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An Ecological Look at Arthur Conan Doyle's 'The Hound of the Baskervilles'

Julián Monge Nájera | Ecologist
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With its cold mist-shrouded "wasteland", *The Hound of the Baskervilles* is one of my favorite novels. This piece, part of a series on the ficticious Victorian detective Sherlock Holmes, captivates any naturalist or nature lover with its scenic descriptions of the impressive moors of Dartmoor, in Devon, north of England. Thus, when naturalist Jack Stapleton —an important character in the story— suggested that a mysterious howl is the song of the Little Bittern (*Ixobrychus minutus*), I felt the need to know more about this bird and other striking moor organisms. Here I present a look at the flora and fauna of the Dartmoor Moor, where writer Arthur Conan Doyle located this literary classic.

The Dartmoor Moor [1] is located on a plateau that, in the Carboniferous (more than 318 million years ago), was home to large amphibians, primitive reptiles and now-extinct plants that reached 30 meters in height. At the time of the fictional Dr. Watson and Sherlock Holmes' visit, the plateau had a relatively mild weather, ranging from 1 to 18 degrees Celsius, but with frequent days of fog, rain and hail.

In its waters, the fugitive assassin Selden (a character in the novel), may have found food by fishing for Atlantic salmon, *Salmo salar*, a fish that spends most of its life in the sea, but returns to rivers in the spawning season.

Along with salmon and other less desirable fish, the naturalist in the story, Jack Stapleton, may have noticed the fascinating palmate newt, *Lissotriton helveticus*, a small carnivorous amphibian —and sometimes cannibal— that hibernates under logs and mate in the water. This animal, reminder of the swamp's Carboniferous time, uses magnetic sensors and frog calls to find pools where the male "dances" for his lady, and, if she accepts, gives her a spermatophore that she inserts into her cloaca to fertilize hundreds of eggs.

On the ground, if he looked as usual for footprints and other clues, Holmes could have seen red and oyster mushrooms. The fungus called Scarlet Elf Cup, *Sarcoscypha coccinea*, grows on rotting wood, serves as food for mice and slugs, and was used in ancient times to color dried flowers.

The Oyster Fungus, *Pleurotus ostreatus*, could have helped Selden survive in the moor, because it is easy to distinguish and excellent food. However, Selden preferred another way to obtain what he needed, with tragic effects, as the novel tells us.

From my sketchbook: Moor biodiversity that Sherlock Holmes might have seen: Atlantic Salmon (*Salmo salar*), Palmate Newt (*Lissotriton helveticus*), Oyster Fungus (*Pleurotus ostreatus*) and Scarlet Elf Cup, (*Sarcoscypha coccinea*).

On the ground, he could have found the round-leaved sundew, *Drosera rotundifolia*, a plant that attracts insects with its sweet shiny drops, and digests them to extract ammonia and other scarce nutrients in the acidic swamp environment.

Sherlock Holmes never showed any interest in topics he thought useless to criminological research, so I imagine he would have

scorned knowing that, at his feet on Dartmoor, crawled the world's largest land slug, the Keelback Slug *Limax cinereoniger*, which can reach 30 centimeters in length.

He might have glanced with better countenance the pretty High Brown Fritillary *Fabriciana adippe*, a currently scarce butterfly whose extinction is feared; it is remarkable for laying its eggs on ferns, which is unusual because ferns have excellent chemical defenses against herbivorous caterpillars.

Another small inhabitant of this moor is the Blue Ground Beetle *Carabus intricatus*, a spectacular metallic blue insect virtually extinct elsewhere in England. Like the Baskerville Hound, this beetle attacks at night and preys on the slug *Lehmannia marginata.* During the day, it hides in damp and dark places.

Among the birds, the Little Bittern that I mentioned at the beginning, is the only bird that receives significant treatment from Doyle in this novel. It goes out at night to fish, but also eats amphibians and insects. In breeding season, the male calls the females with his strong bellow, and together they guard half a dozen eggs in a nest located just a little higher than the water level. After a couple of months, the chicks leave the nest and, as adults, migrate to southern Africa.

Another bird that, due to its song and elegance, could have caught the attention of Watson or Holmes, is the thrush *Turdus torquatus*, which feeds on earthworms, insects, frogs and mice, as well as fruits, especially those of the juniper tree. Unlike the Little Bittern, this thrush is a bad father, leaving all the work to the female, who sees her offspring leave after 40 days of intense dedication.

From my sketchbook: More biodiversity of the moors: Round-Leaved Sundew (*Drosera rotundifolia*), Keelback Slug **(***Limax cinereoniger*), Fritillary Butterfly (*Fabriciana adippe*), Blue Ground Beetle (*Carabus intricatus*), Little Bittern (*Ixobrychus minutus*), and Thrush (*Turdus torquatus*).

Other flying creatures in this habitat, surely less attractive to Watson and Holmes, are the Lesser Horseshoe Bat, *Rhinolophus hipposideros*, which, after surviving the winter in caves, gives birth to a baby per mother when the weather improves. The babies develop in nurseries with up to 100 females and 20 males, and when

they stop suckling, they feed on insects just like their parents, becoming another key component of the Dartmoor ecosystem.

Another animal that roams the moor at night, like the hound, is the European Polecat, *Mustela putorius*; although rarely seen, it is certainly noticeable when walking near its scented territorial markings. It is an important ecological controller for populations of mice, birds, amphibians, and reptiles. Famous for having several females in each family, the polecat was considered an example of promiscuity in old English literature, a bad name from which he has never been able to escape, and surely the peasants of the Baskerville lands would have persecuted him.

From my sketchbook: European Polecat (*Mustela putorius*) and Irish Wolfhound.

Finally, the hound: based on the descriptions in the novel, it was large and ferocious, so it may have been an Irish wolfhound, dangerous enough to be used in wolf control in older times; as the saying goes, "gentle when stroked, fierce when provoked".

The novel explains that his aggressive behavior was only the result of the mistreatment he suffered. I will not say more, because if you have not read this novel, you should: none of the films that have been made, not even the beautifully photographed 1939 version directed by Sidney Lanfield, will give you the same level of satisfaction. And when you do, hopefully you will occasionally stop to think about the entire complex ecosystem around the cold paths travelled by that the characters in *The Hound of the Baskervilles.* By the way, on January 14, 2022, a public exhibition of the manuscript opened in New York, where you can see the changes that Doyle made to the original text [2].

Julián Monge-Nájera

Ecologist and Photographer

Universidad Estatal a Distancia

San José, Costa Rica

Email: julianmonge@gmail.com

Publications: https://cr.linkedin.com/in/julianmongenajera-4a60a918/es

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