

enemy. The honey bee has, of course, many mimics, of which the common drone fly is a familiar instance.

Nor is protective resemblance confined to invertebrates. We find it in animals, birds, fish and various reptiles. The wild rabbit is a common example of it. Not so common, but a more striking instance of it, may be found in the zebra. Travellers in Africa have found themselves at night in the presence of zebras, and only been aware of the fact by their breathing. Had the zebras been black, or had they been white, they would have been easily visible, but in the starlight night, the combination of black and white stripes blend exactly with the twilight, and so render them invisible.

Some animals, moreover, possess a variable protective resemblance. We have an example of this in the chameleon, which adapts its colours according to its surroundings, an adaptation which is brought about by the expansion and contraction of certain pigment cells. The same phenomena may be observed in the Arctic hare, and the Arctic fox, animals which change their colour according to the season, brown in summer, and snowy white in winter. Among birds numerous instances of protective resemblance may be noticed; and so too with the eggs of many of our wild birds, which so closely resemble the shingle in which they are laid as to be unnoticeable.

Thus we find that there are two kinds of mimicry. In the one the mimic is really weak and defenceless, but by assuming the appearance of some better armed and perhaps savage species, acquires also the latter's evil reputation. This is called Batesian mimicry. In the other we have the real hard cases, creatures which are as well protected by unamiable qualities as they well can be; and which imitate equally disagreeable beings merely for the sake of the additional free advertisement of their ill qualities which the latter afford. This is called Mullerian mimicry.

Mimicry depends for its effective expression upon the power that all the higher animals have of memorizing their experiences. The puppy which captures the bee and is stung learns to avoid such dangerous playthings. In this way the death of one or two individuals frees the whole species from danger of attack by that particular puppy. Moreover, any other kinds of bees, or of other insects resembling in appearance the first one, would also be looked upon with suspicion and avoided. So that the deaths of these one or two individuals would have the effect of protecting every kind of insect that resembled them in appearance.