

Enrichment with living plants

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TO PLANT OR NOT TO PLANT? The addition of plants to primate enclosures is generally believed, in the absence of any research, to make the setting more pleasing for both observers and for occupants. Free ranging and wild callitrichid monkeys prefer to travel and to forage in the densest networks of thin, flexible tangles of vegetation (Chamove & Rohrhuber, 1989), so vegetation should be important.



WHAT WE DID

- ◇ We hung 2 sizes of commercially-available flexible garden plastic mesh, small with 15 mm holes (Left Fig. extreme left ←), large 30 mm (Left Fig. extreme right ←), and one rigid 150 mm wooden trellis (Left Fig. middle ←) on the walls of the enclosures, 100 mm out from the walls.
- ◇ 30 cotton-top tamarins (*Saguinus o. oedipus*) lived in family groups. Data from 5 families was collected from the two parents, two oldest adult twins, and the two youngest twins.

- ◇ Into yellow grow-bags (left figure, bottom ↕) we planted annual runner beans ☀, nasturtium ☀, canary creeper ☀ (*Tropaeolum speciosum*), climbing beans, peas, sweet peas, black-eyed Susan

(*Thunbergia alata*), cathedral bells (*Cobaea scandens*), cucumber, morning glory (*Ipomoea*), melon, pumpkin, Scotch marigold (*Calendula*), and the perennial Russian vine ☀ (*Polygonum baldschuanicum*) (plants that grew well ☀).

- ◇ Comparisons were made after the trellis had been mounted for a month with no plants (left figure ↖) and compared with when plants had reached over 3 m high (right figure →).



WE FOUND...

The presence of plants reduced by half all recorded behaviours, both active (LEAP, RUN, WALK) and inactive (HANG, SIT, CLIMB) and both when animals were on the mesh ($F_{6,98} = 6.5, p < .0001$) and off the mesh ($p = .001$). When off the mesh, plants reduced CLIMBING and HANGING by almost half from 10%–23% to 5%–14% of the day. When on the mesh, plants reduced the same behaviours by half from 4%.

In stressful situations both high activity (e.g., RUNNING) and low activity behaviours (e.g., WALKING) increase, while during enrichment both decrease (Moodie & Chamove, 1990). With plants present all active behaviours decreased, both on and off the mesh, suggestive of enrichment.

The smooth walls, a part of the cage normally inaccessible to the monkeys, was now accessible and used over 10% of the day. But while monkeys preferred rigid wooden mesh, plants grew best on flexible plastic mesh.

WE CONCLUDE... Plants improve primate enclosures for the monkeys, even when monkeys are rarely seen to contact the plants.

REFERENCES

- Chamove, A.S. & Rohrhuber, B. (1989) Moving Callitrichid monkeys from cages to outside areas. *Zoo Biology*, 8, 151-163.
Moodie, E.J. & Chamove, A.S. (1990) Brief excitement beneficial to monkeys. *Zoo Biology*, 9, 275-286.