

## An Introduction to Mimicry Patterns and Defense Mechanisms in Animals: Lessons From Nature

Saeed Shafiei Sabet<sup>\*1</sup>, Anahita Alizadeh<sup>1</sup>

To survive, animals must defend themselves against predators. For this reason, a series of abilities and adaptations have evolved to enable animals to defend themselves. Anti-predatory signals, such as mimicry and camouflage, facilitate animals to avoid predation and are discussed in this article. Species adopt aposematic colouration, Mullerian mimicry and Batesian mimicry to send warning signals to their predators. As a result of mimetic patterns and related strategies, animals and their offspring have a better chance of enhancing their survival and passing on their genes. Effective camouflage is one of the methods used to avoid detection from predation and is common in many species. A greater understanding of mechanisms related to mimetic patterns and camouflage in animals has the potential to further develop the science of biological inspiration. For example, camouflage methods can be applied and used in military industries. As such, "lessons from nature" can help develop peaceful and preventive methods for passive defense.

**Keywords:** Predator, Bioinspiration, Camouflage, Antipredator, Ecology, Military Industries

<sup>\*</sup> Corresponding Author, Assistant Professor, Tel: (+98)9111447909, Fax: 013-44323600, E-mail: s.shafiei.sabet@guilan.ac.ir

<sup>1</sup> Fisheries Department, Faculty of Natural Resources, University of Guilan, Sowmeh Sara, Iran