

**The Communication of Plants and Creatures in the World**Hassan Vatandoost^{1,2}

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Abstract

Communication is an essential factor for the interactions between species and the structure of their communities. Plant and other world creature interactions are particularly diverse due to the complex nature of their mutualistic relationships. The main important communication of plant are: carrion flowers, living stone plant, butterfly-egg mimicry, orchid mimics bee, bird dropping mimicry, little dragon monkey, large duck orchid, the white egret orchid, dove orchid, tulip orchid, cockleshell orchid, parrot, a naked man orchid, tiger orchid, happy alien, lips, dancing lady orchid. Many arthropods looks like the flower, sticks, seeds, thorn, leaf. These phenomens of creatures in the world is due to self-protection using mimicry and camouflage. Mimicry is the similarity of one species to another. Nature communication will provide a guideline to use these phenomenon for human for example mimicry of X-ray telescope from other creatures, Solar biomimicry, wind turbines, The Solar Sailor; The remarkable eyes of a marine crustacean could inspire the next generation of DVD and CD players, wasp "sniff" explosives and illegal drugs, and remote control.

Key words: Communication, Plant, World, Creatures

Carrion flowers (*Amorphophallus titanum*), also known as corpse flowers or stinking flowers, are flowers that emit an odor that smells like rotting flesh. Carrion flowers attract mostly scavenging flies and beetles as pollinators. Some species may trap the insects

temporarily to ensure the gathering and transfer of pollen. Insects attracted to carrion flowers include flesh flies (*Sarcophagidae*), blowflies (*Calliphoridae*), house flies (*Muscidae*) and some beetles (e.g., *Dermestidae* and *Silphidae*) [1] (Figure.1).



Figure 1: Carrion flowers (*Amorphophallus titanum*) Living stone plant (*Lithops salicola*)

This plant looks like the stone. They avoid being eaten by blending in with surrounding rocks and are often known as pebble plants or living stones [2] (Figure.2).







Figure 2: Living stone plant (*Lithops salicola*)

Butterfly-egg mimicry by the plant (*Passiflora spp*)

Animal mimicry by plants as defense from herbivores, has been paid dramatically. Plant response to butterfly eggs can be seen. Butterfly species lay eggs on the leaves of *Passiflora* and the caterpillars then emerge and feed on the plant, often completely defoliating it in just a few days. To combat this, *Passiflora* has evolved specialized egg mimic structures that deter gravid butterflies from laying their eggs on the leaves. For many years, the best known case of defensive animal mimicry by plants that was also tested experimentally was of butterfly egg mimicry. It has been proposed to reduce egg laying by *Heliconius* butterflies on *Passiflora* species, but to also operate for other plant and butterfly taxa. like leaf

necrosis promoting desiccation of eggs. To gain a deeper insight into the arms race between butterflies and plants. Animal mimicry by plants as defense from herbivores comprises two general types: direct animal mimicry, and mimicry of cues about animal action. The direct type includes bee, wasp, caterpillar, ant, aphid, beetle, and butterfly, eye, and snake mimicry. The occurrence of yellow structures mimicking butterfly eggs and their extensive diversity of defense compounds. The spots mimic the eggs of butterfly whose larvae are specialized herbivores of the plant, the idea is that duped butterfly avoid ovipositing on leaves that already have eggs so as to spare their offspring unnecessary competition for resources [3] (Figure .3).





Figure 3: Butterfly-egg mimicry by the plant (*Passiflora spp*)

Orchid mimics bee (*Ophrys apifera*)

Ophrys apifera plant is known as the bee orchid. It serves as an example of sexually deceptive pollination and floral mimicry, as well as of a highly selective and highly evolved plant–pollinator relationship. Bee males have been observed attempting to copulate with the flowers, which emit allomones that mimic the scent of the female bee. These allomones are also known to attract some other bee species. In addition to chemosensory mimicry, the labellum

of the flower acts as a visual decoy that the male bee confuses for a female. It is believed that male bees preferentially select orchids with the most bee-like labellum and attempt copulation, at which point the pollinia stick to the bee during the pseudocopulation. This achieves pollen transfer and, potentially, pollination. Some orchids emit the sex pheromone of a particular wasp species. Males come and “mate” with the flower, getting dusted with pollen [4] (Figure.4).





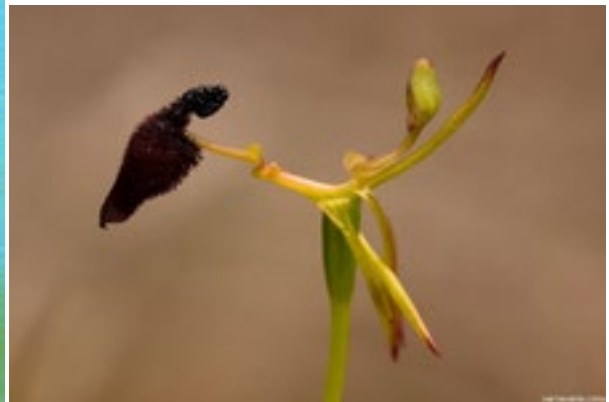




Figure 4: Orchid mimics bee (*Ophrys apifera* sub species)

Bird dropping mimicry may reduce the chances of leaves being accidentally ingested by large herbivores by making the leaf appear to carry a potential source of disease [5] (Figure.5).



Figure 5: Bird dropping mimicry

Little dragon monkey (*Dracula simia*)

There are over 20,000 orchid species in the world, and many of them are quite amazing. Orchids produce the most interesting, rare, and exotic flowers in all different colors, shapes, smells, and variegations. They also have a number of interesting tricks regard-

ing fertilization. It's a bit scary and sad to think that many of the exotic ones are endangered or on the verge of extinction. Native to the tropical highland forests of Southeastern Ecuador, the *Dracula simia*-which translates to "little dragon monkey"-thrives at altitudes around 2,000 meters [6] (Figure.6).







Figure 6: *Dracula simia* plant looks like a monkey

large duck orchid (*Caleana major*)

Commonly known as the large duck orchid, is a small orchid found in eastern and southern Australia. This terrestrial plant features a remarkable flower, resembling a duck in flight. The flower is an at-

tractant to insects, such as male sawflies which pollinate the flower in a process known as pseudocopulation. In 1986 this orchid was featured on an Australian postage stamp [7] (Figure.7)



Figure 7: *Caleana major*, commonly known as the large duck orchid

The White Egret Orchid (*Habenaria radiata*)

Named for its beautiful flowers, which have a striking resemblance to a graceful white egret in flight. Sometimes called the fringed

orchid, this hardy terrestrial orchid, which is native to Japan [8] (Figure.8).



Figure 8: The White Egret Orchid (*Habenaria radiata*)

Dove Orchid (*Peristeria elata*)

It is found from Central America to Ecuador and Venezuela and is the national flower of Panama [9] (Figure.9).

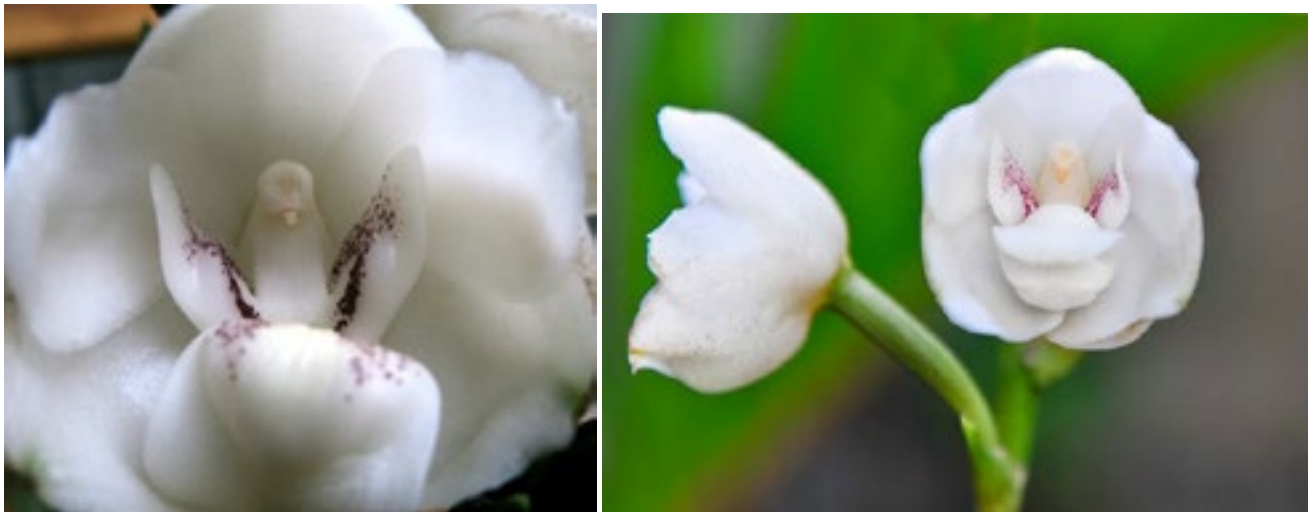


Figure 9: Dove Orchid (*Peristeria elata*)

Tulip Orchid (*Anguloa uniflora*)

Also known as the cradle orchid, and boat orchid, the flower looks like it has a baby held in a cradle. Each flower is up to 10cm wide

and has a fragrant minty or cinnamon perfume. It is found in Venezuela, Colombia, Ecuador, and Peru [10] (Figure.10).



Figure 10: Tulip Orchid (*Anguloa uniflora*)

Cockleshell Orchid (*Prosthechea cochleata*)

The cockleshell orchid, also known as the clamshell orchid, has pseudo bulbs that look like hoods growing from the plant, from which the flower blooms. It is native to Central America, the West

Indies, Colombia, Venezuela, and southern Florida and is the national flower of Belize, where it is also known as the black orchid [11] (Figure.11).



Figure 11: Cockleshell Orchid (*Prosthechea cochleata*)

Parrot (*Impatiens psittacina*)

It is known variously as the "parrot flower" or "parrot balsam" is a species of balsam from Southeast Asia [12] (Figure.12).



Figure 12: Parrot (*Impatiens psittacina*)

A naked man orchid (*Orchis italica*)

The naked man orchid or the Italian orchid, is a species of orchid native to the Mediterranean Basin. Lobed lip (labellum) of each flower which mimics the general shape of a naked man [13] (Figure.13).



Figure 13: A naked man orchid (*Orchis italica*)

Tiger orchid (*Grammatophyllum speciosum*)

It is also called giant orchid, tiger orchid, sugar cane orchid or queen of the orchids, is a species of orchid native to Indonesia [14] (Figure.14).



Figure 14: Tiger orchid (*Grammatophyllum speciosum*)

Happy Alien (*Calceolaria uniflora*)

Calceolaria uniflora (syn. *Calceolaria darwinii*, known as Darwin's slipper) is a perennial plant. It is originally from the southern part of South America [15] (Figure.15).



Figure 15: Happy Alien (*Calceolaria uniflora*)

Lips (*Palicourea elata*)

Formerly *Psychotria elata*, commonly known as girlfriend kiss. Is a tropical plant that ranges from Central to South American rain forests in countries such as Mexico, Costa Rica, Ecuador, Panama, and Colombia [16] (Figure.16).



Figure 16: Lips (*Palicourea elata*).

Dancing Lady Orchid (*Gomesa varicosa*)

It is distributed across much of South America, Central America, Mexico and the West Indies [17] (Figure.17).



Figure 17: Dancing Lady Orchid (*Gomesa varicose*)

Many of insects looks like flower of different plants (Figure.18)













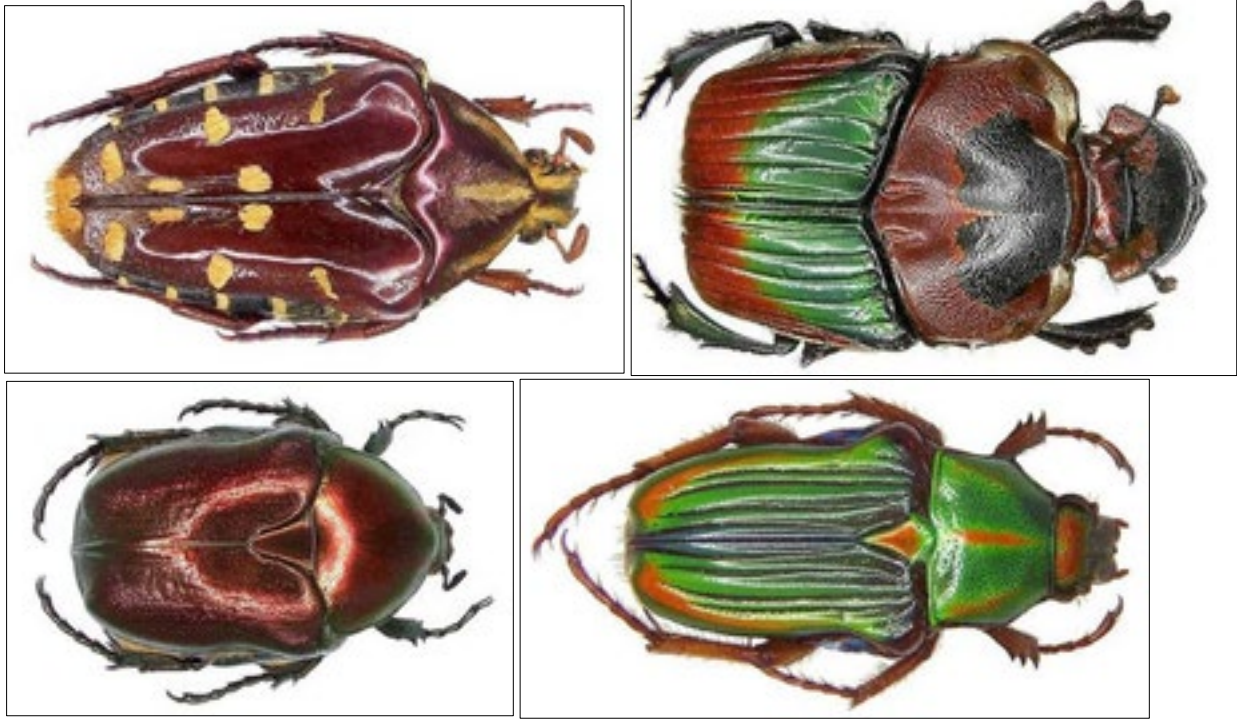


Figure 18: Mimicry of insects look like flow

Some of other arthropods looks like a thorn of plants (Figure.19)







Figure 19: Some of other arthropods looks like a thorn of plants

Some arthropods looks like stick of plants (Figure 20)



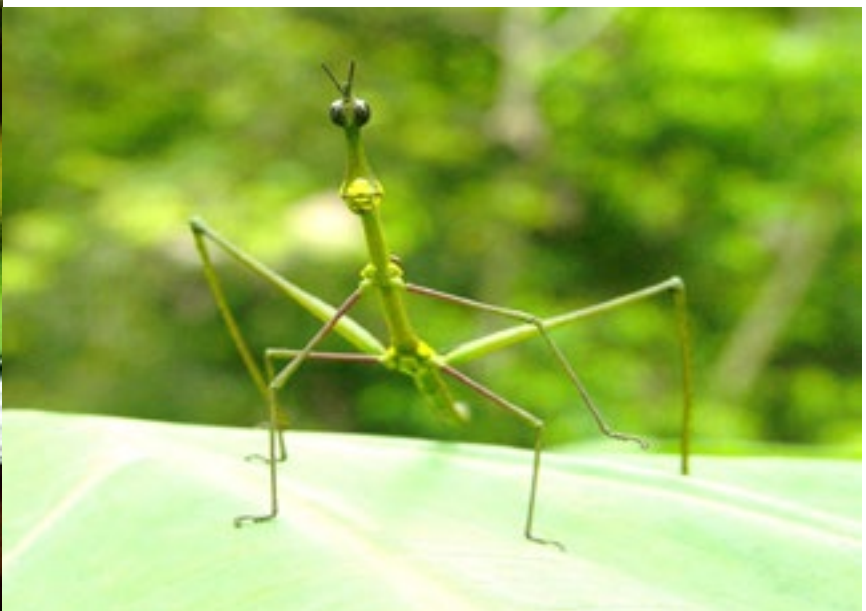






Figure 20: Some arthropods look like sticks

Some of arthropods look like leaves of plants (Figure .21)









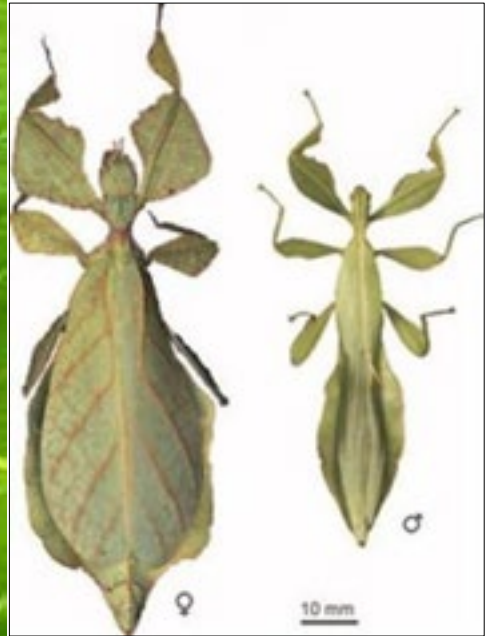






Figure 21: Some of arthropod looks like leaf of plants

Some of arthropod lay eggs like seed of some plants (Figure.22)



Figure 22: Eggs and adults arthropods stick looks like the seed of plant

Many species in Thomisidae have evolved to look identical to the parts of a specific type of flower. These crab spiders are often referred to as flower spiders or, more specifically, orchid-mimic spiders, and sometimes even Flower Crab Spiders (Figure.23).



Figure 23: Flower Crab Spiders Data availability statement: Applicable

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Conflicts of interest: The author declare that there is no conflict of Interest . All the images used as Google scholar

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