Article published on February 13th 2012 | Business

These rewards, in turn, reinforce the behavior of pollinators. However, specialization in one type of pollinator to ensure a more efficient transfer of pollen, produced a morphological and structural increasing specialization in orchid flowers to ensure the attraction of a single species of insect.

This central point in the evolution of interspecific relationships between orchids and their pollinators was caught by Darwin to study the British species and some exotic species of this family. For example, the species of Madagascar Angraecum sesquipedale its flower has a spur on more than 30 cm whose background is filled with nectar. Darwin tried unsuccessfully to remove pollinia from the flower using needles. He could only do so after entering to the bottom of the ram cylinder with a diameter of 2.5 mm and pull back out, because at that time was attached to the cylinder viscidium. Darwin reasoned that when a butterfly trying to reach with his trunk to the bottom of the spur to suck the nectar, once to withdraw their proboscis, would pollinia attached to its head. By visiting the next flower, it would be pollinated and the butterfly would deposit pollinia on the stigma. 11 This reasoning implies that the insect pollinator of Angraecum sesquipedale should be a butterfly with a proboscis of over 30 cm in length, an idea it sounded ridiculous to biologists of the time. However, Darwin's prediction could be tested in 1903 , when a moth with a proboscis of that size was discovered in Madagascar and called Xanthopan praedicta morganii . The subspecific epithet "Predicta" of course, refers to its existence was predicted by Darwin.

The butterfly is attracted to the flower fragrance it gives off, especially at night. As you approach the flower unrolled its proboscis and inserted into a cleft rostellum leading to ram. Once you finish suck the nectar from the base of the spur, lift your head while removing the proboscis of the spur. When you perform this movement causes the viscidium stick to your head or other part of your body. The viscidium penetrates a small pedicel (the caudicle) which carries at its end pollinia. When the butterfly ends of winding his trunk and flies to another flower, the caudicle dehydrated, dried, which determines its angle is changed from the body of the insect, so that when you visit the next flower and insert your tube in it, will be faced pollinia, and then attached, to the stigma. Once a plant pollinia are attached to the stigma of the flower of another plant, meaning that pollination has occurred, stop producing flowers and their fragrance tepals wither soon after. However, the process of pollen transfer, fertilization and formation of thousands of new individuals has been secured.

Many orchids, as the case of Angraecum sesquipedale , are pollinated by moths, and for this reason, flowers have light colored, almost white and produce fragrance during the afternoon or evening. Examples of this type of orchid species are Bonatea speciosa , Habenaria epipactidea , gender Satyrium , Disa cooperi and D.ophrydea . 12 -pollination by butterflies, on the other hand, has evolved in several genera of orchids. The flowers of these species have bright colors and reward their pollinators with nectar.

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