Comportamento reprodutivo do olho-de-fogo-rendado

Pyriglena atra no litoral norte da Bahia. Uma pequena contribuição.

Ensaio fotográfico

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INTRODUÇÃO

O OLHO-DE-FOGO-RENDADO (Pyriglena atra) é uma espécie ameaçada de extinção com ocorrência na Mata Atlântica desde o Recôncavo da Bahia (litoral norte) chegando até o Estado de Sergipe. Essa descoberta foi realizada por Marcelo Cardoso de Sousa, que ampliou em muito a distribuição geográfica da espécie. Apesar de ter sido descrita por Swainson em 1825, somente em 2006 foi possível descrever o seu ninho. A descoberta ocorreu quando estávamos realizando estudos de comportamento reprodutivo das aves do litoral norte da Bahia, onde já descrevemos o comportamento de mais de 140 espécies de aves, o que equivale a cerca de 32% de todas as espécies de aves catalogadas até o presente momento. Nesse local notamos um macho de P. atra parado em um galho de um pequeno arbusto no interior da floresta. Ela permitiu nossa aproximação, fato esse nunca antes observado. Resolvevamos fazer um play-back com o som da espécie e logo ele ficou agitado. Em seguida a fêmea também apareceu, com o pequeno filhote macho com a cauda bem curta, checamos o entorno e observamos um estranho ninho de boca larga construído no solo e recoberto de folhas secas. O ninho estava abandonado e não tínhamos certeza que pertencesse à P. atra. A descoberta ocorreu em março de 2006, em Mata Atlântica do Parque Sauípe, pertencente ao Município de Mata de São João. Decidimos que procuraríamos um novo ninho nesse mesmo território entre os meses de janeiro a março de 2007. No entanto, não encontramos o ninho e o casal não se comportou nesse período como tinha se comportado quando da descoberta do filhote, respondendo ao play-back.

No dia 22 de novembro de 2007, às 05h00min da manhã, notamos que um casal de P.atra estava se comportando da mesma maneira quando da descoberta do primeiro ninho. Resolvevamos montar uma estratégia de seguir o casal no intuito de descobrir o seu ninho. Escalei dois assistentes para executar essa tarefa. Às 10h30min da manhã o ninho de Pyriglena atra foi descoberto quando um dos meus assistentes, que se dedicava exclusivamente a descobertas de ninhos para que eu possa estudar, resolveu sentir no meio da floresta no local em que tinha avistado pela última vez o casal. De repente ele percebeu um som estranho e avistou a fêmea de Patra voar do solo emitindo sons de alerta e lá estava o ninho. Reunimos nesse trabalho relatos inéditos sobre o comportamento reprodutivo dessa espécie, tudo registrado em fotografias e gravações de diversos sons que representam cada momento do seu comportamento reprodutivo.

ABSTRACT

The Fringe-backed Fire Eye (Pyriglena atra) is a species in danger of extinction and it occurs in the Atlantic Rainforest from the Recôncovo of Bahia, all along the coast of Bahia until the state of Sergipe. This distribution discovery was made by Marcelo Cardoso de Sousa and it greatly increased the known geographic distribution of the species. Even though it was described by Swainson in 1825, only in 2006 was it possible to describe the bird’s nest. This discovery occurred when we were undertaking reproductive behavioral studies on the birds that inhabit the north coast of Bahia. In this region we have described the reproductive behavior of 140 bird species which is about 32% of the 432 bird species that have up to now been catalogued. A male P. atra was perched on a branch of a small bush in the interior of the forest and it allowed us to approach, something that we had never before experienced. We decided to do a playback with the call of the species and it immediately became agitated. Then the female appeared, also responding to the playback, and minutes later we observed a male chick on the ground which had a very short tail. We checked the area around the birds and found a strange nest built on the ground with a wide opening and covered with dry leaves. The nest had been abandoned and we were not sure whether it was in fact a P. atra nest. This discovery occurred in March 2006 in the Sauípe Atlantic Forest reserve which belongs to the municipality of Mata de São João. We deci-
ded to look for a new nest in the same area bet-
 tween the months of January and March of 2007, however we did not find a nest and the
 pair of the species did not behave as they had
 done when the chick was discovered and they
 had responded to play-back. On November 22nd, 2007, at 05:00 in the morning we noticed
 a pair of *Patra* that was acting in the same
 way as when the first nest was discovered and
 we decided as a strategy to follow the pair
 with the aim of discovering the nest and I cho-
 se two field assistants to perform this task. At
 10:30 in the morning a nest of the *Pyriglena
 atra* was discovered when one of my assis-
tants, who dedicates himself exclusively to
 discovering nests that I can study, decided to
 sit down in the middle of the forest in the lo-
cation where we had last seen the pair. He heard
 a strange sound and noticed the female *Patra
 fly up from the ground, emitting alarm cries
 and there my assistant found the nest. We put
 together in this study unprecedented descrip-
tions about the reproductive behavior of this
 species that were registered in photographs.
 Additionally, we made recordings of the di-
 verse range of calls that represent each mo-
 ment of their reproductive behavior.

**MATERIAL AND METHODS**

The information compiled in this study is
 part of a wider study on reproductive behav-
 ior which started directly following the dis-
 covery of the nest on November 22, 2007 and
 finished on the 20th of December, 2007 when
 the chicks fledged. The behavior of the pair
 was monitored every day starting at 04:30 in
 the morning and finishing at 17:30 which
 amounted to 277 study hours where all the be-
havior data was registered in a field notebook.
 This strategy was adopted for two reasons:
 Since we had found the nest with two eggs,
 we couldn't predict when the chicks would
 hatch and secondly, after we had noticed the
 presence of possible predators that could at-
 tack the nest, we decided that aside from mere
 study, we should also protect the nest from
 predators. In order to photograph all the acti-
 vity, we constructed a hide made out of card-
 board three meters from the nest. A Nikon Co-
 olpix 8800 VR 35-350mm was used with 8
 megapixel resolution. The weighing of the
eggs and chicks was done with a TANITA sca-
 le, model 1479 with an accuracy of 0.1g. The
calls were recorded with SONY TCM – 5000
EV recording equipment, and picked up with
 a directional microphone SENNHEISER k6.

**THE NEST, THE EGGS AND THE CHICKS**

The nest is a large ball, externally lined with
 dried leaves and the nest's interior is lined with
 'piaçava' palm fiber. It is 120 mm wide, the
 opening is 90mm x 70mm and the depth is
 140 mm and the weight is 85 g. There were
 two eggs in inside: one weighed 4.2 grams
 and measured 25.5 mm x 17.5 mm, the other
 4.2g and measured 26.5 mm x 18 mm. The
 nest is built on the ground in the middle of
 hundreds of dry leaves which provide good
 camouflage and seen from the back it looks li-
 ke a pile of dry leaves and only from the front
 is it possible to see that it is a nest. Near to the
 entrance there was a small bush that is used
 by the pair to enter the nest, both during the in-
cubation period and when they are feeding
 the chicks. The pair never entered the nest
 from the ground and always used the bush to
 observe the inside of the nest to ensure that
 everything was safe. In this way they can av-
 oid the possibility of being surprised by a pre-
dator that is waiting to ambush from the insi-
de of the nest. The incubation period is 18 or
 more days, this supposition is based on the as-
 sumption that we found the eggs on the exact
day the second egg had been laid. Both chicks
 hatched on the 7th of December in the latter
 part of the afternoon. Both the chicks were
 male, and the sex could already be determi-
ned after 6 days where the first feathers are
 evident on the wings and the top of their head.
The chicks abandoned the nest after 13 days
 and could perform small flights slightly off
 the ground in the interior of the forest. We
 were able to catch one the chicks and gather its bi-
ometric information: weight 20.2 grams, to-
tal length 93 mm, wing 64 mm, tail 20 mm,
tarsus 29 mm and beak 15 mm.

**REPRODUCTIVE BEHAVIOR**

In order to study the behavior of the species
 we built a hide made of cardboard three me-
ters from the nest. And we studied the behav-
ior of the species every day from the date of dis-
covering between 04:30 in the morning to 17:30
in the afternoon. This strategy was adopted for
 two motives: firstly when we found the nest it
 already had two eggs which could hatch at any
 minute. It was vital that we could photograph
 all stages between the birth of the chicks to the
 moment when they abandoned the nest. Se-
 condly, on the first observation day, from with-
in the hide we noticed the presence of various
 possible predators, such as armadillos,
snakes and the most intelligent of all these pre-
dators, the yellow-breasted Capuchin monkey
 (*Cebus xanthosternus*). A group of these mon-
 sters noticed the presence of our hide and ca-
 me to investigate us on the ground very close
to the nest. The male *P. altra* was incubating at
 the time and fled in terror and did not return to
 the nest. The nest was exposed until the fema-
 le came back from looking for food to incuba-
te the eggs. She was nervous, perhaps because
 her male partner was not there or because she
 had been informed about the monkeys. She
 waited for a long time until approaching the
 nest but then went away while making the
 'nest call'. When I realized that the sound was
 getting further away, I thought it preferable to
 leave the hide so that she would come back
 quickly. The monkeys had not attacked the
 nest because I had shouted at them while I was
 in the hide which caused them great alarm and
 they fled. In order to prevent the monkeys
 from coming back, we decided to hang a large
 stuffed anaconda (*Eunectes murinus*) in the
tree canopy close to the nest along the route
 the monkeys were using. When they saw the
 snake they were alarmed and never returned
 to the nest location. The stuffed snake was
 only removed after the chicks had abandoned
 the nest. Our daily presence was very impor-
tant to prevent attacks by diurnal predators.
 It is the female that incubates the eggs du-
ing the nighttime, and she leaves the nest at
 around 04:40 in the morning to look for food.
The male goes with her and then comes back
to the nest between 05:15 to 06:00 in the morn-
ing to incubate the eggs. So the nest is aban-
doned by the parents for a period of time
 which can vary between 45 minutes up to an
 hour and a half. When the male returns to as-
sume incubation duties, it keeps its head poin-
ted toward the ground near the nest opening
 observing everything going on around it. The
 male is very tame and calm; I shouted and ban-
ged the hide so that we could take pictures of
 him in an alert state, and he didn't move. I cal-
ted to one of my field assistants to approach
 the nest and suggested that he continue spea-
kling as he was walking and still the male
 would not leave the nest. He only flew away
 when my field assistant was within a meter of
 the nest. The male continues to incubate until
 between 08:30 and 09:00 when the female re-
turns to the nest. The female becomes extre-
 mely skittish when she perceives the presen-
 ce of an intruder and leaves the nest making
 alert calls. When we made any sound at all
 when she became alert and when she returned,
 she continued alert calls. This was in contrast
to the male who allowed me to enter the hide
to observe the birds without leaving the nest.

On November 27, I changed the person ob-
 serving from the hide at 10 in the morning,
 while the female was incubating. She left the
 nest making alert calls and I left the hide with-
 out her noticing and recorded her alert call.
 After some 20 minutes she came back to the
 area, perched on a branch and went down to
 the nest without calling. I then played the
 sound I had recorded onto the machine from
 within the hide and she became alerted at
 the point which I photographed her. I continued
 to play her alert calls and she quickly left the
 nest and when she came back she made the sa-
 me calls as the previous day, when she was
 suspicious, and she delayed for quite some ti-
 me before entering the nest.

In the morning of November 29, we obser-
 ved that the female left the nest at 04:50 in
 the morning accompanied by the male to look
 for food. At 6:15 the male returned emitting
 calls. He stayed in the nest until 8:33 when the fe-
 male returned making the nest call and when she
 was very close to the nest, the male became
 alert and left the nest. Immediately the female
 landed on a branch very close to the nest and

then entered. The male made two calls, those of the changing of the nest and of arriving at the nest, as did the female. The male calls were very low. I played the call of the male arriving at the nest and he took little notice of it. On December 1 at 8:37 in the morning, the nest was empty as the male had left. At 8:50, we observed that the female arrived calling and went into the nest. On this same day we observed the nest at 12:53 while the female was in the nest and the male approached making the change of the nest call but the change does not occur. The female remained in the nest and then called at 13:17 but still there was no nest change and the nest was again observed at 13:25 but it was not until 14:00 that the change was made.

On December 2, we noticed that the change at the nest in the afternoon did not take place. The female incubated all throughout the afternoon and at 13:48 she called extensively, and the male responded but there was no nest change. She stayed in the nest until 16:25, then left the nest and returned at 17:01 to incubate again and then slept and only left the nest at 04:40 in the morning. On December 3, the male made the typical call until 05:00. It was only at 05:40 that the female came to the nest, making the nest call, something happened with the male and he made the nest changing call but the change was not made. On this same day the male came to the nest at 12:08 and stayed in the nest until 14:27. At 14:33 the female came to the nest and stayed all the way through the night, the first time this happened. On December 8, by 05:00 in the morning the two chicks had hatched and this must have happened in the late afternoon of December 7. These were no egg shells in the nest and the father came back to give them food at 06:15 in the morning.

FOOD AND FEEDING TIMES FOR THE CHICKS

After the birth of the chicks, it is the father that is responsible for the protection of the nest. He only looks for food very close to the nest and never strays far from it. The female leaves the nest at 04:40 in the morning and travels some distance in search of food. She only returns two hours later always making the nest arrival call. The call can be heard far away and gets louder as she gets nearer. In the period of her absence, the male has offered four feeding items to the chicks, always gathered close to the nest. This food is captured or on the ground or on the leaves of the bushes. Everything points to the fact that the female looks for food using army ants but we managed to prove that the male does not make use of army ants to capture food during the time it is feeding the chicks. Dozens of insects such as spiders, crickets and frogs are abundant in their territory. We managed to follow the male and watched it capture food elements without the presence of the army ants. We also managed to prove that the female can find food without the presence of the ants though they

REACTION TO PREDATORS

After we had observed the reaction of the male to the approach of the yellow-breasted capuchin, we decided to carry out two experiments: we put an armadillo near to the nest so that we could observe the pairs reaction to the presence of this animal since we had observed the armadillo many times in the area around the nest. Both the male and the female made alert calls but continued to feed the chicks normally. In the second experiment, we put a stuffed rattlesnake in the area of the nest. When the male became aware of the presence of the snake, it emitted constant alert calls and, in order to attract the snake away from the nest, pretended it was hurt, opening and closing its wings as if they were broken and hiding amongst the leaves. When the female arrived with the food for the chicks and noticed the presence of the predator, it emitted alert calls that were different from the male and these calls induced the chicks to abandon the nest. The photos of the male reacting to the presence of the snake for the photographic display were taken by Ciro Albano since my photographic equipment does not have the capacity to take rapid photos.

CALLS

For this article there were more than 20 calls registered: calls emitted during the reproductive period, calls that represent their reactions to predators, the male arrival to the nest, the female bringing food to its chicks, the meeting of the pair in the territory around the nest, the calls of the chicks receiving food and the calls when they perceived the presence of a predator, the call of both the male and female after they saw the serpent. We took advantage of this and annexed 16 different calls that help to interpret the behavior of this species.

CONCLUSION

P. atra, starts its reproductive cycle at the end of October and can and last until the month of March. The species does not respond to play-back outside of its reproductive period and they only call two times a day, at dusk and dawn, whereas during the reproductive period they call constantly, during the nest changing period, during incubation, and while feeding the chicks. During this period is very easy to locate the nests. The nest that is built on the ground is vulnerable to many different predators. However, the pairs has various techniques to keep predators at bay and away from the nest. The robust nest is covered with dry leaves and the large opening is perfectly designed to resist storms since it is totally impermeable. The parents warm the chicks during the first days of their lives and the female does it at night and this continues until the chicks flledge. After the chicks flledge they have the capacity for small flights and follow their parents in the feeding territory. During the reproductive period, there is an abundance of available food and the parents do not depend solely on ants. The male is quite docile during this period and gets used to the presence of observers and will often try and find food from under the feet of those people observing him. During the incubation period, the male would allow observers to come less than a meter from the nest. The female, however, is much more skittish about the presence of observers and it was only possible to register their behavior through the photographs taken from inside the blind. In summary, this is a small contribution to the conservation of this species that depends entirely on the preservation of the Atlantic Rainforest from the Recôncavo up along all the north coast of Bahia and the south of Sergipe. This is not a conclusive study and is part of an extensive study on reproductive behavior of the birds along the north coast of Bahia.

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BIBLIOGRAPHICAL REFERENCES:


Cetrel S/A Empresa de Proteção Ambiental do Pólo Petroquímico de Camaçari, Via Atlântica Km 9 Interlagião Estrada do Coco - CEP 42810000 - Camaçari - Bahia. E-mail: pedro@cetrel.com.br
SONS
Passe o mouse no som que deseja escutar:

Alarme dos filhotes e fêmea - 17/12/2007

Casal e filhotes - 17/12/2007

Casal reagindo à presença de serpente nas proximidades do ninho - 19/12/2007

Fêmea chegando no ninho de longe 05h05 da manhã - 18/12/2007

Fêmea chegando no ninho - 18/12/2007

Fêmea com alimento no bico em busca do filhote fora do ninho - 20/12/2007

Fêmea com comida no bico em busca de filhote fora do ninho - 20/12/2007

Fêmea e filhotes no ninho após a aproximação da serpente - 19/12/2007

Filhote pedindo comida na ausência dos pais - 20/12/2007 - 01

Filhote pedindo comida na ausência dos pais - 20/12/2007 - 02

Filhote primeiro dia fora do ninho e fêmea - 20/12/2007

Filhotes recebendo comida da fêmea após a presença da cobra - 19/12/2007

Filhotes recebendo comida - 19/12/2007

Macho reagindo a presença de uma serpente nas proximidades do ninho - 19/12/2007

Sons com a presença de tatu - 19/12/2007

Sons do casal com a presença da serpente (macho emitindo seu som característico e fêmea emitindo um som que significava fuga) - 19/12/2007