Cells cannot remain alive outside certain limits of temperature, and much narrower limits mark the boundaries of effective functioning.

Enzyme systems of mammals and birds are most efficient only within a narrow range around 37℃; a departure of a few degrees from this value seriously impairs their functioning.

Even though cells can survive wider fluctuations, the integrated actions of bodily systems are impaired.

Other animals have a wider tolerance for changes of bodily temperature.

For centuries it has been recognized that mammals and birds differ from other animals in the way they regulate body temperature.

Ways of characterizing the difference have become more accurate and meaningful over time, but popular terminology still reflects the old division into "warm - blooded" and "cold - blooded" species; warm - blooded included mammals and birds, whereas all other creatures were considered cold - blooded.

As more species were studied, it became evident that this classification was inadequate.

A fence lizard or a desert iguana-each cold - blooded-usually bas a body temperature only a degree or two below that of humans and so is not cold.

Therefore the next distinction was made between animals that maintain a constant body temperature, called homeotherms, and those whose body temperature varies with their environment, called poikilotherms, But this classification also proved inadequate.

because among mammals there are many that vary their body temperatures during hibernation.

Furthermore, many invertebrates that live in the depths of the ocean never experience a change in the chill of the deep water, and their body temperatures remain constant.

The current distinction is between animals whose body temperature is regulated chiefly 'by internal metabolic processes " and those whose temperature is regulated by, and who get most of their heat from, the environment.

The former are called endotherms, and the latter are called ectotherms.

Most ectotherms do regulate their body temperature, and they do so mainly by locomoting to favorable sites or by changing their exposure to-external sources of heat.

Endotherms (mainly mammals, and birds) also regulate their temperature by choosing favorable environments, but primarily they regulate their temperature by making a variety of internal adjustments.