

A New Consideration of the Wandering Devourer*

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A general description of the wandering devourer is given. Previous research is summarized, with particular reference to the advances made during the 1980s. The research into methods of observation is described. Diet, capture of prey and digestion are treated. Mating, birth and childrearing are discussed. A possible classification is given. The need for future research is elaborated.

1 Introduction

The wandering devourer, *Edactor vagus*, is perhaps the most curious mammalian species ever to have been studied. There is still keen debate about its classification more than fifty years after its first documented sighting by A. P. Van der Blot in 1937. It is unique in the animal kingdom for its diet, preying on animals which in other areas of the world have no natural predators. It is also biologically fascinating, having one large orifice and central cavity which serve as alimentary canal and womb. Its sole habitat is a small area of rainforest in North-Western Uganda, and it is extremely rare, with an estimated population of fewer than twenty females.

2 The devourer and its habitat

The devourer's habitat is located in the East African Rift Valley, in a corner of the East African rainforest which extends into Toro District in North-Western Uganda between Lake Albert and Lake Edward. As its diet forces it to wander widely, however, it sometimes strays as far south as the Ruwenzori mountains, and even into Ruwenzori National Park. Being tropical rainforest, the area has largely unvarying weather, with the temperature averaging 20–24°C, and annual precipitation from 1,000–2,000mm.

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The devourer has a pattern of life similar to that of many large snakes: it catches one large meal, and then sleeps for between one and six months, depending on the size of the prey. Prey ranges in size from chimpanzees to buffalo and even juvenile elephants. Devourers have even been known to take crocodiles from Lake Albert.

The devourer catches its prey by concealing itself behind trees or shrubs, or in long grass on the savannah, and waiting until the prey passes close by, then leaping at it and swallowing it whole. Hollow spikes in its stomach deliver fatal venom to the prey, which dies within ten seconds.

Within a few hours, the devourer enters the digestion phase, throughout which it alternates between unconsciousness and a semi-conscious torpor. In the digestion phase, the devourer is highly vulnerable. It usually takes refuge in a large cave system deep within the rainforest, which is also where mating and child-rearing occurs.

The cave system used by the devourers for digestion and childrearing occupy a place of singular importance in the life of the species comparable to the ancestral nesting sites of many migratory animals, perhaps even more important, as it is difficult to see how the devourer would survive without them. The system is large, extending for many miles underground, and is sheltered within the forest, and has no other large inhabitants.

Although the devourer has no natural enemies, fatalities sometimes occur when a devourer enters the digestive torpor before it has reached a suitable refuge, and is then discovered by a large carnivore. This, however, is rare, and far more fatalities occur during mating, when the male is invariably eaten by the female. This occurs because the male has to climb inside the female to mate: her reproductive organs are entirely within the central cavity. The female's feeding instincts are then triggered immediately after mating.

The devourer is a placental mammal, and the young are thus born live. They live largely inside the mother for the first few months of their lives, treating the womb as a marsupial's pouch. The mother thus has to fast until they are weaned at three or four months old.

3 Research

Because of the difficulties and dangers inherent in studying a well-camouflaged creature which eats animals far larger than man, little research of any value was conducted in the years immediately following its discovery; it was not until 1957 that the first competent study by J. H. D. MacDonald [3] was carried out, which has formed the basis for all later research.

Since MacDonald's seminal paper, there have been but seven other useful contributions to the study of *E. Vagus*. Lavitchik's study of mating habits [2], together with Takahashi and Sugo's paper on childrearing [6] form the basis of our knowledge about the devourer's life cycle and sexual behaviour. In a more specialized area, Zweick and Krickstein's research into how the unbalanced sex ratio is maintained [8] has attracted considerable notice in the field of genetics, and explains one of the most puzzling facets of the devourer (see section 6).

Finally, Hyølstum, Meyer and Holt have all brought the highest standards of observational precision and exact deduction to the study of the devourer in their various papers [7, 1, 4, 5].

4 Observation

The greatest obstacle to any would-be researcher of the wandering devourer is that of observation: how can the devourer's full range of behaviour be observed without in any way endangering the observers? MacDonald attacked the problem in two ways. He used tranquillizer darts, then only just coming into use, to stun the devourer, before making anatomical observations. Also, he satiated devourers with large quantities of game, and was then able to observe a certain subset of the devourer's behaviour with minimal danger to himself or his team.

This still left the problem which has dogged researchers ever since: how to study the devourer's full range of behaviour. No early studies even addressed it, preferring to satiate, and thereby gain the advantage of safety in observation, but of a limited range of behaviour. This was the main reason for the failure of early research projects. Sedation is not a reasonable alternative, either. To date most successful research expeditions have succeeded in spite of rather than because of their methods of safe observation. Other approaches tried include radio tagging to track the devourer's movements, hides built in trees, which have generally been unsuccessful, as the devourer rarely remains in one place for long, and, in the mating and refuge caves, leaving long-running video cameras, which have often been eaten. The most promising method seems to be the use of pheromones which, when sprayed on the observer, convince the devourer that he is inedible. Trials are still at an early stage, however, and there is as yet no fully satisfactory method useful under all circumstances and for all purposes.

5 Anatomy

Most of the work on the devourer's anatomy has been done by MacDonald [3], with some recent additions by Hyølstum [1]. The devourer's anatomy is unparalleled among the mammals, except, perhaps, among the bats, for its adaptation to the mode of life it supports. As outlined above, the devourer has one main orifice for ingestion, egestion, excretion, and, in the female, coitus. The internal cavity to which the orifice leads acts as mouth, stomach, and uterus. There is no distinction between head and body, with the eyes, nose, and ears located above the orifice. Internally, the heart, liver, kidneys, and other major organs are located above the orifice, with the brain, covered by a thick flat bone which cannot really be described as a skull, at the top.

Around the orifice are thick walls of muscle, which are used both for manipulating the central cavity and for transmitting the legs' support to the top of the body. The devourer has become a quadruped in the same sense as man has a biped, that is to say, though all four of its limbs are legs, it stands upright in the same way as a man. It is capable of galloping at up to 70 km/hour, but generally

prefers slow, stealthy movement, even over long distances, which accounts for the rarity of sightings.

The orifice's entrance is ringed with teeth. Inside, hollow spikes line the stomach wall. These usually lie flat, and are raised by erector muscles, which also cause poison secreted by glands behind the spikes to squirt through them. For an analysis of the venom, see chapter 9 of [5].

Apart from these obvious differences, the devourer is still recognizable as a placental mammal, though it seems to have no close relatives, and its classification is still heavily disputed (see section 8).

The devourer is the best camouflaged of any mammal. Its short fur grows with extreme rapidity, and is versatile in its colouring, to the extent that the devourer can mimic changing scenery within a matter of days, very useful over the large distances covered. This, combined with the hunting devourer's ability to literally flatten itself against a surface, renders it hard to spot without moving, and accounts for its success in preying upon some of the most successful hunters of camouflaged prey in the animal kingdom.

6 Sex and childrearing

Intercourse among devourers is bizarre, corresponding more to insects such as the praying mantis than to any higher animal. Because the female's sexual organs are located internally, the male, whose penis, though small for a creature of his size, is otherwise normal, and is supported by a bone in the same way as that of a dog, must climb inside the female for intercourse to occur. Soon after the male has ejaculated, the female activates her poison spikes, killing the male. No-one has advanced a convincing theory as to why, but MacDonald has suggested that, owing to the female's enforced fast from conception until her child is weaned, the male serves as extra food, the female also benefitting from whatever he has eaten recently. Takahashi and Sugo add that it seems that females often mate with males who have just eaten, before they enter the digestive torpor.

The chances of conception occurring after intercourse are understandably unusually high, with an average rate of about 60%. It is not known whether the female devourer has an oestral cycle, but this is highly probable. After conception, the female sex hormones modify the body's response to feeding, so that the female remains alert, but inactive throughout her pregnancy, which lasts between seven and eight months. Litters are usually two or three in size, with a male to female ratio of 5:3. This acts to maintain the sex ratio necessary for the male's inevitable death during intercourse, and has been the subject of scrutiny in recent years in the field of genetics [8]. During meiosis in the male, a large proportion of sperm cells containing a Y chromosome spontaneously break down, to be reabsorbed in the testicles.

Birth is not a precise event in devourers, as the litter remains within the female's central cavity for the majority of the time until it is weaned at the age of three or four months old, with short excursions for adaptation to senses, and to build muscle tone. The female's nipples, are internalized.

After being weaned, the juvenile devourers remain with their mother in the breeding caves for a further four or five months, after which they accompany her outside, and begin to learn how to fend for themselves. They leave their mother after thirty-six months, and are fully mature by the age of seven. It is during this period that they often make their widest excursions out of the rainforest which is their usual habitat.

Devourers may live to be twenty-five or even thirty years old.

7 Diet and capture of prey

The devourer preys on a wide variety of large mammals, herbivore, carnivore and omnivore. A full discussion of its prey is beyond the scope of this paper, and has been done admirably by Meyer and Holt [4]. The devourer's long feeding cycle means that it may spend several weeks hunting for each meal that it catches. This is not only possible, but necessary, as, owing to its unique choice of prey, it is hard to find, and harder to catch.

Radio-tagging has enabled researchers to follow the devourer's movements precisely, and not only over large distances, the usual application for such tagging, but, from the air, over relatively short distances, to within a few metres. This has been one way of removing both danger, and the difficulties with tracking an animal so well camouflaged from the scientific enterprise.

The devourer, once it has found a prospective prey animal, will spend several hours circling the intended victim, often lying motionless for long periods when in the slightest danger of being spotted, making a small mound about 30cm high and 2–3m in diameter.

Eventually, the devourer selects a spot to wait for the prey to pass. It may change this spot several times over the course of up to a week if it is unsuccessful at the first attempt. When the prey finally comes within range, the devourer stands up into the prey's path, and simply puts its orifice around the prey, immediately activating the spikes in its internal cavity. The prey, taken by surprise, has no time to react, and is dead within 10–20s. Fatalities to the devourer during capture have never been observed.

The number of prey taken before the digestion phase ensues depends upon the size of the prey, as well as of the devourer: up to ten chimpanzees may be eaten in one meal, whereas only one lion or leopard would usually be eaten, unless it had young, when they may be consumed as well.

Finally, the devourer either returns to the breeding caves to take shelter, or finds a suitable refuge. Digestive torpor generally ensues within eight hours of eating, and the devourer will move reasonably quickly and directly, despite the fact that it is both encumbered and made vulnerable to attack by its load: its only form of attack or defence is to eat.

8 Classification

Ever since its discovery, geneticists have argued over the devourer's origin. Until recently, no more could be said other than that it was a placental mammal,

but in 1990 a study by Hyølstum made a tentative suggestion as to a possible ancestry [1].

[This section is unfinished]

9 Conclusion

The devourer is a fascinating creature, which has only just started to receive the attention it deserves. Over the past ten years many advances have been made in the study of this singular mammal, but much remains to be done. In particular, not enough is known about how the devourer affects the ecosystem within which it lives. In this paper I have tried to summarize the current state of knowledge. I hope also that it will publicize the cause for more scholars to turn their attention to such a worthy subject.

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