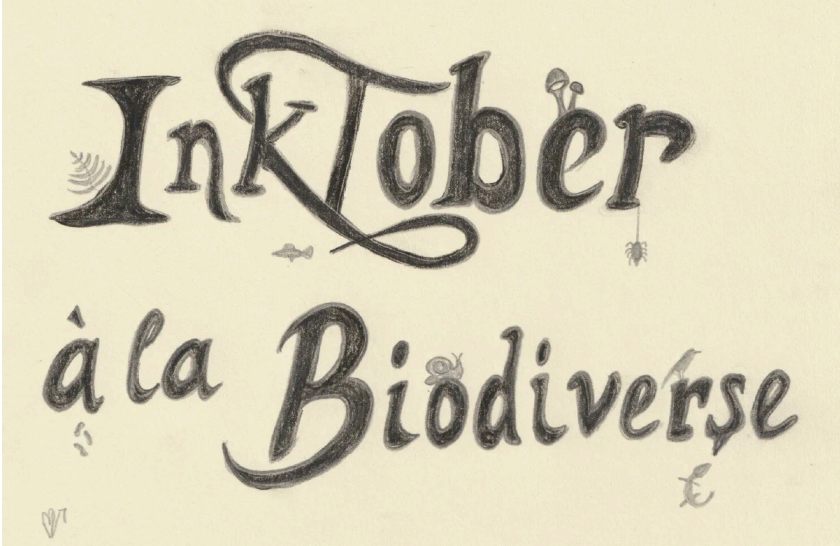
CREATURES

Inktober à la Biodiverse, day 14 to 19

Biodiversity covers the daily drawing prompts.



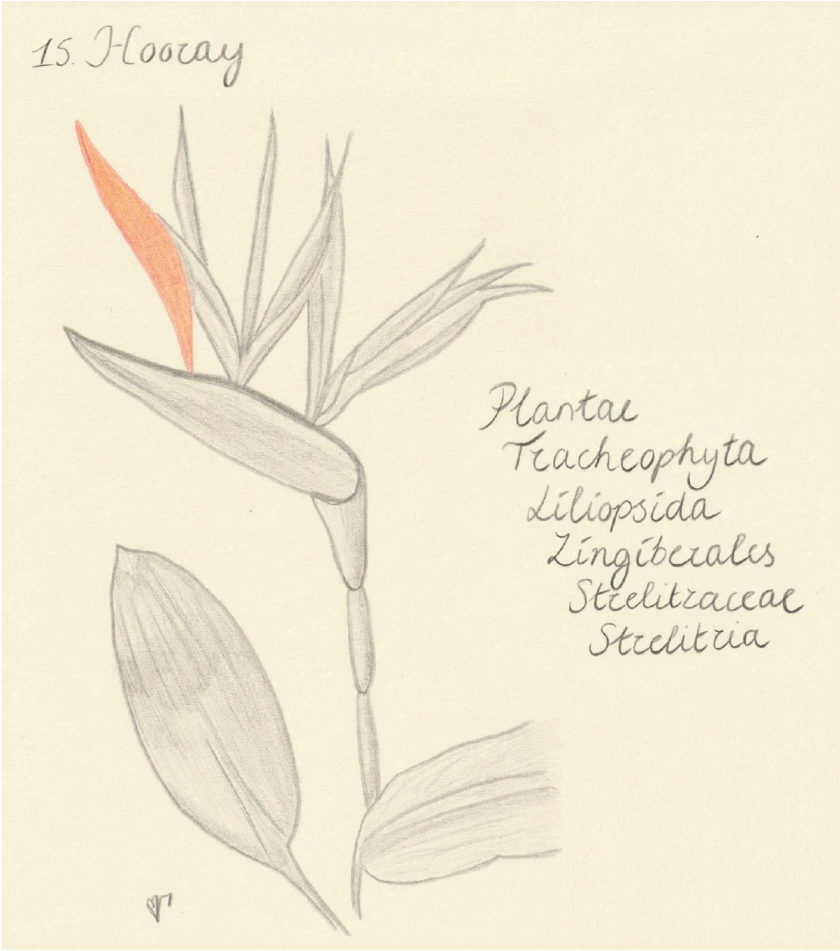


Based on 'Vrouwenschoentje - lady's slipper - Cypripedium calceolus 4' by Bouke ten Cate. Licensed under CC BY 4.0.

14. Lady - Lady's slipper orchid

The **lady's slipper orchid** has an appealing flower. So appealing that it attracts pollinators, including bees and flies, that unknowingly enter a horror house. Pollinators are usually attracted to flowers that provide nectar, an important source of carbohydrates. An insect enters through the opening on top of the pouch-shaped lip, and the orchid essentially becomes a trap. The only way out is through one of two small openings at the base of the pouch, and to reach them the insect must squeeze past the stigma (pollen-receiving female part) and an anther (pollen-bearing male part). If the insect is too big, it usually dies inside or gets stuck. If the insect is the right size, it pollinates the orchid on its way out, as it leaves pollen on the stigma and picks up new pollen from the anther. There is no reward at the end of the trip though. None of the slipper orchids is known to produce nectar or any other reward, so the pollinators are

deceived. Some slipper orchids are pollinated by various insects, but about two-thirds of the insect-pollinated species have highly specialized flowers that are pollinated by a single insect species or a group of closely related species[1].



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15. Hooray - Bird of paradise plant

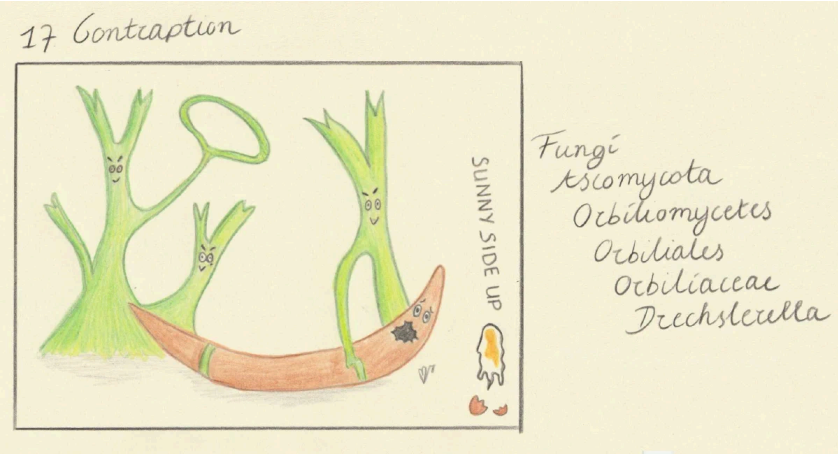
The **bird of paradise plant** looks like a party, and is named for its resemblance to a bird of paradise. What is striking about the plant's appearance is not only its exuberant look, but also the intense colours of its flowers. The flower's colour come from typical plant pigments (such as carotenoids and anthocyanins), but the colour of the seeds comes from something else. Researchers found that the orange colour of the fleshy coverings of the seeds (arils) is mainly caused by bilirubin, a pigment that until then had only been found in animals[2]. It is unclear how the plant produces this pigment and whether it may have other functions. Whatever the underlying mechanisms, nature has once again come up with an original way to add some spark, in this case to an extraordinary plant.



Based on 'Galathée yéti, un habitant des profondeurs abyssales (Ifremer 00569-68091 - 25272)' by Alexis Fifis (Ifremer). Licensed under CC BY 4.0.

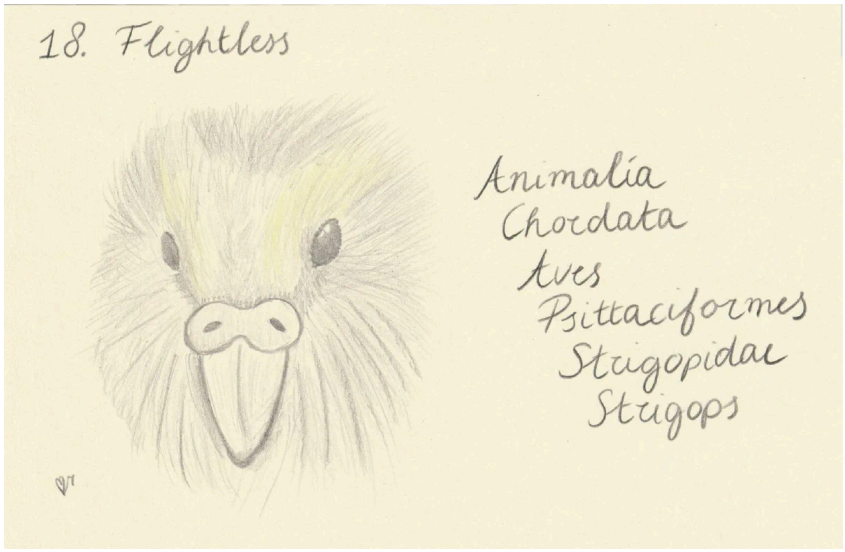
16. Gangly - Yeti crab

The **yeti crab** is an amazing organism and the family to which these crabs belong was first described in 2005. Yeti crabs live at hydrothermal vents and methane seeps (places where chemical-rich fluid escapes from the seafloor, hot at vents and cold at seeps) on the deep-sea floor, where, like many other animals there, they rely on chemicals (chemosynthesis) rather than sunlight (photosynthesis) to survive. The hard work is not done by the crab itself but by bacteria living on the yeti crab's claws. The bacteria use the energy in chemicals, such as hydrogen sulfide, to make organic compounds. In one species, researchers found that the crab feeds on the bacteria that it has farmed on its claws. This species waves its claws in the fluid leaking from the seep, which is thought to boost the bacteria's growth[3].



17. Contraption - Nematode-trapping fungus

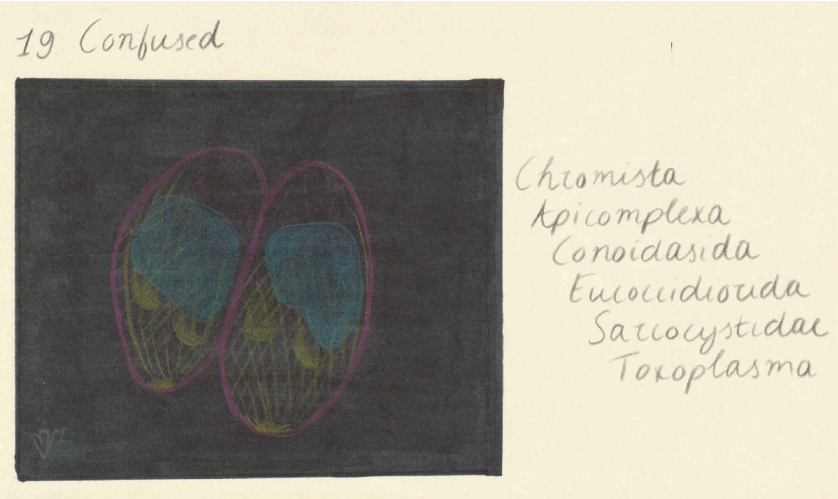
There are about 700 species of fungi that attack and feed on living nematodes[4]. Depending on the species, the fungus can use its hyphae, spores, toxins, or dedicated structures to attack the nematode. Among the latter, the **nematode-trapping fungi** have evolved constricting rings as intricate trapping mechanisms and several types of adhesive traps. The traps can be made in response to the presence of prey, as the nematodes reveal themselves by releasing chemicals called ascarosides. Once the nematode is caught, a penetration tube pierces the nematode's cuticle, paralysing it, and the nematode is subsequently digested by the fungal hyphae growing inside it.



Based on 'Kākāpō (42241578612)' by Kimberley Collins. Licensed under CC BY 2.0.

18. Flightless - Kākāpō

The **kākāpō** is a nocturnal, plant-feeding parrot with an interesting mating system. Kākāpō are the only flightless birds in which lekking occurs[5]. A lek is a place where males assemble and compete to be able to mate with a female. Once mated, the female leaves the site and rears the chicks alone. Breeding usually happens only every 3-4 years and seems to be linked to the fruiting and seed production of local trees[6]. Only 51 individuals were left in 1995, but conservation efforts already increased this number to 86 by 2005[5].



Based on 'Toxoplasma parasites (tachyzoites) in a fibroblast host cell' by Morne Arin (Ksena Longrin). Licensed under CC BY 4.0.

19. Confused - Toxoplasma

Toxoplasma is a protist that parasitizes warm-blooded hosts. The parasite can only reproduce sexually in cats or other felines. When intermediate hosts are infected, scientists have observed more risk taking, which is thought to help transmission of the parasite to its final (feline) host. In hyenas, infected cubs came closer to lions living in the same habitat than uninfected cubs[7]. Whether this helps transmission is not so clear, because lions rarely eat the hyenas they kill. The riskier behaviour may thus be a side effect of traits that evolved to influence other hosts, such as rodents.

Dr. Bertanne Visser, Research Associate of the Fonds de la Recherche Scientifique at the University of Liège, Gembloux, Belgium.

1 Pemberton RW. 2013. Pollination of slipper orchids (Cypripedioideae): a review. Lankesteriana 13: 65–73.

2 Pirone C *et al*. 2010. The animal pigment bilirubin identified in *Strelitzia reginae*, the bird of paradise flower. HortScience 45: 1411–1415.

3 Thurber AR *et al*. 2011. Dancing for food in the deep sea: bacterial farming by a new species of yeti crab. PLoS ONE 6: e26243.

4 Jiang X *et al*. 2017. Nematode-trapping fungi. Microbiol Spectr 5: FUNK-0022-2016.

5 Powlesland RG *et al*. 2006. A parrot apart: the natural history of the kakapo (*Strigops habroptilus*), and the context of its conservation management. Notornis 53: 3–26.

6 Cockrem JF. 2006. The timing of breeding in the kakapo (*Strigops habroptilus*). Notornis 53: 153–159.

7 Gering E *et al*. 2021. *Toxoplasma gondii* infections are associated with costly boldness toward felids in a wild host. Nat Commun 12: 3842.

HOW TO CITE THIS ARTICLE

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