walk around the house or in the garden (see below for a link to a short video clip showing Ruth's kitten making an early foray on a leash). Otherwise, stay outside the house and let the cat see you while it gradually inspects the surroundings and gets familiar with them (Fig. 2.9). Then the cat learns that the area around the house is your territory, and eventually it will consider this as its own territory, too. If possible, leave a door open so the cat knows that it can escape indoors if it is scared by something. Give your call signal a few times while the cat is outdoors, so it learns where the door is and knows that it is welcome indoors.

The sense of place does not come by itself. The cat will develop good orientation ability as it becomes more familiar with the area and walks further away from home, and then finds its way home again. Therefore, you can gradually give the cat greater freedom, but be sure to stay close by in the beginning so the cat can come in whenever it wants to. Look and listen so you know when it wants to come in, or signal for it to come home if it is getting late. If you have a cat flap in a door, you can now teach the cat to use it. This training should also be done gradually. First, teach the cat to go through the cat flap with the flap taped open. When the cat easily enters through the hatch, close it almost completely and let the cat learn to push the flap up with its head. Once this has been learned, you can close the flap completely. You can read more about the cat's orientation and navigation capabilities in Chapter 7.

When the cat is fully familiar with coming and going and wants to be out for extended periods of the day, it can be out alone during the day while you are at work. Then it will soon learn that you usually come home at a certain time and will be ready to enter the house with you when you arrive home. That does not mean that the cat has been waiting for you all day; cats quickly learn regular routines and while you are at work, the cat is on reconnaissance trips, hunting or resting under a bush. If you approach this stage gradually, the cat will feel secure while learning to master new challenges outdoors.