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Lappet-Faced Vulture, Camel and Raven of Red sea of Egypt

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Abstract

Camels imported from Africa enter Egypt at Southeast borders. Movement of life animals help spreading of transboundary diseases from endemic areas to free areas. Lappet-faced vulture in Egypt territory represents highly valuable gift of nature, it is recorded in Red sea zone of Egypt. Their numbers indicate vulture breeding rate was promising for such endangered species. The Egyptian authority played a great role in protecting this land from destructive behavior against wild life. The raven accompany lappet-faced vulture, while eating together, which indicates healthy atmosphere at their habitat. This work performed while studying the epidemiology of this region and the impact of movements of live animals coming from Africa on trans-boundary diseases. Lappet-faced vultures and Raven play major role in preventing transmission of infectious agents from camel carcasses. However, Vulture has strong digestive system that kill a wide range of harmful microorganisms. Moreover, these scavenge birds are considered dead end hosts for these diseases. The study provides vivid proof of the innate intelligence that distinguishes the raven, as well as evidence that the black bird possesses a common language among themselves and between them and the Lappet-faced vulture. Lappet-faced vulture is usually nesting at acacia trees & mountains. However some acacia trees showed defected growth as a result of the strong wind, such observation is of great importance to understand geography of such habitat. Lappet-faced vulture is endangered species and need more attention and care.

Introduction

Several studies have been conducted by many researchers and scientists from all over the world on African vultures. Extensive studies were also conducted on the vultures that inhabit the Red Sea at the Arabian Peninsula. However, there are no complete studies on the southeastern region of Egypt. Most of the studies are in the Arabian Peninsula due to the availability of resources for scientific research and field studies supported by the Kingdom of Saudi Arabia, because that country pays great attention to

wild birds like Vultures [3, 4]. Newton & Newton AV (1996) described the breeding biology and seasonal abundance of lappet-faced vultures Torgos tracheliotus in western Saudi Arabia [5, 6]. Shobrak, (1996, 2000, 2001, 2003, 2004, 2011) investigated the ecology of the lappet-faced vulture Torgos tracheliotus in Saudi Arabia, role of avian scavengers in locating and exploiting carcasses in central Saudi Arabia, posturing behavior of Lappet-faced Vulture Torgos tracheliotus chicks on the nest which plays a role in protecting them from high ambient temperatures, vultures in Saudi Arabia; Parental investment of the lappet -faced vulture during the breeding, and the changes in the number of breeding pairs, nest distribution and nesting trees used by the Lappet-faced Vulture Torgos tracheliotos in the Mahazat as-Sayd Protected Area, Saudi Arabia [7-12].

The scientist Sauer (EGF) and his team conducted many important studies on the wildlife in Namibia. The results of these studies included tremendous and very valuable information about vultures and their interaction with other species. It gave a complete picture of that period and provided us with accurate information about vulture from all sides. Sauer (1973) write "Notes on the behavior of Lappet-face Vulture and Cape Vultures in the Namib Desert of South West Africa". Sauer (1970) edited "Interspecific behavior of the South African Ostrich". Sauer (EGF) & Sauer EM (1970) write "Social contacts of ostriches with other game in the inner Namib" [13, 14, 15].

Bugnyar (2013) investigated the social cognition in ravens. He stated that ravens represent a promising case for testing the idea that sophisticated social cognition may evolve in systems with a given degree of social complexity, as the raven (Corvus corax), a large-brained songbird developed high ecological flexibility and foraging skills. Focusing on two aspects of social life, competition over food and the use of affiliate relations or social bonds, he fined that the social system of ravens is complex [1].

Simone et al., (2020) described that Ravens parallel great apes in physical and social cognitive skills. They mentioned that Interacting with particular individuals over time—rather than interacting with many individuals and/or over limited periods only—seem to be a highly cognitively challenging enterprise. Since ravens are well known are exhibiting a variety of socio-cognitive traits necessary to maneuvers successfully through their complex social world and have been suggested to be social rather than physical intellects [2]. The research also described raven as a very intelligent and sophisticated bird to the point of comparing it to a flying monkey. It described as being able to adapt to the environment and eat different types of food according to their availability in the environment.

Material & Methods

Materials

This research performed after obtaining the official permission to enter this protecting zone. Catching the wild birds are prohibiting, while samples from camels were allowed. However, only authorized persons can enter this region. Photography permissions only allowed in specific areas, which were related to the research.

Site of Subject

This research performed in the southeast Egypt & the Red sea border at Halayeb and Shalaten district of Egyptian land.

Methods

Camels

Collect relevant data about methods of importation of camels at the point of entering the Egyptian land till arrival to the quarantine.

Observing without interventions in usual behavior of camel passages

Collect data about the wild life & birds norms at this region.

Picturing & recording the birds of prey that feeding on dead camel carcasses (Figures 1-3).

Wild Birds of Prey

Scavenge birds in the village of Halayep, Southeast Egypt which inhabit the desert areas and nest in the mountains along the Red Sea: The black bird (raven);

and the Egyptian Vulture "Torgos tracheliotus" (J. R. Forster, 1796).

The Lappet-faced vulture or Nubian vulture (Torgos tracheliotos), is a species of Old World vulture in the Accipitridae family.

Results

The Target of Research

observing the wild life that feed on sick camels. Recording the conditions of imported camels from Africa which passing through borders, and recording the wild bird that feeds on the dead camels. For Studying the geography and ecological factors that would have direct or indirect effects on transmission of transboundary diseases, I was counting the numbers of carcasses of imported camels alongside Dabouka passages that did not reach the Shalaten district for waiting in quarantine.

The study described some aspects about the wildlife in southern Egypt (Red Sea District). It records an important aspect of the life and behavior of two of the most important wild birds of prey; the blackbird (the raven) and the Lappet-faced vulture. It also provides some relevant observations about the natural environment of the area in question. It also provides an accurate description of the social behavior of these birds. The study provides vivid proof of the innate intelligence that distinguishes the raven, as well as evidence that the black bird possesses a common language among themselves and between them and the Lappet-faced vulture. This study also provides emphatic evidence of the social interaction between blackbirds and the Lappet-faced vultures. This study also emphasizes the importance of protecting wildlife in that area, considering it a nature reserve where hunting or attacking birds or wild animals is not permitted. It is fortunate that these areas do not have a population density due to the scarcity of drinking water and it is a desert and there is nothing in it that attracts people to live in them due to the lack of basic services. However, this area is a safe and suitable place for these important birds, because the Lappet-faced vulture prefers to live in quiet and safe places, which help the reproduction of this type of endangered species.

The Black Birds (Raven)

It was observed that huge numbers of black birds nesting in the quarantine areas in Shalateen village, south Egypt. However, some ravens were seen preying on dead camel. These corvids has a distinct characters & sharp intelligence. These black birds have characteristics traits of ravens; all were black in color and attract my attention when they communicate with each other in language through the speech apparatus, the mouth and the movement of the beak (Figures 4-14). These ravens were apparently developed certain social bonds with vultures, treating them with respect and communicate in a language (Figures 28-43). Raven were distinguished by sharp eyesight, alertness, and thinking about the reaction (Figures 13-14). The ravens have pointed claws, thin legs, and strong beaks. The head is distinct and indicates the type and breed, where the forehead area has thick soft feathers as if it were eyebrows above the eye (Figure 14). The color of raven plumage is identical to the colors of the surrounding environment. Their eye is dark chestnut and the third eyelid is white, while the pupils of the eye are dark. They appear to the far eye as black birds with a head relatively large for the size of the body and a beak relatively large for the size of the head. The way they fly is distinct, sophisticated, high-tech and smooth, its wings are long, and its feathers are harmonious and very shiny. Any observer can realize that these ravens speak among themselves in the language of speech that belongs to them and notice the language of the body movements accompanying the speech, as well as the movement of the throat and beak, the direction of the head and the movement of the wings, i.e. the interaction of body movements with the meanings of the speech (body language). They are brave and prudent at the same time, watching the intruder and studying to understand what he wants. Despite the fact that these black birds are not in contact with humans because they live in a barren and uninhabited desert, however, it became clear from their reaction to seeing the intruder that

Figure 1. Prof. Dr. Samia Ahmed Kamal, Halayeb, Egypt

Figure 2. Dabouka (group of camels) travel through desert, Halayeb, Egyp

Figure 3. Camels at Halayeb, Southeast Egypt.

Figure 4. Ravens (black birds) eating from slaughtered camel. Halayeb, Egypt.

Figure 5. Ravens body language, attention & chatting. Halayeb, Egypt.

Figure 6. Ravens body language & smart attitude. Both ravens speak to each other indicating advanced social interaction and the presence of common language. Halayeb, Egypt

Figure 7. Ravens discuss certain problem. A raven speaks while the other one listen carefully. Halayeb, Egypt.

Figure 8. Ravens continue arguing & discussing the situation. Body language indicates that both ravens try to find solution. Halayeb, Egypt

Figure 9. Two ravens discuss certain issue by using language apparatus, body language, complete attention & the smart attitude, Halayeb, Egypt

Figure 10. Raven speaking together with attitude & body language. Halayeb, Egypt

Figure 11. Ravens speaking to each other with indicative body language & attention. Halayeb, Egypt

Figure 12. Ravens chatting together by using speech apparatus & body language. Halayeb, Egypt

Figure 13. A raven (black bird) looking towards camera. Halayeb, Egypt

Figure 14. A raven (black bird) standing on the ground & looking towards the camera & its third eye lid is apparent as whitish membrane covering the eye, while the other raven standing upon camel & return to eating. Halayeb, Egypt.

Figure 15. Five lappet-faced vultures waiting at the ground near a slaughtered camel. Halyeb, Southeast Egypt.

Figure 16. Two lappet-faced vultures standing on the ground. Halayeb, Egypt

Figure 17. A lappet-faced vulture waiting on the ground, looking towards camera. Halayeb, Egypt

Figure 18. A lappet-faced vulture waiting on the ground. Halayeb, Egypt

they care about his presence without panic or terror, but rather studying possible ways to understand the situation. The way these birds fly is graceful and beautiful and has a highly advanced flying technique. They fly and take a hawk-like position in speed, calmness and spontaneity. It is certain that the type and breed of these black birds is very pure and has its own unique hereditary characteristics. The total number of birds that were seen was completely identical to each other in terms of form and functional performance. Also, the habitat environment is completely pollution-free. The behavior of these ravens is indicative of the social development among them, as cooperation and communication are perfect, even the discussion among them indicates the development of this intelligent and social attitude. We do not exaggerate if we say that the behavior of these ravens indicates social upbringing and taste in dealing with other birds that live with them, interact with each other and share food. These ravens leave a distance between themselves and the vultures, talk to them and share their opinion, and it seems that they understand their common language, or a common language has been developed in this environment and their desert society, which is calm, dark, and free from noise, from humans and from dangers as well. These ravens are distinguished by their graceful movement on the ground. When it takes off and flies with its long wings, it looks great with its shining wings.

Lappet-Faced Vulture

The Egyptian Lappet-faced vulture, Aegypius tracheliotus (J. R. Forster, 1796), the old world vulture is nice, calm & beautiful. These vultures which recorded in this research, has been live in the Red Sea regions since the time of the Pharaohs who had great respect towards them due to its distinguished qualities of strength, intelligence, greatness behavior, wisdom and beauty. All this I knew myself when I watched this wonderful bird. The lappet-faced vulture is a huge species, ranking as the longest and largest winged vulture. (Figures 15-28)

Unless the Lappet-faced vulture is a bird of prey, but it is very elegant in its nature, they never attack humans live in these areas and never threaten them, so his job is only to eat dead animals or harmful subjects such as the snake, land snails, scorpion…etc. They does not attack the camels that graze in the desert, nor does it attack dogs that live in the wild, nor does it attack the sheep that graze in the desert. For these reasons they are protected by authority from hunting or killing & deserved the utmost respect and protection. I observed that lappet-faced vultures follow behavior patterns and system specific to their species to maintain the spirit of cooperation and live calmly without starting a fight with the rest of the species.

Accordingly, food in considerable amount was usually available in this region. However, drinking water is a challenge in this zone even for human. Specifically in that hot weather, so that I think that the birds get drinking water from the closest place to their nesting place, so they may go to the Nile River, which is about 200 km away from this area, searching to drink water or find food, or they drink from the water of the Red Sea, this point need more investigation. Also, the Red Sea usually has some fish on its shores that were pulled to the shore and were unable to return to the sea. In general, the food sources for birds of prey are numerous in this land, which is rich in natural resources. However, these areas are very poor in irrigated water. The vultures may drink from the water provided by the state to drink the camels passing on their usual way, as the local authorities provide a source of water for the camels to drink, also, this point need more investigation.

Adaptation in Ecological Environment

Adaptation to life in the arid desert and the scarcity of drinking water is a challenge. These areas are very hot in summer, and moreover, they are close to the Red Sea, and there are no trees or windbreaks, which are often heavily laden with sand.

These intelligent birds must follow the strategy of identifying areas of food availability and scarcity and nesting near those areas that provide them with food. Therefore, they nest near places and roads that move caravans of camels from Africa and constantly monitor

Figure 19. Two lappet-faced vultures waiting on the ground. Halayeb, Egypt

Figure 20. An Adult lappet-faced vulture standing on the ground. Halayeb, Egypt

Figure 21. An adult lappet-faced vulture standing on the ground near acacia tree. Halayeb, Egypt

Figure 22. Three adult's lappet-faced vulture standing near each other. Halayeb, Egypt

Figure 23. Three lappet-faced vulture standing on the ground & looking at the same direction. Halayeb, Egypt

Figure 24. An adult lappet-faced vulture. Halayeb, Egypt

Figure 25. An adult lappet-faced vulture looking to the camera. Halayeb, Egypt

Figure 26. An adult lappet-faced vulture looking to the camera. Halayeb, Egypt

Figure 27. an adult lappet-faced vulture waiting on the ground. Halayeb, Egypt

Figure 28. A flaying raven & a standing lappet-faced vulture. Halayeb, Egypt

Figure 29. A flaying raven. Halayeb, Egypt

Figure 30. A lappet-faced vulture (agony & threat attitude) & a flaying raven. Halayeb, Egypt

those areas and roads until they are ready when available, as in that research. If their nests are far in the mountains, they will not reach this place easily because they will expend more energy that they need due to the scarcity of water and hot weather.

The desert environment, especially the areas of the Red Sea, has reddish sand and brown and dry desert grasses. It also has short shrubs, as these acacia trees are affected by strong winds coming from the Red Sea surface in one direction, which makes them grow in one direction tilted towards the direction taken by the wind. This observation is very important when we want to know the direction of the winds in those areas, we can easily determine this by watching the direction of the growth of acacia trees. We can also learn from those desert shrubs that have accurate and free cognitive significance in determining the status of wind traps or taking advantage of the winds in related projects, or identifying areas suitable for agricultural or urban reclamation not only in the Red Sea regions but in any desert place. We should not put ourselves in the winds, that is, we should not plant in the winds, and we should not build houses in the winds. But we benefit from the wind in the work of clean energy projects and the exploitation of the wind in that, so the wildlife in those areas must be accurately understood and humans must move away from those areas as much as they can and stay in remote places where the intensity of the wind decreases and its intensity is diminishing. The urban development parallel to the shore of the Red Sea is not desirable, but rather it should move away inland enough and leave this strip to be enjoyed by wild creatures and achieve ecological balance (Figures 44, 45). Those areas under study are quiet and free from noise, environmental pollution and humans. No factories, no wars, no evil at all. It is the strip of the Red Sea in Egypt, which is a pure and clean area. The birds of prey that were observed in that area are adapted to this calm and cleanliness, so we find them in the best condition in terms of health and racial and genetic purity. If we wanted to find the source of pure genes for those birds, vultures, and others, which were not affected by pollution, this is considered a huge source of those healthy genes. Therefore, those areas are nature reserves where hunting for these birds is prohibited. It is also not allowed to tamper with nature, and the authorities deal firmly and severely in this regard.

Social Behaviors of Ravens and Lappet-Faced Vulture

I recorded the mission of one of the ravens' envoy to vultures: our observations recorded certain sequence of events happened between ravens and vultures. The first scene was ravens chatting about certain issue (Figures 5-12). The following scene was flying of one raven towards the waiting vultures, specifically a pair of them, passing two vultures and going towards the target of the mission. The camera recorded the scenes very clearly, raven envoy walk politely towards vultures, stand near them and directed his eyes and head to the vultures (Figures 28-43). It is a mission which indicating the good relationships between the two species. Also, indicates that both birds are social creatures, that a common language would develop, and both birds are communicating by speaking.

The Lappet-faced Vultures "Agony & threat behavior"

In this report, I noticed the behavior of threat shown by the vulture and the shape that appeared on it identical to what the scientist Sauer (1970) described in his research, where he drew the shape that the vulture looks like; the head movement, the body expression, and the general shape of the vulture on the ground and considered that this is an expression of a state of threat, anticipation and a sense of danger. It seems that photographing them caused panic, fear and threat. The vulture stands with its head bowed, as if its head reaches the height of its feet and approaches the ground. It moves his head inside his wings and looks to the camera (Figures 30-35).

Sauer(1970) mentioned that the threat behavior displayed in the communal area by Lappet-faced Vultures was essentially an expression of social status which might involve a displacing of another bird merely for showing social strength or maintaining an individual distance or place.

Discussion

Figure 31. A lappet-faced vulture (agony & threat attitude) & a flaying raven. Halayeb, Egypt

Figure 32. A flaying raven & a lappet-faced vulture showing agony and threat attitude. Halayeb, Egypt

Figure 33. A flying raven & a lappet-faced vulture showing agony and threat behavior. Halayeb, Egypt

Figure 34. A flaying raven and a lappet-faced vulture showing agony and threat attitude. Halayeb, Egypt

Figure 35. A flaying raven & a lappet-faced vulture showing agony and threat attitude. Halayeb, Egypt

Figure 36. A flaying raven towards waiting lappet-faced vultures (mission). Halayeb, Egypt

Figure 37. A flaying raven landing on the ground (mission). Halayeb, Egypt

Figure 38. Raven landing on the ground and walking towards the vulnures (mission). Halayeb, Egypt

Figure 39. A raven walking to the standing lappet-faced vulture (mission). Halayeb, Egypt

Figure 40. A raven walking towards the vulnures (mission). Halayeb, Egypt

Figure 41. A raven & lappet-faced vultures (mission). Halayeb, Egypt

Figure 42. A raven & lappet-faced vulture (mission). Halayeb, Egypt

Figure 43. Lappet-faced vultures & a raven standing together on the ground (mission). Halayeb, Egypt

Figure 44. Acacia tree with normal shape & moderate growth. Halayeb, Egypt

Figure 45. Acacia trees with defected shape and growth. Halayeb, Egypt

Egyptian Black Birds

The head of the raven is distinguished by the presence of dense feathers above the forehead, well-defined, and the beak is relatively large, curved with a sharp and hooked end. Slender and larger than the rest of its species, the shape of the feathers in the tail seen as wedged in shape when flying. He has a distinguished technical way of flying. The raven is all black, their plumage is glossy black. His method of flight is fast, agile and alert, he flies intelligently and goes to his target with absolute accuracy, lands on the ground and then completes to his target, striving on the ground gracefully, directing his eyes to the target. The eye color is dark and has a bright white third eyelid in the middle of its dark black color. The length of its wings is large compared to the rest of its species, its flight is fast and the appearance of the wings is beautiful when the sun's rays reflect on it, the shiny black color of its feathers reflects the sun's rays giving a group of wonderful reflections. Research references are full of valuable research conducted on the Raven. It was unanimously agreed on the distinct qualities that characterize this bird. The Internet is also full of articles and videos that prove the raven's ability to speak and his ability to learn the language spoken in his environment. As well as his accurate observation and strong memory of places and people, as well as describing his social and emotional behavior.

Lappet-faced Vulture Aegypius tracheliotus (J. R. Forster, 1796)

The scientist Sauer (EGF) and his team also described how vultures interact with each other on the

one hand, and on the other hand, how they interact socially with wild ostriches that live in the same environment. He also described social understanding and cooperation between these species. He stressed that vultures have social tendencies and interact positively, and that they are an amazing and wonderful creature. Rather, the vultures follows a strategy that it learned from the experiences of life in the wild, and it trained generations on that, meaning that the traits were transmitted through generations because eagles live a relatively long life. He opposed the idea that vultures preyed on smaller animals, and he did not see it personally [13-19].

Sauer EGF (1970) mentioned that "Watching vultures in the wild is an ever captivating adventure. While studying the South African Ostrich (Struthio camelus australis) in the inner Namib (Fig. l), we recorded every encounter with Lappet- faced Vultures (Torgos tracheliotus) and Cape Vultures (Gyps coprotheres). The lappet-faced vulture is a scavenging bird, feeding mostly from animal carcasses. In his "Birds of the World", Oliver (1961) calls the vultures scientifically interesting, exceedingly useful and practical scavengers "but not very nice critters" [20]. Though vultures may be practical and not very nice, they are a group of fascinating birds that have stirred the mind of man since ancient times. Vultures include some of the largest of flying birds. By their keen senses they are able to locate carrion from afar and swiftly. This has sparked man's myth and imagination, but only modern science found answers [13]. Old World vultures appear to locate carrion over long distances by sight, while the New World's Turkey Vulture (Cathartes aura) smells it from afar" [21].

Our observations are in accordance with Sauer EGF (1970) who stated that "McLachlan and Liversidge (1970) call the Lappet-faced Vulture "less sociable" than the other vultures. This may be so, but we cannot confirm it; in the Namib we found this common vulture often very sociable. It provided us with a wealth of information on its intraspecific social system and on its interspecific relationships with other birds and mammals of the veld. Lappet faced Vultures consorted freely and peacefully –not only with their own kind but also with Cape Vultures. So we are not surprised to read that Andersson (1872) called the Lappet-faced Vulture the "Sociable Vulture." Aside from its social behavior at the water sites and communal resting areas, we noted some of the Lappet-faced Vulture's nesting habits on top of acacia trees scattered along the dry washes on Tinkas and Hotsas Flats. The Lappet-faced Vultures lived socially isolated on their nests which they occupied and defended also during the non-reproductive season. The Lappet-faced Vulture of the inner Namib is a large, heavy bird whose enormous wings reach a wingspread 31 up to 300 cm." [13].

Our findings are in accordance with Mundy (1992) who mentioned that "Vultures are renowned for congregating in numbers at a carcass. The Lappet-faced vulture has a wingspan up to 2.9 m. It should be easy to keep vultures away from airports, simply by cleaning up any likely food source. There should be no carcasses, no messy abattoirs, no bone dumps, nor even any rubbish dumps, within several kilometers of an airport. Vultures are among the largest flying birds to be found today, with wingspans up to three meters and weights up to 11 kg. They are famous for their ability to ride high above ground level in thermals; perhaps on occasion up to 10,000 m a.s.l. and they may even take advantage of jet streams." [24]

Conclusions

The birds of prey especially scavenges ones like lappet-faced vulture and the corvids (ravens) plays major role in protecting the natural environment in Red sea zone of Egypt from dangerous contaminations by disease agents that transmitted through boundaries by live animals movement. These birds consider dead end host for many diseases agents, moreover cleaning the environment from dead animal's carcasses. So that, protecting these birds considered vital method to protect the ecological balance of nature in the land.

Conflict of Interest

I declare that "I have no conflict of interest"

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I'm really thankful to the great men of Egyptian army, for protecting this land and guarding our territory. I'm grateful for the tributes people that live there for their kindness.

Contributions

I'm Dr. Samia Ahmed Kamal, the corresponding author; who did this research, designing it; investigate the areas, analyses the data & collecting the literatures, recorded the results & discussing it, writing the research & sending it for publishing.

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