

# Stingless bees: Jataí *Tetragonisca angustula*(Latreille, 1811) Brazil.

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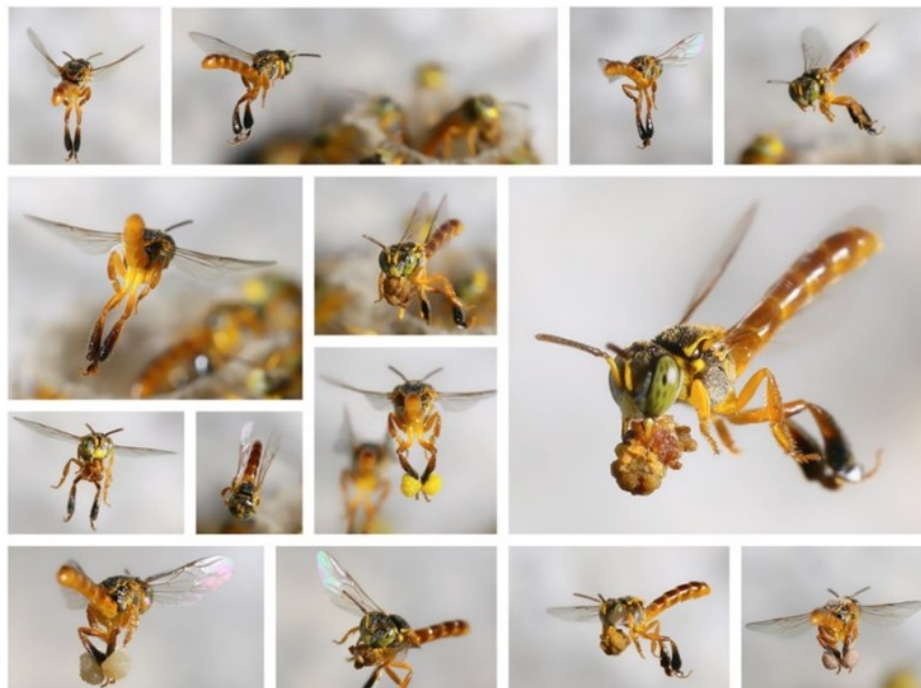
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The bee is golden-yellow and has black corbiculae, a collecting device where pollen is collected. Furthermore, it has no sting. It is a very gentle bee; At most, it gives a few small pinches or sticks wax on intruders when it feels threatened. The Jataí Bee is native to Brazil, with a wide geographic distribution. The Jataí bee has a record of occurrence in five regions of Brazil. In the Northeast region, it is found in the states of Bahia, Maranhão, Ceará, Paraíba, and Pernambuco, from Rio Grande do Sul to Mexico. To establish their nests, they use roof eaves, corners, internal walls, parapets, poles, abandoned light boxes and mailboxes, and compartments in general. There are records of Jataí bees nesting even inside items of clothing, in abandoned wardrobes. In rural areas, they are usually sheltered in trees or hidden spaces (Figure 1) [1-11].



**Figure 1.** Jataí *Tetragonisca angustula* (Latreille, 1811) Brazil. Source: [www.vivaterra.org.br/insetos.htm#abelhasnativas](http://www.vivaterra.org.br/insetos.htm#abelhasnativas)

The bees are very resilient and have great power of adaptation, nesting in large cities in surprising locations (if there is enough space for all the essential nest structures). They are extremely clean and hygienic bees. The Jataí is considered the cleanest of all stingless bees as they do not land on any waste. They rarely collect water; they take it from the flowers' nectar. On low-temperature nights, they close the entrance to the straw with a very thin wax film with holes in it so that, together with the constant flapping of their wings, they allow air to circulate [1-11].

They only work in environments above 22°C, with relative air humidity of approximately 25% and lots of light. The guards form a “sanitary barrier”, preventing jataí bees with fungus from entering the nests. The bees that control access to the nests recognize chemical changes in the body of the insects that have encountered the fungus and prevent their entry to the point of aggressively preventing specimens exposed to the fungi that can contaminate the colony from entering the nest. Jataí guards control access to the nests and recognize chemical changes in the body of bees that have had contact in the field with the fungus *Beauveria Bassiana* (Bals.) Vuill. (Deuteromycetes: Moniliaceae), used as a biopesticide, preventing its entry [1-11].

Like all apids, they have an organized society divided into workers, drones, and queens. Therefore, the hive has an average of 5,000 (5 thousand) bees. They contribute to the maintenance of our ecosystem. Only native bees and a few other insects can pollinate our forests. There is a direct relationship between the pollination of native plants, fruit trees for example, and bees native to our territory. These species can contribute to greater productivity and quality of fruit crops such as Jabuticaba, pineapple, guava, and passion fruit. Honey is more liquid than honey from stinging bees [1-11].

The moment it is produced, it begins to ferment. It sounds bad, but it's what creates the slightly acidic flavor that chefs love to create new dishes with. That sourness with a touch of herbs is what matters so much. It ends up being combined with incredible ingredients to create successful gourmet menus. The different flavors resulting from this fermentation make this honey so valuable. As it is known locally, the mosquito bee prefers small, low-lying flowers. Their nest can be easily located in nature, as they are built in places that are easy to see and access, making the species vulnerable to extractive actions by honey growers. Fires, deforestation, climate change, and the disordered use of pesticides have represented a strong reduction in jataí colonies in the region [1-11].

Preserving the bee not only guarantees access to its tasty honey but also means maintaining the balance of the ecosystem and the diversity of human food, as this small animal does a great job, of being responsible for the pollination of many plant species in Brazilian biomes. . Sending bee honey to the Ark of Taste means preserving local biodiversity, valuing the practices and knowledge of indigenous communities and traditional peoples, and making bee honey a source of pride for Food communities. In the semi-arid region of Bahia, rural communities consider that the use of jataí bee honey has an anti-inflammatory effect, being indicated mainly for curing inflammation in the eyes, bronchitis, coughing, and healing, among other uses of traditional preparations [1-11].

#### **Examples of flowers that the Jataí bee likes, depending on their flowering months January, February, and March:**

Pin, pink-flowered aloe, coleí – several *Coreopsis* L. Sharsmith (Asteraceae), purple wren, crown of christ, fennel, star jasmine, basil. **April, May, and June:** Astrapeia, lilac azalea, parrot beak, dahlia – several, and basil, rattle, and purple

eupatorium. **July, August, and September:** Rue, pink azalea, parrot beak, carnation, pitanga, and guaco-smooth.

**October, November, and December:** Carnation, the crown of christ, fennel, star jasmine, orange trees, lemon trees, tangerines, basil, elderberry, and Tipuana [1-11].

### The Jataís have an organized society divided into:

**Workers** have a golden abdomen, opaque black head, and thorax. They do not have a stinger, but they have jaws that they use against insects that invade their colonies. They fly up to a thousand meters on average to collect nectar, pollen, and resin. The number of workers can vary from a few hundred to 5,000 per hive. The workers perform various functions such as cleaners, sentries, and collectors.

**Drones** are few, around four, and are bred only when releasing a new family. They resemble workers but are larger and have a long abdomen; Their function is to fertilize the virgin queen, and after fertilization, they disappear.

**Queen:** has an abdomen so disproportionate that it causes distress when fertilized, the abdomen doubles in volume and she loses the ability to fly. At the time of the nectar flow, its laying can reach 50 eggs per day. The virgin queen is skittish and flies only to be fertilized and form a new colony (Source: <http://www.abelhasjatai.com.br/as-abelhas-jatai/>) (Figure 2) [1-11].



**Figure 2.** Nest entrance: Source: <https://emsinapse.wordpress.com/2022/09/04/especie-do-dia-tetragonisca-angustula/>.

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