

TRUE FALSE

1. A given reflex always occurs in the same, stereotyped way.

 

2. Only animals that are large enough are able to detect and follow a chemical gradient.

 

3. Desert ants have several sensory modalities for finding the entrance to their nest.

1. This is false. Some reflexes (e.g. the scratch reflex in dogs) have a warm-up period, and some reflexes exhibit fatigue.
2. This is false. Even bacteria can detect a chemical gradient, by comparing (while moving) the concentrations at two different times.
3. This is true. The desert ants rely on a combination of odometry and a polarization-based compass to find the general area of their nest. They then use visual pattern matching and odour recognition to pinpoint the entrance.