

# The Purplish Jay rides wild ungulates to pick food

Ivan Sazima<sup>1</sup>

<sup>1</sup> Museu de Zoologia, Caixa Postal 6109, Universidade Estadual de Campinas, CEP 13083-970, Campinas, SP, Brazil.

<sup>1</sup> Corresponding author: [isazima@gmail.com](mailto:isazima@gmail.com)

Received on 15 April 2015. Accepted on 29 December 2015.

**ABSTRACT:** Corvids are renowned for their variable foraging behaviour, and about 20 species in eight genera perch on wild and domestic ungulates to pick ticks on the body of these mammals. Herein I illustrate and briefly comment on the Purplish Jay (*Cyanocorax cyanomelas*) riding deer and tapir in the Pantanal, Western Brazil. The jay perched on the head or back of the ungulates and searched for ticks, playing the role of a cleaner bird. Deer are rarely reported as hosts or clients of tick-picking birds in the Neotropics. The Purplish Jay is the southernmost Neotropical cleaner corvid reported to date. Given their opportunistic foraging behaviour, a few other *Cyanocorax* jay species may occasionally play the cleaner role of wild and domestic ungulates.

**KEY-WORDS:** *Cyanocorax cyanomelas*, foraging, cleaning behaviour, Pantanal, Western Brazil.

## INTRODUCTION

Corvids are renowned for their variable foraging behaviour, and about 20 species in eight genera ride wild and domestic ungulates to pick ticks, scabs, and other organic matter on the body of these mammals (Sazima 2011). In an overview of tick-removing birds in Brazil (Sazima 2007), I suggested that species of the genus *Cyanocorax* would be occasional parasite cleaners of wild large herbivores or domestic livestock.

## METHODS

To test my supposition on the cleaner role of *Cyanocorax* jays, I searched for photos of these corvids perched on wild ungulates in photo archives online and found three substantiated records of the Purplish Jay (*Cyanocorax cyanomelas*) perched on such ungulates. Herein I illustrate this jay perched on deer and tapir in the Pantanal, Western Brazil, and briefly comment on its role as a cleaner bird of these two ungulates, based on the photographic records and correspondence with two colleagues (see Acknowledgements).

## RESULTS

A Purplish Jay was recorded searching for ticks on

a Gray Brocket Deer (*Mazama gouazoubira*) on 25 October 2014 at 16:52 h at the Pouso Alegre Lodge (16°30'37"S, 56°44'13"W, 120 m a.s.l.), in the north Pantanal of Poconé, Mato Grosso, Western Brazil. The jay perched on the deer's head and picked ticks (and possibly scabs and other organic substances) from within the ears (Figure 1). During the inspection and pecking, the deer appeared oblivious to the bird's behaviour (B. P. S. Campos Neto, pers. comm.). Another record of this jay species was made with a camera trap on 23 November 2011 at 07:25 h in central Pantanal (about 19°17'S, 55°43'W, 130 m a.s.l.), northwest of Campo Grande, Mato Grosso do Sul, Western Brazil. The jay perched on the head of a South American Tapir (*Tapirus terrestris*) resting on an excavation made by the Giant Armadillo (*Priodontes maximus*) (Desbiez & Kluwyber 2013). The bird appeared alert (Figure 2) and presumably searched for ticks, scabs and organic substances near or within the ears of the tapir. The last record I found of the Purplish Jay on wild ungulates was made on 09 September 2010 at the Pouso Alegre Lodge (16°30'37"S, 56°44'13"W, 120 m a.s.l.), in the north Pantanal near Poconé, Mato Grosso, Western Brazil. The bird also rode a brocket deer, identified on the photo as the larger Marsh Deer (*Blastocerus dichotomus*) (Murphy 2010). The jay was perched on the back of the deer and, besides presumably searching for ticks, it also appeared to scan the surroundings for prey flushed by the foraging activity of the mammal.





**FIGURE 1.** A Purplish Jay (*Cyanocorax cyanomelas*) picks ticks, and possibly scabs, from the ears of a Gray Brocket Deer (*Mazama gouazoubira*) in the Pantanal, Western Brazil. Photo: Benedito Pio da Silva Campos Neto.



**FIGURE 2.** A Purplish Jay (*Cyanocorax cyanomelas*) searches for food on the head of a South American Tapir (*Tapirus terrestris*) in the Pantanal, Western Brazil. Photo: Projeto Tatu Canastra Pantanal.



## DISCUSSION

The three records presented herein leave no doubt that the Purplish Jay plays the role of a cleaner bird and support my assumption that a *Cyanocorax* species picks ticks on wild herbivores, including ungulates (Sazima 2007). Besides ticks, scabs, wounded tissue and other organic matter are additional food sources available on the clients of cleaning birds (Sazima & Sazima 2010). The bird perching on the head and back of deer (and tapir as well) agrees with the behaviour of several other corvid species that clean ungulates (Sazima 2011). The jay inspecting the deer's head, picking food especially from the ears, and the apparent indifference or confidence of these ungulates to cleaning are behaviours already reported for this interaction type with corvids (Dixon 1944, Isenhardt & DeSante 1985; photos in Sazima 2011). The Purplish Jay adds to the list of cleaner birds of the tapir (Peres 1996, Sazima & Sazima 2010).

Neotropical deer are rarely reported as clients of tick-picking birds (Peres 1996), and the two records of the brocket deer add this cervid type to the list of wild ungulates attended by birds. I suspect that additional deer species will be reported as clients of the Purplish Jay, including the Marsh Deer and the Pampas Deer (*Ozotocerus bezoarticus*), as both these deer species occur in the Pantanal (Tomas 1995, Tomas *et al.* 2001, IS pers. obs.). Deer seem to be important clients of tick-picking corvids in the Nearctic, Palaearctic, and even Indomalayan realms (Sazima 2011). If my supposition of the Marsh and Pampas Deer as clients of the Purplish Jay holds true, then the importance of deer to Neotropical tick-picking birds will increase. Natural history-oriented studies or photographic records (as used here) would strengthen or invalidate my suggestion.

The Western Scrub Jay (*Aphelocoma californica*) is the northernmost tick-picking bird in the Neotropics (Sazima & Sazima 2010), and the Purplish Jay stands as the southernmost cleaning New World corvid. As the latter bird's distribution reaches Argentina (Anjos 2009), it may extend its cleaning role further southwards. Given the opportunistic foraging behaviour of *Cyanocorax* jays, I would expect additional species may occasionally play the cleaner role for wild and domestic ungulates. A potential candidate is the Plush-crested Jay (*Cyanocorax chrysops*), which may forage on the ground and sometimes flocks together with the Purplish Jay in the Pantanal (Sazima 2007, Anjos 2009, Gwynne *et al.* 2010).

The Brown Jay (*Psilorhinus morio*) was recently recorded picking moths from the fur of the Three-toed Sloth (*Bradypus variegatus*) in Costa Rica (Neam 2015). This record supports another suggestion I made about jays as cleaners, namely, that these birds may glean

parasites from arboreal mammals such as sloths (Sazima 2007). Additionally, this latter record and the present paper strengthen the postulation that birds mostly clean medium-sized to large herbivores (Sazima & Sazima 2010, Sazima 2011).

## ACKNOWLEDGEMENTS

I thank Marlies Sazima for loving support in the field and at home; Benedito Pio da Silva Campos Neto and the Projeto Tatu Canastra Pantanal for permission to use the photos of the jay on brocket deer and tapir, respectively; Benedito Pio da Silva Campos Neto and Arnaud Desbiez for relevant data; José Maurício Barbanti Duarte for the identification of the brocket deer; the CNPq for earlier financial support.

## REFERENCES

- Anjos, L. 2009. Crows (Corvidae), p. 494-641. In: del Hoyo, J.; Elliot, A. & Christie, D. (eds.). Handbook of the birds of the world. Vol. 14, Bush-strikes to Old World sparrows. Barcelona, Lynx Edicions.
- Desbiez, A. L. J. & Kluwyber, D. 2013. The role of giant armadillos (*Prionodontes maximus*) as physical ecosystem engineers. *Biotropica*, 45(5): 537-540.
- Dixon, J. G. 1944. California Scrub Jay picks ticks from mule deer. *The Condor*, 46(4): 204.
- Gwynne, J. A.; Ridgely, R. S.; Tudor, G. & Argel, M. 2010. Aves do Brasil: Pantanal & Cerrado. São Paulo: Editora Horizonte.
- Isenhardt, F. R. & DeSante D. F. 1985. Observations of scrub jays cleaning ectoparasites from black-tailed deer. *The Condor*, 87(1): 145-147.
- Murphy, D. 2010. [Purplish Jay hitching a ride on a Marsh Deer - Pouso Alegro, Patanal, BR]. <https://www.flickr.com/photos/dennismurphy/5213875211/in/photostream/> (access on 28 February 2015).
- Neam, K.D. 2015. The odd couple: interactions between a sloth and a brown jay. *Frontiers in Ecology and the Environment* 13(3): 170-171
- Peres, C. A. 1996. Ungulate ectoparasite removal by black caracaras and pale-winged trumpeters in Amazonian forests. *Wilson Bulletin*, 108(1): 170-175.
- Sazima, I. 2007. Unexpected cleaners: Black Vultures (*Coragyps atratus*) remove debris, ticks, and peck at sores of capybaras (*Hydrochoerus hydrochaeris*), with an overview of tick-removing birds in Brazil. *Revista Brasileira de Ornitologia*, 15(3): 417-426.
- Sazima, I. 2011. Cleaner birds: a worldwide overview. *Revista Brasileira de Ornitologia*, 19(1): 32-47.
- Sazima, I. & Sazima, C. 2010. Cleaner birds: an overview for the Neotropics. *Biota Neotropica*, 10(4): 195-203.
- Tomas, W. M. 1995. Seasonality of the antler cycle of the Pampas deer (*Ozotocerus bezoarticus leucogaster*) from the Pantanal wetland, Brazil. *Studies on Neotropical Fauna and Environment*, 30(4): 221-227.
- Tomas, W. M.; Salis, S. M.; Silva, M. P. & Mourão, G. 2001. Marsh deer (*Blastocerus dichotomus*) distribution as a function of floods in the Pantanal wetland, Brazil. *Studies on Neotropical Fauna and Environment*, 36(1): 9-13.