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THE EFFECT OF SEX AND COLOUR VISION STATUS ON INSECT PREY CAPTURE EFFICIENCY BY CAPTIVE AND WILD TAMARINS (*SAGUINUS* SPP.)

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The colour vision polymorphism present in most New World primates may represent an intermediate step between routine dichromacy of non-primate eutherian mammals and routine trichromacy of Old World primates. Alternatively the polymorphism may be an adaptation to a specific ecological niche. Whichever is correct, New World primates are of particular interest in this respect, as they provide a model system to study the functional significance of trichromatic colour vision. Theories for the evolution of trichromacy in primates focus on the efficient detection and selection of food, particularly ripe fruits and young leaves amongst dappled mature leaves. There is both theoretical and empirical support that trichromats are better at this task than dichromats. But are there any situations where dichromacy is advantageous? There are reports that dichromatic humans are better able to break camouflage. Applying this to dichromatic monkeys, they may detect camouflaged prey missed by their trichromatic conspecifics. We tested this hypothesis in tamarins (Saguinus spp.) both in a controlled experiment in captivity and in the wild. Overall, trichromats catch more prey than dichromats; however, dichromats catch a greater proportion of camouflaged prey than their trichromatic counterparts. The trichromats' overall advantage supports the maintenance of the polymorphism though heterozygote advantage, but the dichromats' exploitation of different (e.g., camouflaged) food may contribute to frequency-dependent selection on the different colour vision phenotypes.

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