

Rm. 5

**INNATE
AND
LEARNED
BEHAVIOR**

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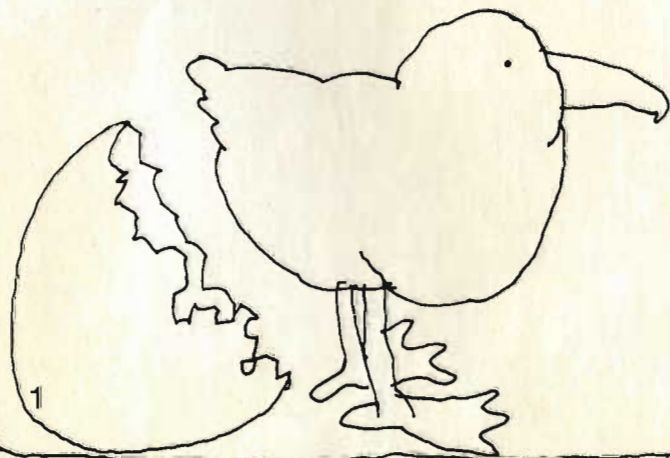
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INNATE AND LEARNED BEHAVIOR

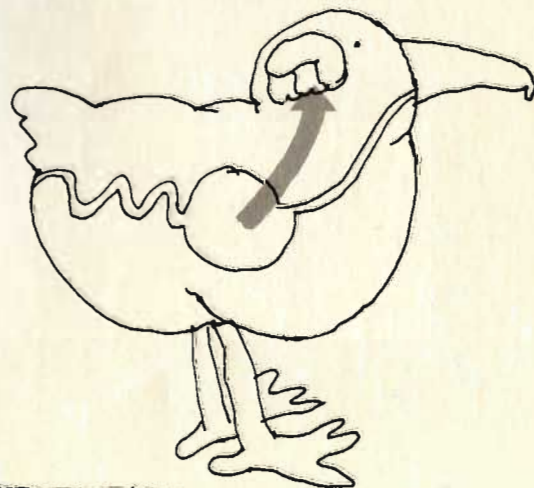
Innate Behavior	1-36
Learned Behavior	37-63
Innate and Learned Behavior in the Life Cycle	64-89

INNATE BEHAVIOR

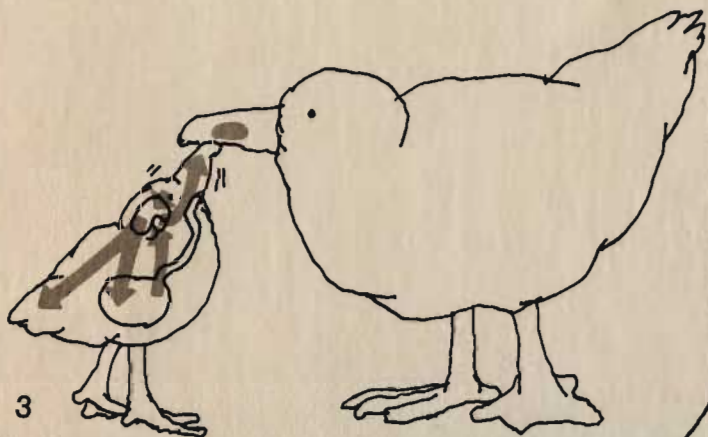
Soon after a herring gull chick is born, it must eat.



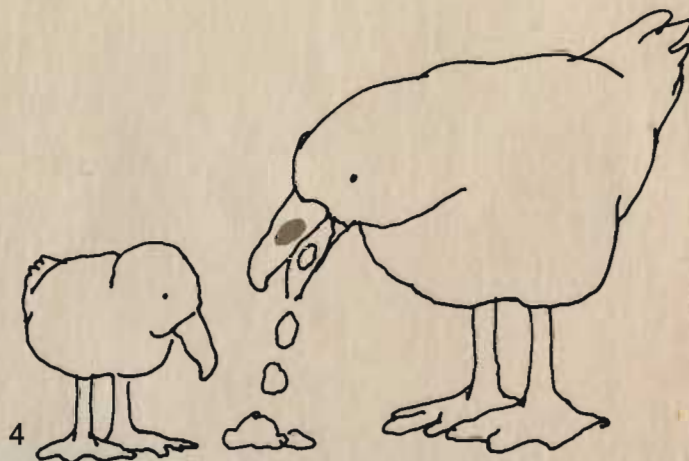
A message from its stomach makes it feel hungry.



If it sees a red spot nearby, it pecks at this red spot.



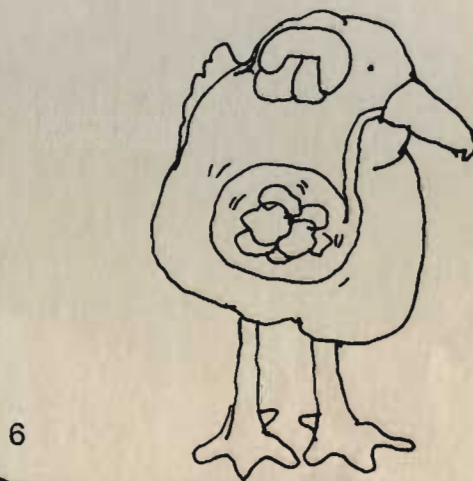
This pecking usually causes the owner of the red spot to regurgitate food.



The chick eats the food and satisfies its hunger.



It will not peck at red spots until it again feels hungry.

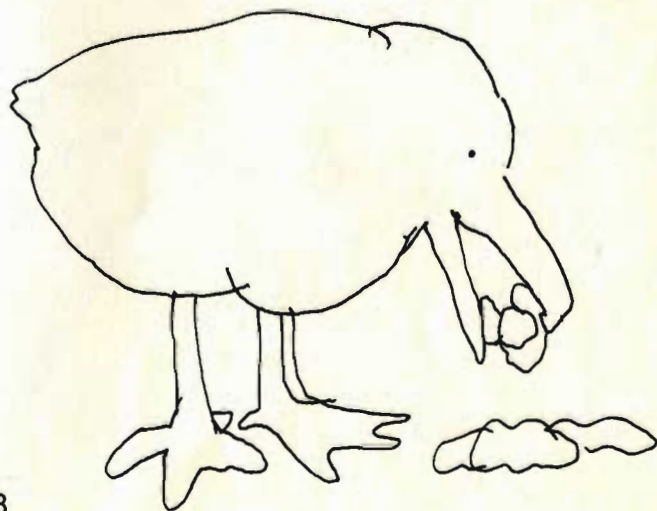


In order to eat, the chick has carried out a whole set of behaviors. It has pecked at the red spot on its parent's beak,



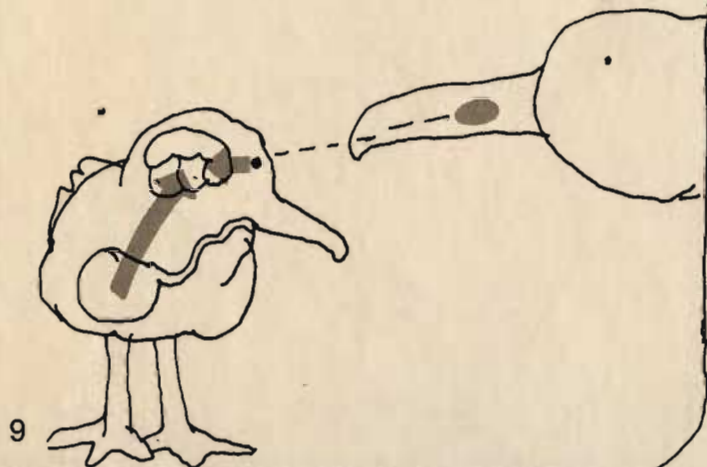
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and it has eaten the regurgitated food.

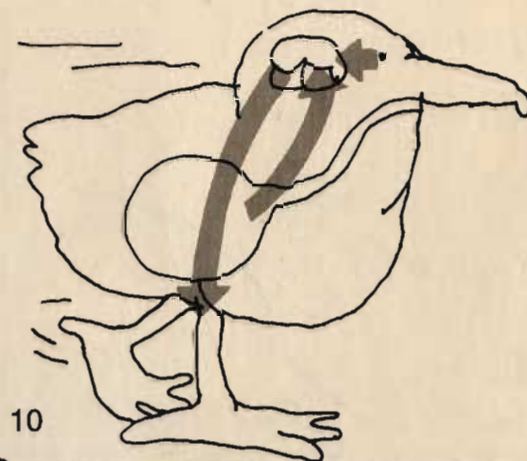


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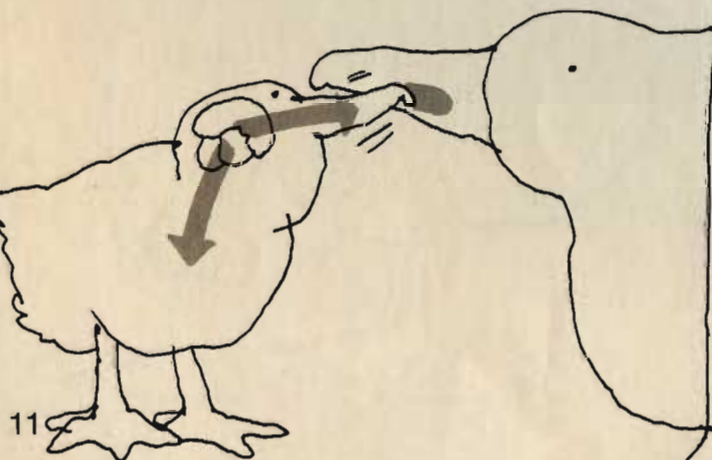
All the chick needs to perform this set of behaviors is the right information:



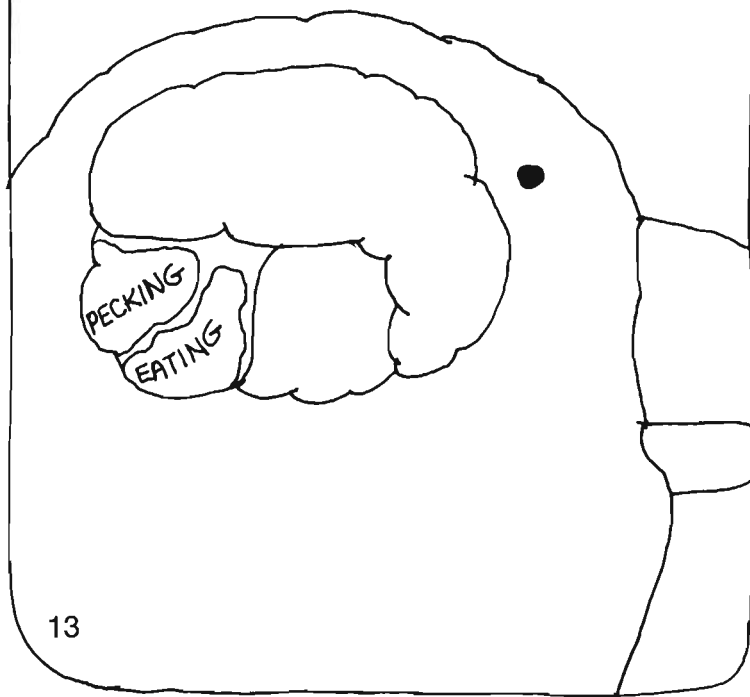
it must see a red spot and feel a hunger urge.



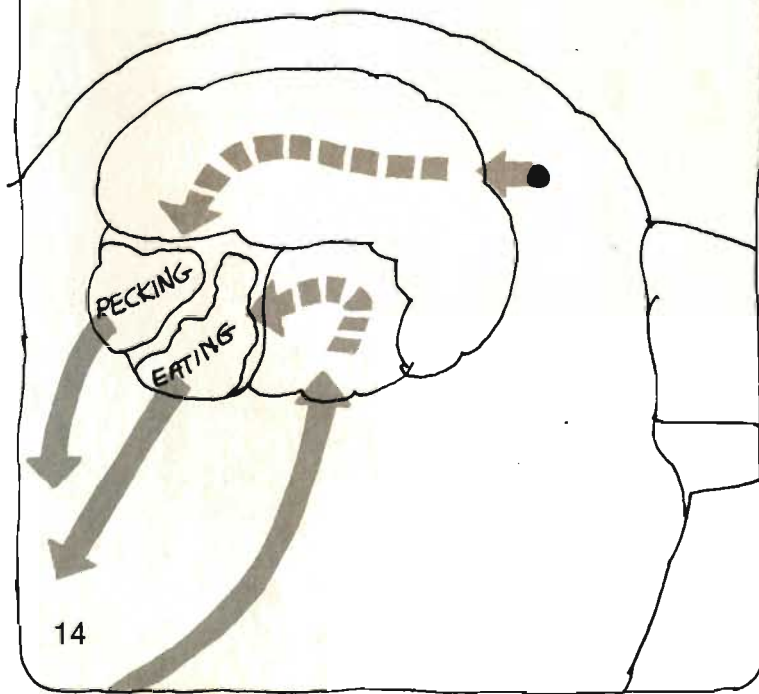
The instructions will be sent to the muscles and the chick will act in a way that helps it survive.



Yet the chick has had no experience with this set of behaviors in the past. How does it happen to carry out these behaviors? The herring gull chick is born with instructions for carrying out certain behaviors. These instructions are already built into the brain.



The chick is also born with connections between incoming information and these instructions to the muscles.

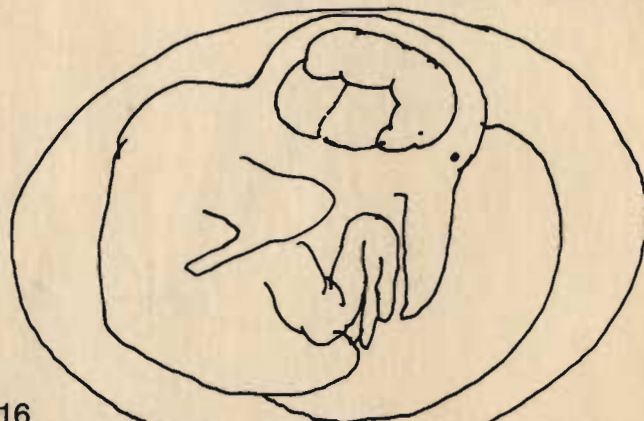


The instructions and the connections grow
before the chick is born



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just as the rest of its body grows.



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By the time the chick is born, the brain is
ready to work.



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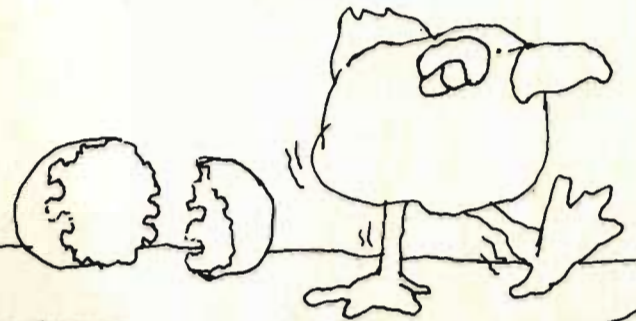
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The kind of automatic behavior that is ready at birth is called **innate** behavior.

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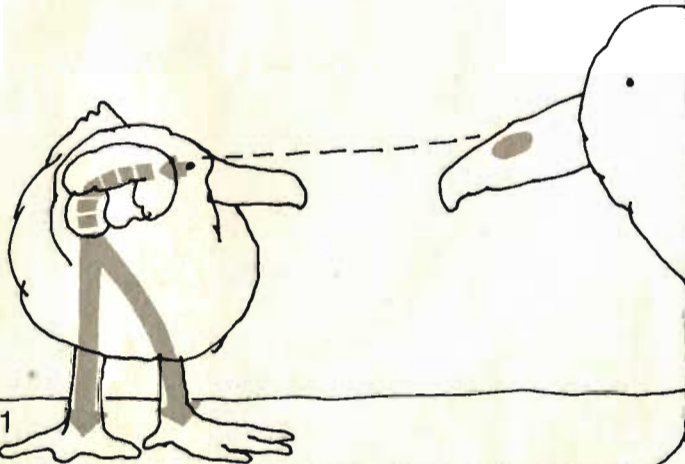
Past experience is not necessary for innate behavior.

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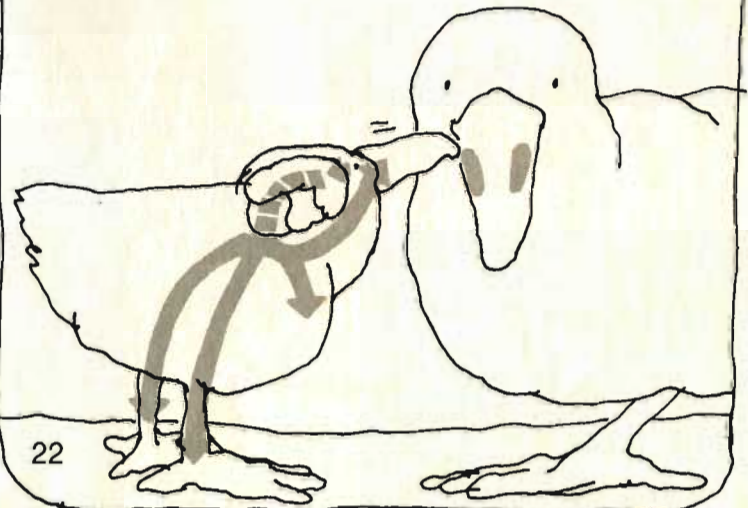
All that is necessary is the right kind of *information* from the environment

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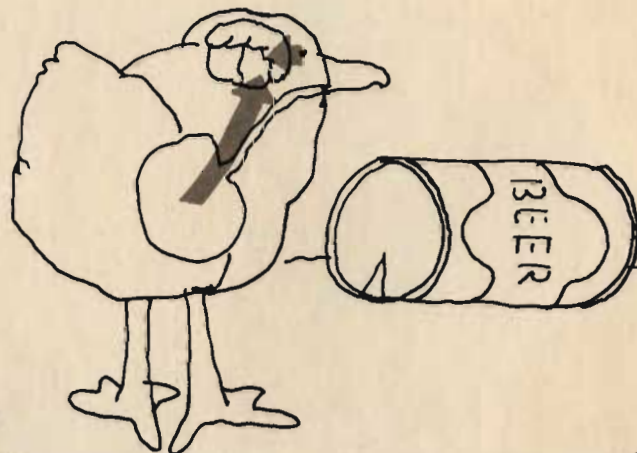
and messages from inside the animal's body.

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A hungry chick will not peck at everything that happens to be around. In fact, it does not pay much attention to most things.

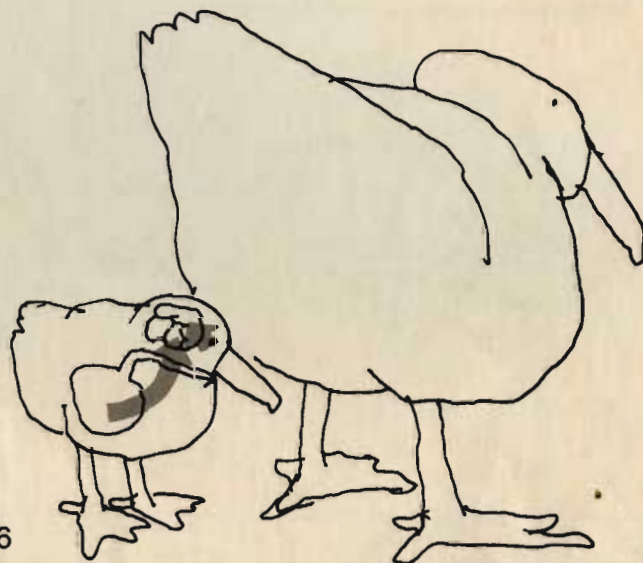
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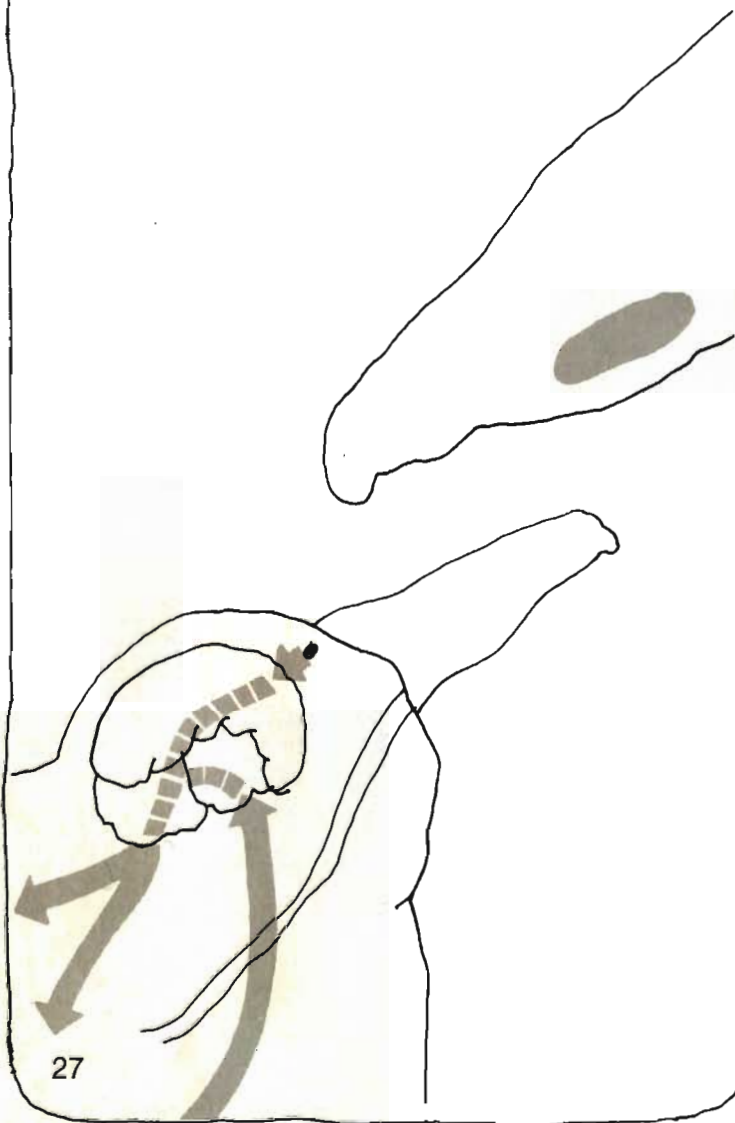


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Red dots, on the other hand, start signals traveling to its muscles.



Signals travel to the muscles because the chick's brain automatically changes some information into signals for action.

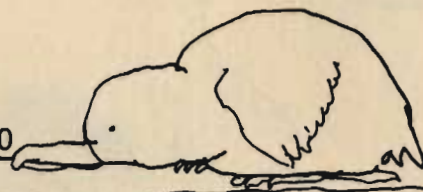


Herring gulls are born with many innate behaviors.

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They crouch when a strange object is overhead.

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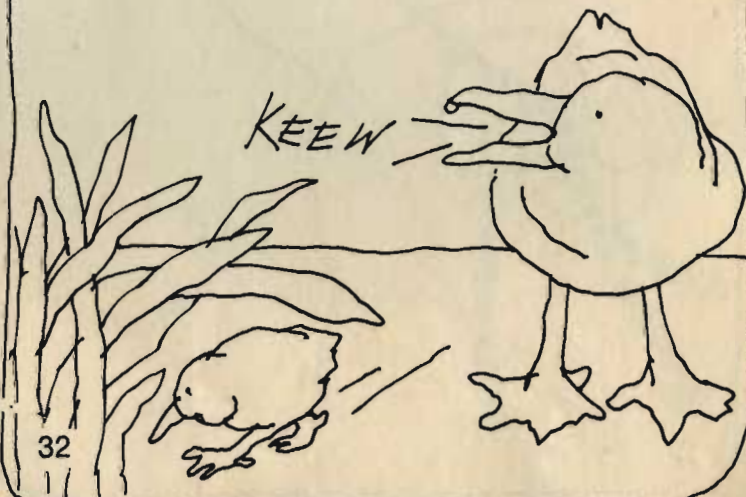
And they run from predators on the land.

31



They also run to a hiding place when they hear the gull warning cry.

32



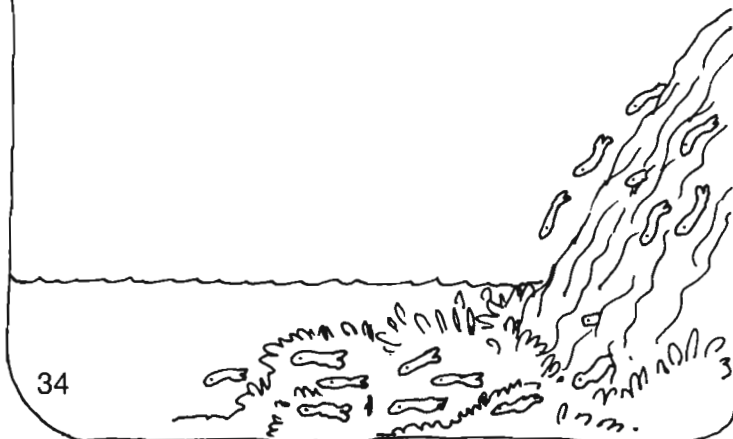
All animals are born with some innate behaviors.



Ducklings swim after adult ducks.

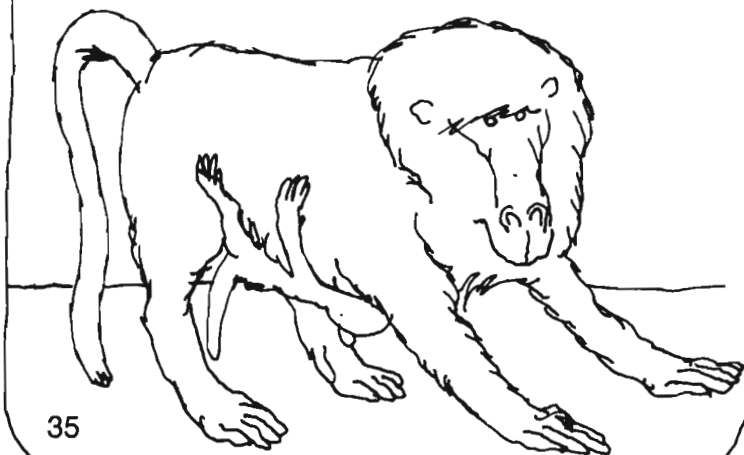
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Fingerling salmon swim downstream.



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Baboons cling to their mothers.



35

And human babies cry when they are hungry.



36

LEARNED BEHAVIOR

Most animals are born with more than a set of innate behaviors. They are also born with the ability to **learn**.

For example, we have seen that newborn chicks have an inborn reaction to anything that flies overhead:

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they crouch.



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They crouch no matter what flies overhead.



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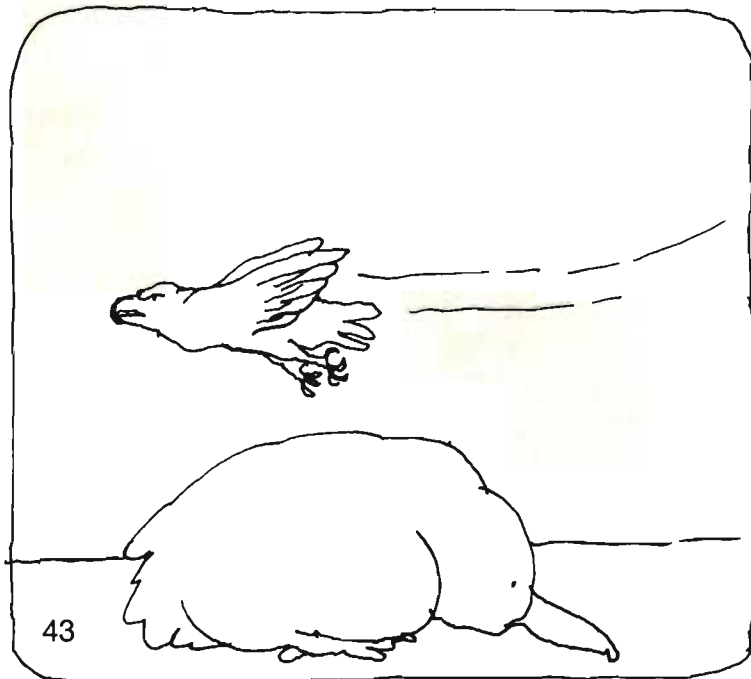
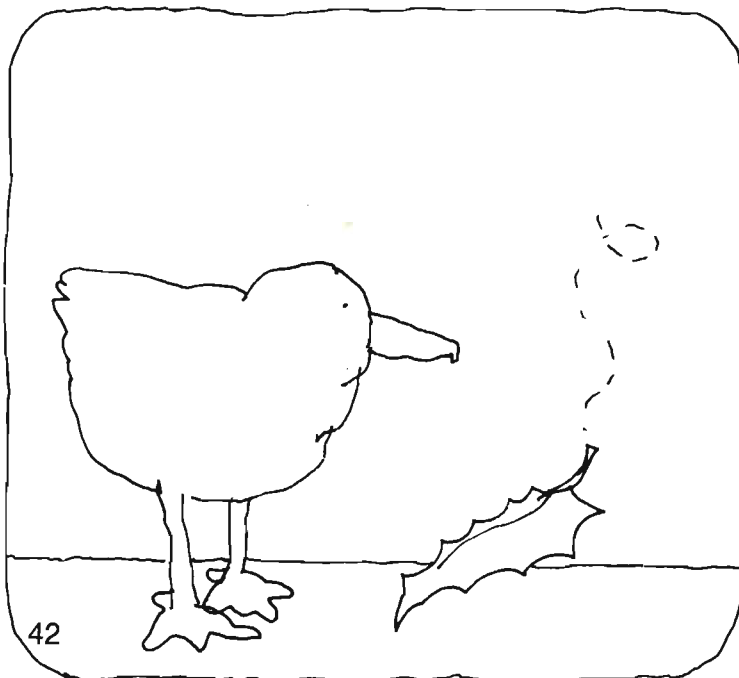


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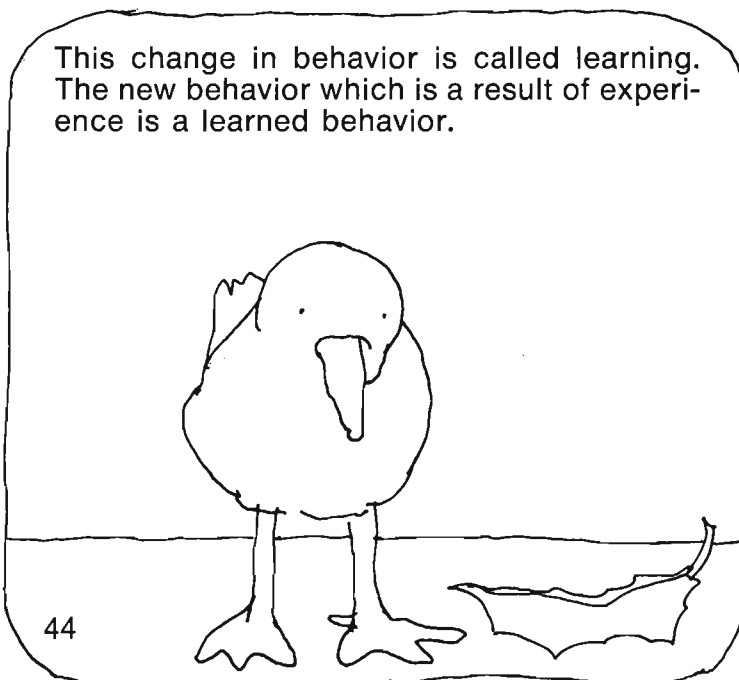


But soon they no longer crouch at most of the familiar things in the air. They crouch only when something strange or something they know is dangerous is in the air.

41



This change in behavior is called learning. The new behavior which is a result of experience is a learned behavior.



Herring gulls learn a number of things.

45

The chicks learn the boundaries of their territory.

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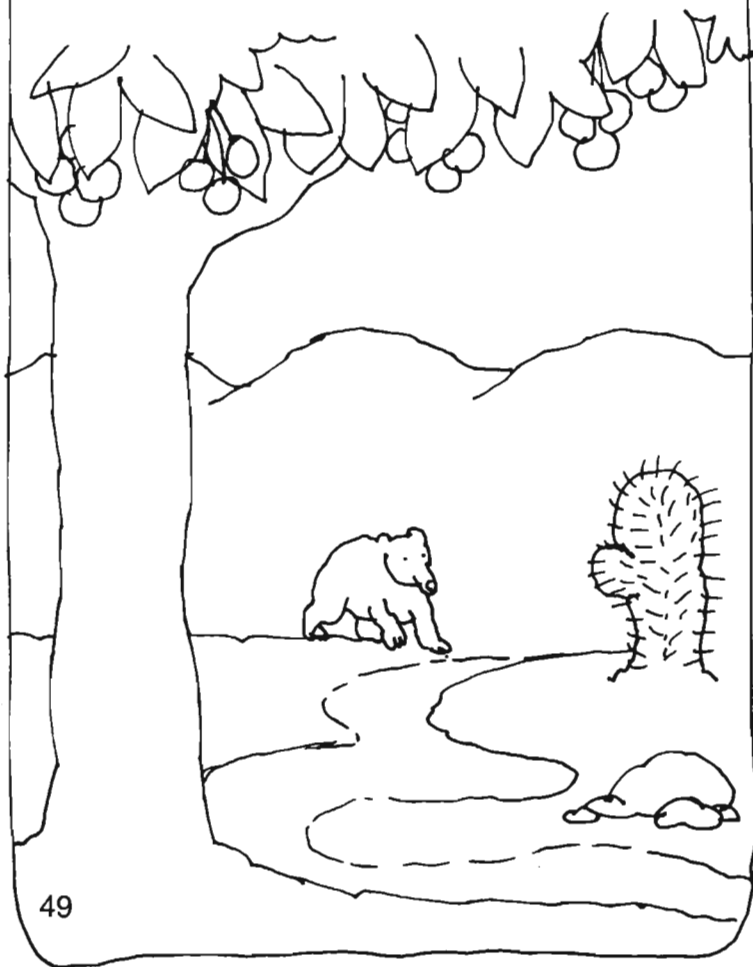
Parents learn to recognize their chicks.

47

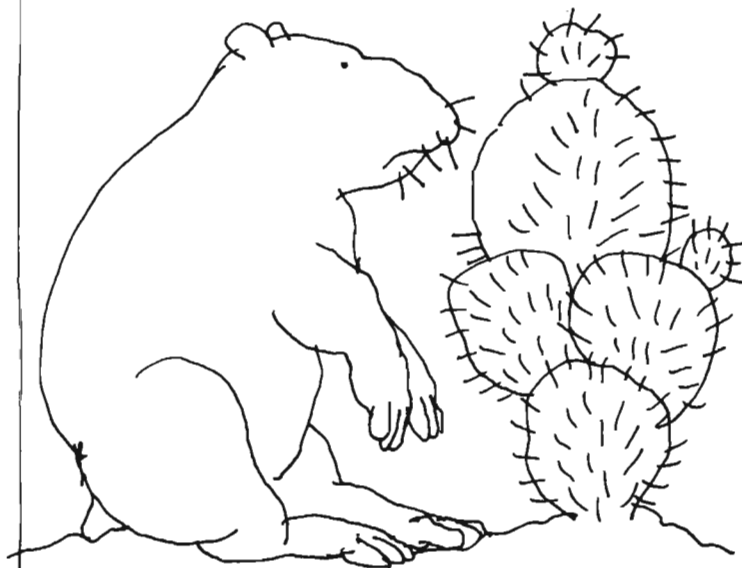
And all gulls learn where to search for food.

48

All animals learn some things. They learn where things are in their environment by exploring.

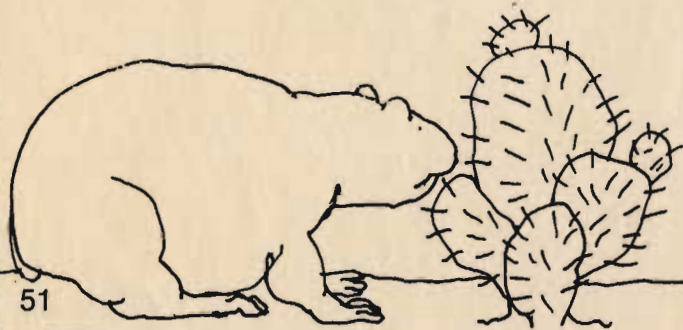


They also learn what happens when they act in different ways. Learning by doing, by making mistakes and by doing again is called trial-and-error learning.

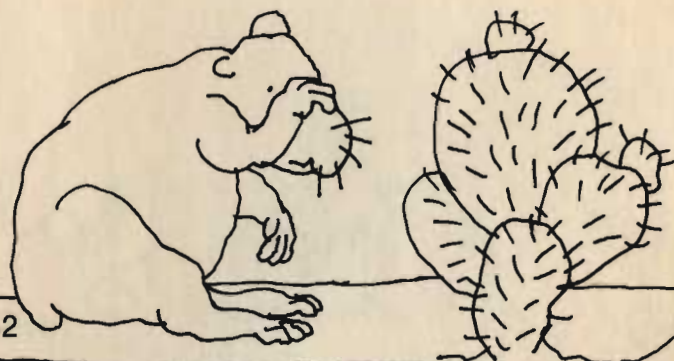


Animals try many different things.

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Those that are painful or unpleasant they avoid.



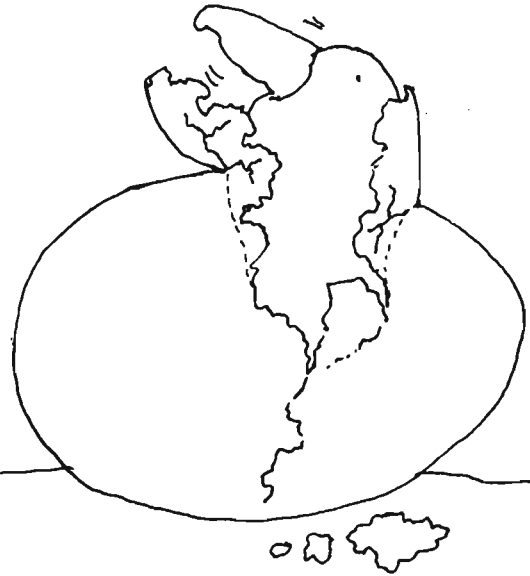
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Those that give them pleasure they are likely to repeat.

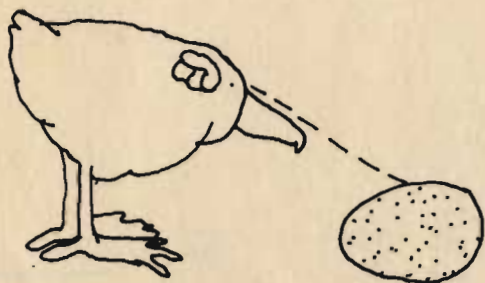


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It is often difficult to tell which behaviors are learned and which are innate. Not all innate behavior shows up at birth.

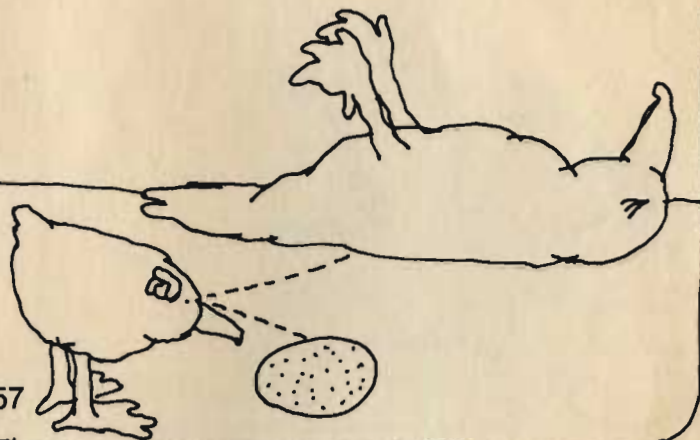


For instance, sitting on eggs is an innate behavior, but it is not performed by herring gull chicks.



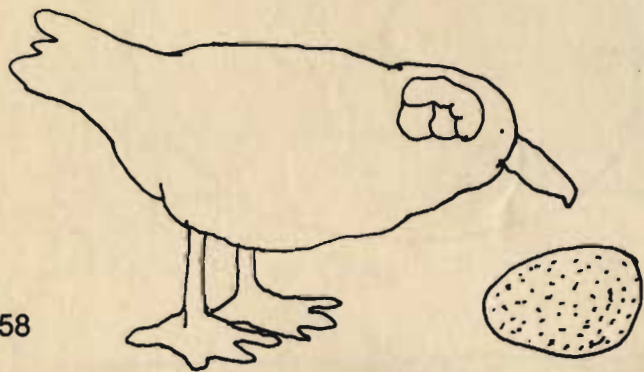
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No matter what information is present in the environment, a chick will not sit on eggs.

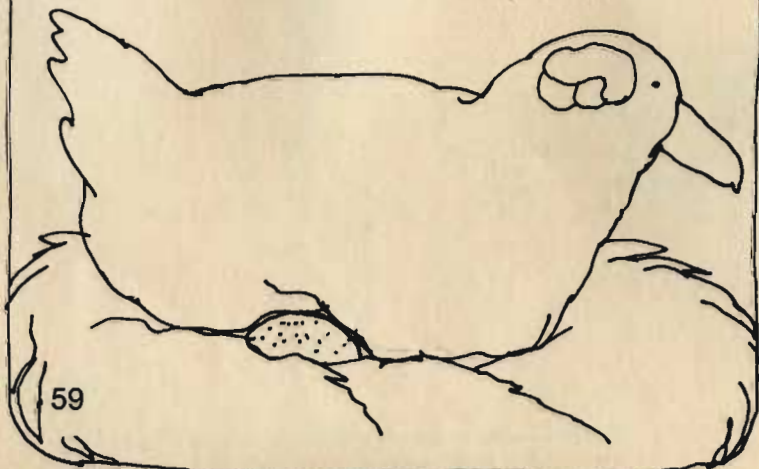


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Only adults sit on eggs.



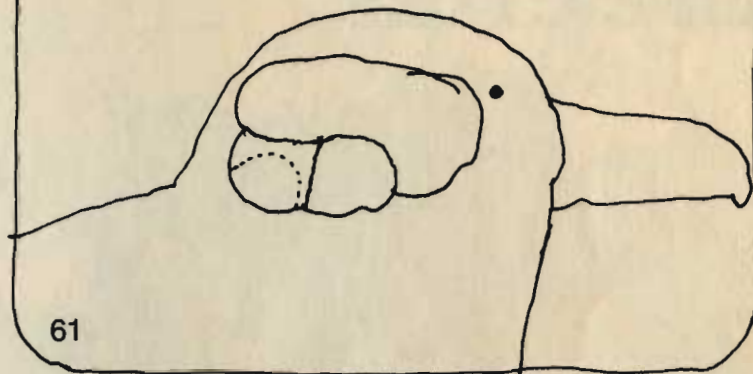
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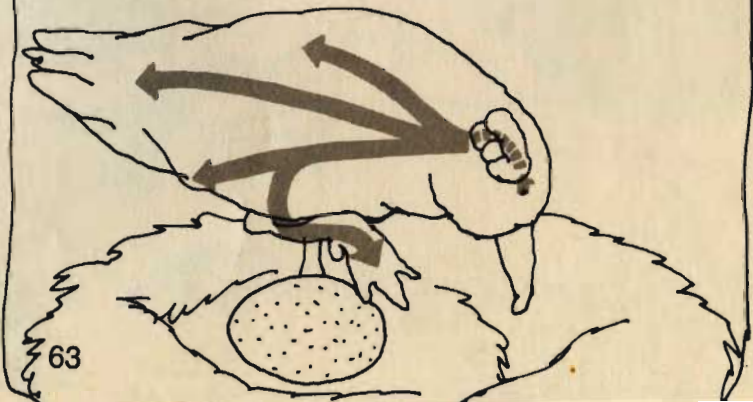
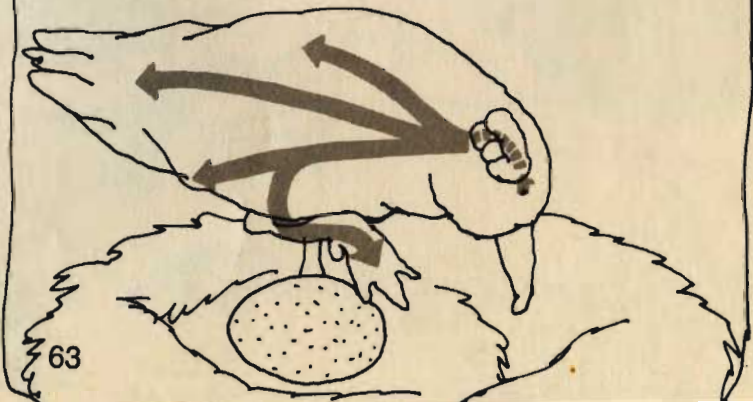
As the animal's body grows, instructions for new behavior develop in its brain.

60



Then the innate behavior appears at the proper time in the animal's life.

62



INNATE AND LEARNED BEHAVIOR IN THE LIFE CYCLE

All animals have some innate behaviors, but some animals have more than others. All animals learn some things, but some animals learn more than others. To understand why, we must realize that different animals may have to solve different problems when they are born.



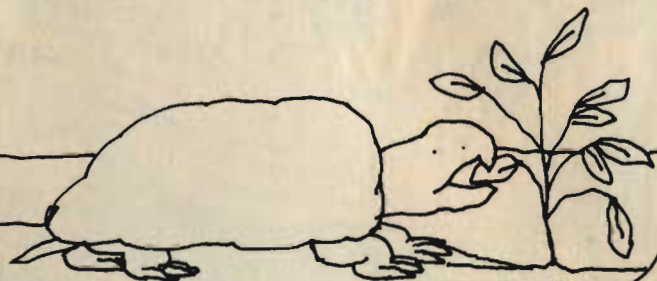
Some animals must immediately begin to act on their own.

66



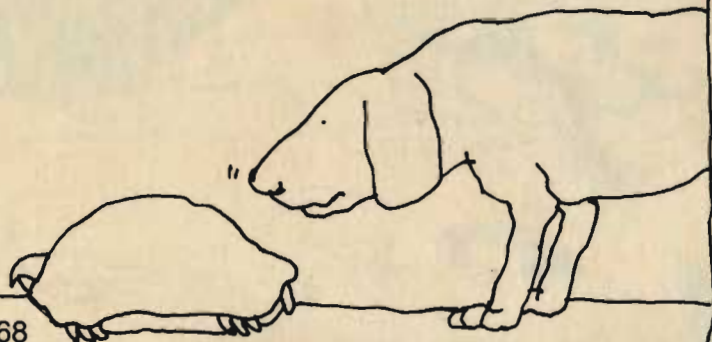
These animals must carry out innate behaviors to handle a number of problems, like what to eat,

67



what to avoid,

68



and later, what sort of animal to mate with.

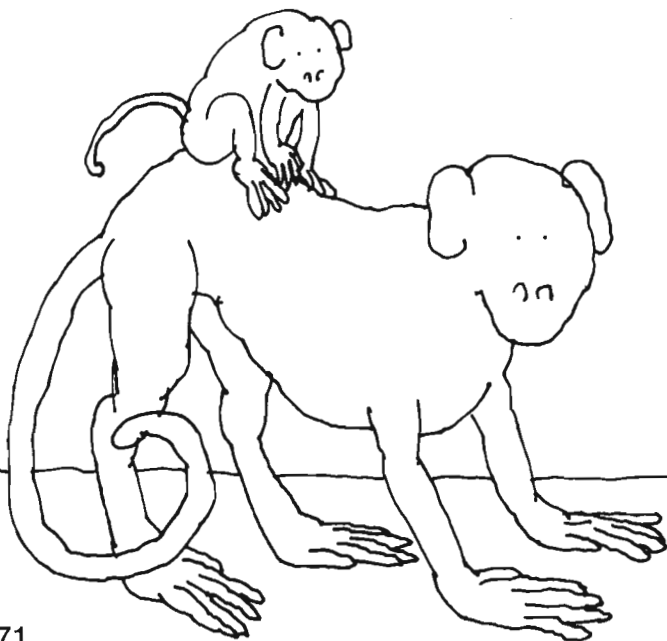
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Although this kind of animal will learn some things, it will depend on many innate behaviors to solve its survival problems.



Other animals do not immediately have to solve their survival problems alone. After they are born, they live in a protected environment.

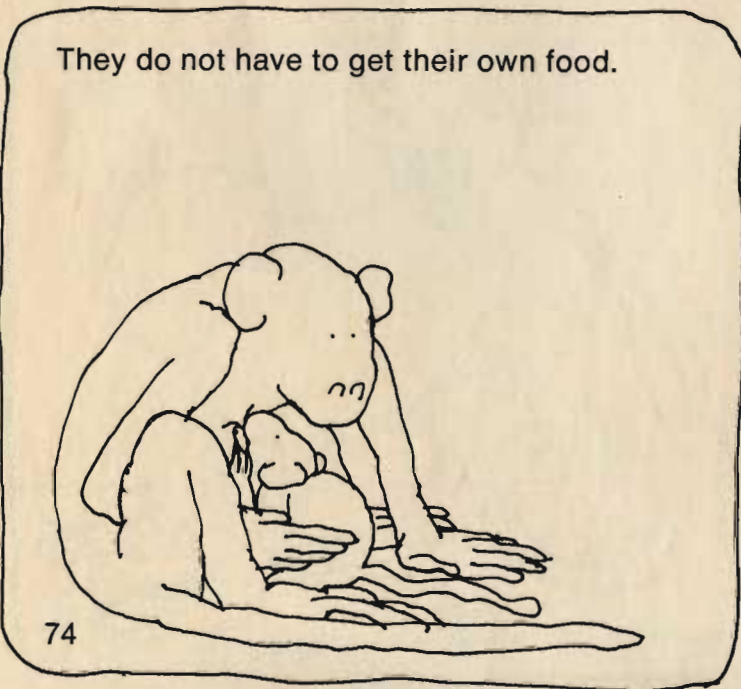




In this environment they are cared for and protected by others.



They do not have to get their own food.



They do not have to avoid being eaten on their own.



Animals that grow up in a protected environment must be able to take advantage of this protection. Most of their innate behavior serves this function: it allows them to be dependent on other animals.



A period of dependency, in which the young depend on the adults, gives the young both the time and the chance to learn many important things.

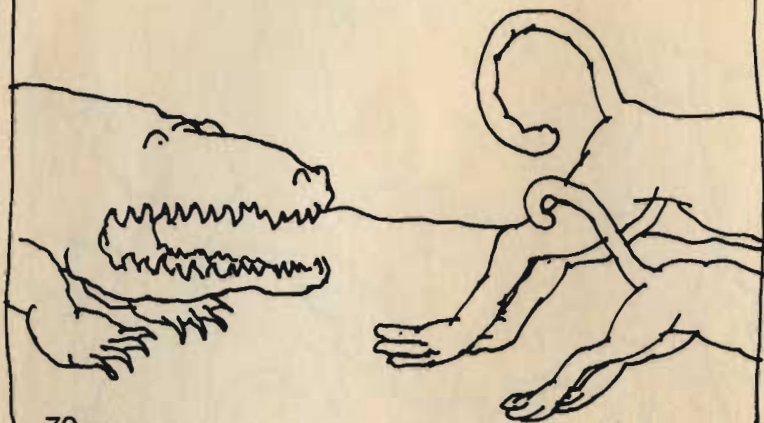


They learn what to eat as they grow up.



78

They learn from others which animals are dangerous.



79

They learn by playing.



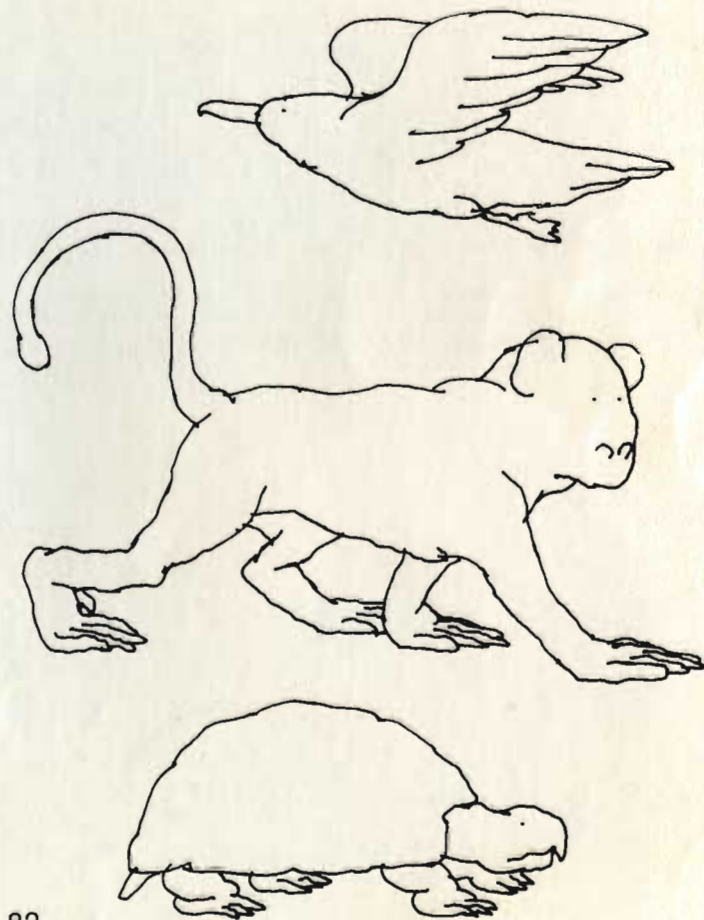
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They learn by watching and imitating.



81

The behavior of an adult animal is usually a mixture of innate and learned behavior.

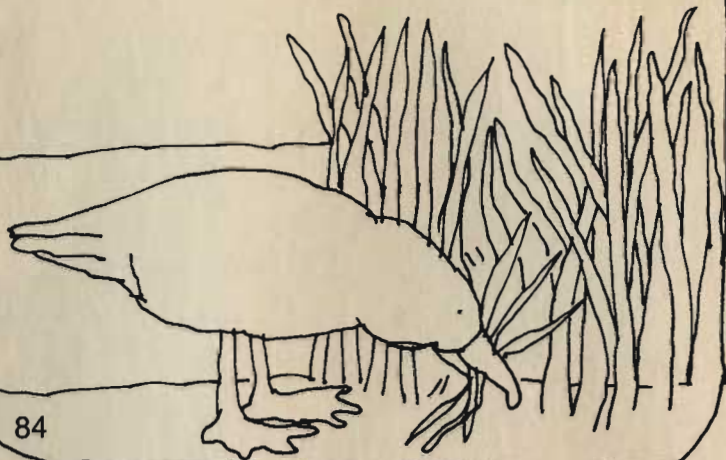


For instance, the gull does not learn *how* to fly,



83

but it does learn *where* to fly in order to find good materials to build a nest.



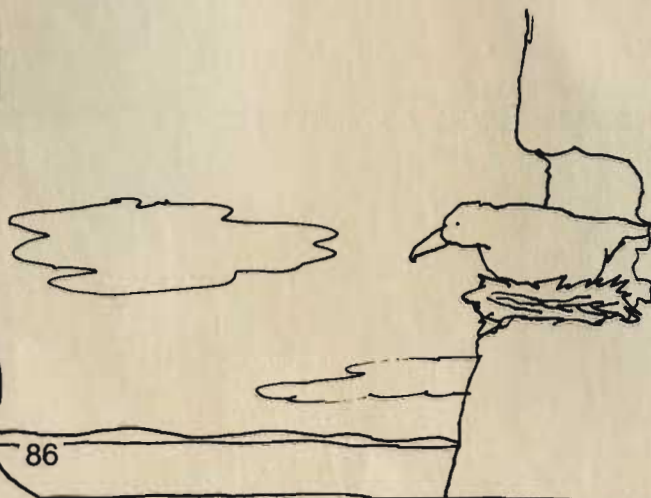
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The gull does not learn to build a nest,



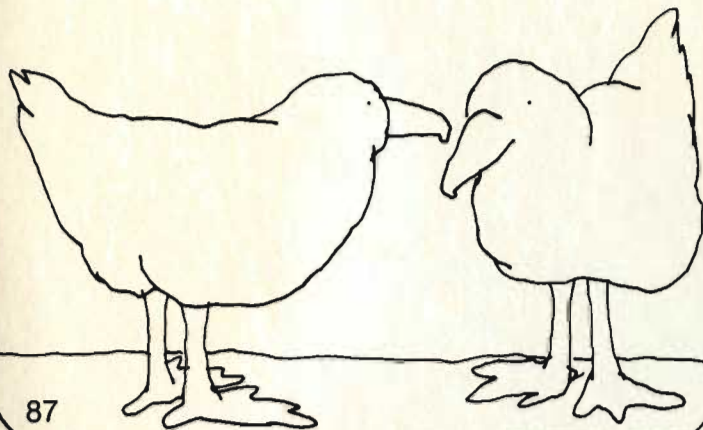
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but it does learn where a good place for a nest is.



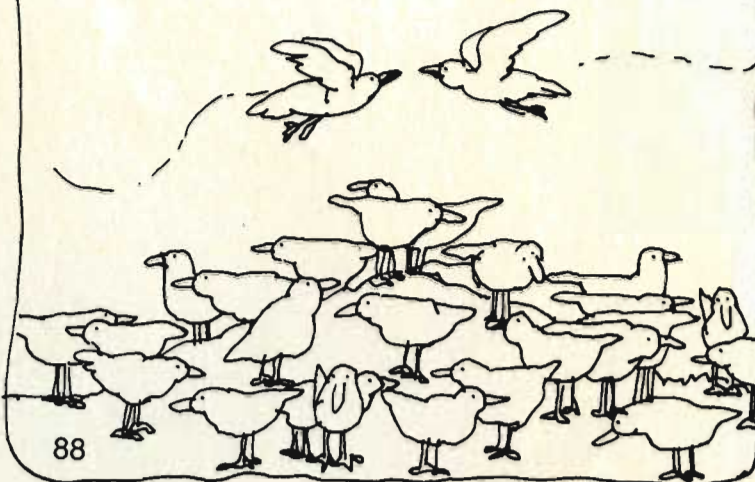
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The gull does not learn to mate,



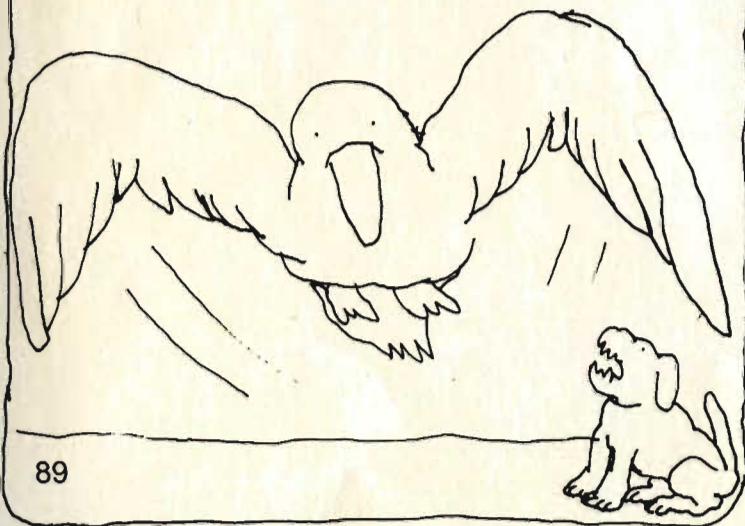
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but it does learn to recognize who its mate is.



88

The gull does not learn to escape predators,
but it does learn who is likely to be dangerous.



89

**THE
END**

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