



THE  
**TORAH**  
ENCYCLOPEDIA  
— OF THE —  
**ANIMAL**  
**KINGDOM**

Volume I: Wild Animals/ *Chayos*

*Sample Chapter:*

**THE HYRAX**

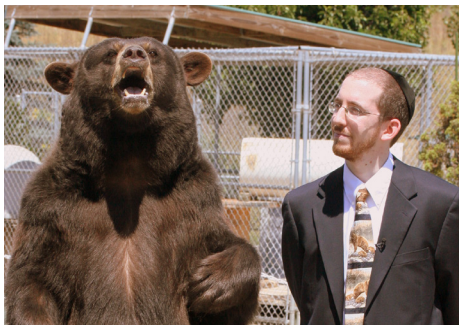
**RABBI NATAN SLIFKIN**

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Rabbi Natan Slifkin, the internationally renowned “Zoo Rabbi,” is a popular lecturer and the author of numerous works on the topic of Judaism and the natural sciences. He has been passionately studying the animal kingdom his entire life, and began working on *The Torah Encyclopedia of the Animal Kingdom* over a decade ago.

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# HYRAX



## The Enigmatic Hyrax

### ■ LAW AND RITUAL

Hyraxes, also called conies,<sup>1</sup> rock badgers, rock rabbits, and klipdas, are unfamiliar animals to most English-speaking people (although South Africans are familiar with them by the name “dassies”). However, they are significant animals in Scripture. They are first mentioned in the Torah in the list of four animals that possess only one of the two characteristics required for an animal to be kosher:

And God spoke to Moses and to Aaron, saying to them: Speak to the Children of Israel, saying, This is the animal that you may eat from all the animals which are on the earth—every animal that has a cloven hoof that is fully split, and that brings up the cud, you may eat. However, this you may not eat from those that bring up the cud and from those that have cloven hooves: the camel, for it brings up the cud, but does not have cloven hooves—it is unclean for you. And the hyrax, for it brings up the cud, but does not have cloven hooves, it is unclean for you. And the hare, for it brings up the cud, but does not have cloven hooves, it is unclean for you. And the pig, for it has cloven hooves that are fully split, but it does not bring up its cud, it is unclean for you. You shall not eat of their flesh, and you should not touch their carcasses; they are unclean for you. (Leviticus 11:1-8)

This list is repeated, in a more concise form, later in the Torah:

However, this you shall not eat, from those that bring up the cud and from those that have a completely split hoof: the camel, the hare, and the hyrax; for they bring up the cud, but they do not have split hooves; therefore they are unclean to you. And the pig, because it has split hooves, yet it does not bring up the cud, it is unclean to you; you shall not eat of their meat, nor touch their carcasses. (Deuteronomy 14:7-8)

## More Elephant than Guinea Pig

### ■ NATURAL HISTORY

Hyraxes (the plural form is sometimes written as “hyrax” or “hyraces”) are small furry mammals that somewhat resemble very large guinea pigs or woodchucks. However, anatomically, physiologically and behaviorally

they are entirely different from rodents. According to zoological taxonomy, hyraxes are classified as being most closely related to elephants (!) and are in the category of “subungulates,” meaning that they are almost ungulates (hoofed mammals), but not quite.

The species of hyrax found in Israel is *Procavia capensis* (sometimes called *Procavia syriaca*), known in Modern Hebrew as *shafan sela* and in English as the rock hyrax. They are common in many places throughout the country. One unfortunate problem with rock hyraxes is that, in certain parts of Israel, they have been incriminated as reservoir hosts for a species of sand fly which transmits the disease leishmaniasis. Nevertheless, hyraxes are popular animals. They are especially familiar and beloved in the Ein Gedi nature reserve, where they have become very tame and often approach visitors. Being easy to maintain in captivity, these unusual animals are also often found in zoos.

## Evidence for the Hyrax

### ■ IDENTIFICATION

Historically, there has been considerable confusion with regard to the identity of the *shafan* of the Torah. As we shall discover, there is a reason why this confusion developed; yet there can be no doubt that the *shafan* is indeed the hyrax.<sup>2</sup> There are several different lines of evidence for this. First, there are some verses in Scripture which match the hyrax perfectly:

There are four in the land that are small, but are exceedingly wise... The *shefanim* are not a strong people, but they place their home in the rock. (Proverbs 30:24, 26)

Being relatively small animals, hyraxes are preyed upon by eagles, jackals, hyenas and snakes. They are indeed “not a strong people.”

The verse further states that they place their homes in the rocks. A similar description is given elsewhere:

The high hills are for the ibex, the rocks are a refuge for the *shefanim*. (Psalms 104:18)

There are different species of hyrax, but the species found in Israel always lives in rocky areas (and hence is called the “rock hyrax”). They have a multitude of tun-





CHARLES KINSEY

*“The hyraxes are not a strong people, but they place their home in the rock.” (Proverbs 30:26)*

nels and hiding places in these rocks, and when danger threatens, they all dart into hiding.<sup>3</sup> Hyraxes are so intimately connected with rocks that they are never found far from them. In fact, the recent increase in piles of rocks in Israel due to construction has led to a population boom of hyraxes.<sup>4</sup>

These refuges serve to protect the hyrax from predators, including leopards, hyenas, but principally eagles.<sup>5</sup> Verreaux’s eagle is the major predator of hyraxes, feeding upon them almost exclusively.<sup>6</sup> This predation by birds is highlighted in the Midrash:

“The rocks are a refuge for hyraxes”—These hyraxes hide under rocky outcrops from birds flying overhead, that they should not eat them. And if the Holy One created His world in such a way on behalf of a non-kosher animal, how much more so did He create it for the merit of Abraham! (*Midrash Bereishis Rabbah* 12:9)

The aforementioned verse provides further important evidence regarding the identity of the *shafan*. It is described immediately after the ibex (a species of wild goat). This suggests a connection between the two, and indeed both ibexes and hyraxes noticeably live in proximity. Ibex and hyrax can be seen living together in the hills surrounding the Dead Sea, especially in the region of Ein Gedi.

As Ibn Ezra states, Arabic names provide strong evidence for identifying animals in Scripture.<sup>7</sup> In the Ehlili dialect of Arabic (Sabeen) the hyrax is called *thufun*, from the root *thafan*, which is related to the Hebrew

word *shafan*.<sup>8</sup> Tristram, the nineteenth-century chronicler of the flora and fauna of the Land of Israel, likewise notes that in Southern Arabia it is known by the similar name *thofun*.<sup>9</sup>

Several rabbinic authorities explain that the Torah specifically wanted to warn against eating those non-kosher animals that were commonly eaten by people in the area.<sup>10</sup> Hyraxes are indeed a popular food item; Tristram notes that hyrax-meat “is much prized by the Arabs.”<sup>11</sup>

Various other descriptions of the *shafan* also match the hyrax. According to some commentaries, the Torah is



ED GALLIARD

*At the Bronx Zoo, ibex and hyrax are kept in the same enclosure, just as they live together in the wild - “The high hills are for the ibex, the rocks are a refuge for the hyrax.”*





N. SLIFKIN

*When a hyrax walks, it does so with its body raised high from the ground, unlike rodents*

saying that the *shafan* does not possess split feet, while according to others, it is saying that it does not possess hooves at all. Both interpretations match the hyrax. The feet of the hyrax are of a peculiarly solid shape with a rubbery texture. The front foot has four stubby toes, while the hind feet possess three longer toes that are more divided, but there is a solid sole. At the end of the toes are thick nails. Although some zoological texts describe the hyrax's thick nails as hooves, they would not be rated as hoofed animals in the Torah, since these nails do not encase the foot—just as with the nails of the camel.

The Talmud states that, unlike most ruminants, the hare and *shafan* possess upper teeth.<sup>12</sup> This matches the hyrax, which possess large upper incisors. Later, we shall discuss the Torah's description of the hyrax chewing its cud.

## The Hyrax in Antiquity

### ■ IDENTIFICATION

The Aramaic translation of the Torah, Targum Onkelos, renders *shafan* as *tafza*, which means “jumper.” This is a vague term that could theoretically describe a variety of animals, but would certainly also well describe the hyrax.

Hyraxes are tremendously agile creatures which spectacularly leap from rock to rock in their native habitats.<sup>13</sup>

The Septuagint—the ancient Greek translation of Scripture, adapted from a translation originally made by the Jewish Sages—translates *shafan* as *chyrogrillius*, which is a difficult word to interpret.<sup>14</sup> It has been variously explained to mean “grunting pig”<sup>15</sup> or “bristly animal.”<sup>16</sup> Both of these terms could theoretically refer to the hedgehog, which is how many European readers subsequently understood it. However, the hedgehog is not a candidate for the *shafan*; it does not do anything that could be described as bringing up the cud, and nor does it match the Scriptural description of the *shafan* being a creature that makes its home inside rocks. Instead, the name *chyrogrillius* presumably refers to the hyrax. If the word means “grunting pig,” this would be a fair description, since the hyrax, like a pig, is squat and makes grunting noises. If it means “bristly animal,” it would refer to the long, stiff hairs that emerge at intervals all over the hyrax's body, which it uses like whiskers to feel its way in dark tunnels.<sup>17</sup>

In the fifth century, Hieronymus, who lived in the Land of Israel (and was thus familiar with its wildlife) and



consulted with Jewish scholars for his Latin translation of Scripture, also translated *shafan* as *chyrogrillius* in the Vulgate.<sup>18</sup> In correspondence, he explained *chyrogrillius* to refer to a creature that is “no larger than a hedgehog, and resembling both a bear and a mouse;” he notes that it is therefore also called *arktomys*, which literally means “bear mouse.”<sup>19</sup> He describes it as being very common in Israel and living in caves in the rocks. Today, *arktomys* is the Latin name for the marmot (known in America as the woodchuck or groundhog), but these are not native to the region of Israel, and they live in tunnels rather than rocks. Hieronymus was undoubtedly referring to the hyrax, which looks very much like a cross between a bear and a mouse.

In the tenth century, Rav Saadia Gaon translated *shafan* with the Arabic name *wabr*. This is the most common and widespread Arabic name for the hyrax.<sup>20</sup> Rav Saadiah would have been familiar with the hyrax from both Egypt and the Land of Israel.

## Europe and the Loss of the Hyrax

### ■ IDENTIFICATION

In medieval Europe, where the chain of Torah transmission largely occurred, people were entirely unfamiliar with certain animals from the Land of Israel. The name *tzvi* was transposed from the gazelle to the deer, and *neshet* from the vulture to the eagle. Hyraxes likewise live only in Africa and Asia, and were entirely unknown in Europe. As a result, the identity of the *shafan* was lost, and the name *shafan* was usually transposed to the rabbit. (Hence, when Hebrew was revived as a spoken language in modern times, the rabbit was often still referred to with the name *shafan*, and the hyrax was thus given the more specific name of *shafan sela* – “rock *shafan*.”)

However, as some European scholars recognized, the *shafan* of Scripture cannot be the rabbit. First of all, there are no rabbits in the Land of Israel. The European rabbit was originally native only to the Iberian Peninsula, subsequently being artificially introduced to northern Africa and other places, but it never lived in the Land of Israel.<sup>21</sup> Furthermore, the Scriptural description of the *shafan* as an animal that builds its home and hides among the rocks does not match rabbits, which seek terrain where they can dig tunnels into the earth rather than hiding in rocks.<sup>22</sup> Hyraxes, in contrast, are so closely associated with rocks that they never live anywhere else. There are certain species of rabbits which habitually hide under rocks, of the genus *Pronolagus*, but these are only found in southern Africa.

Some would counter that God, in listing kosher and non-kosher animals, is not limited to describing ani-

mals from the local region. However, the *shafan* is also described in Psalms and Proverbs as a familiar animal. Some would still claim that these books were written with Divine inspiration. However, King David describes the rock-hiding *shafan* in the same verse as the hill-climbing ibex; it is unreasonable in the extreme to propose that instead of referring to a local rock-hiding animal that lives in the exact same vicinity as the ibex in Ein Gedi, he was referring to an animal that does not live in the region. And King Solomon mentions the *shafan* in the context of seeking to relate the ingenuity of an animal that hides under rocks; when there is a local animal that does precisely that, it is extraordinarily unreasonable to propose that he instead is referring to an animal with which his audience would be entirely unfamiliar.

Aware of the problems with identifying the *shafan* as the rabbit, some European investigators of the wildlife of the Bible sought to learn of a different animal in the Land of Israel that might be a suitable candidate. In the seventeenth century, Samuel Bochart, author of the *Hiero-zoïcon*—the first comprehensive study of all the animals mentioned in Scripture—argued that the *shafan* is the jerboa.<sup>23</sup> This is a small rodent that has long back legs for jumping and tiny forelimbs. Bochart had never seen a jerboa, but he was under the (mistaken) impression that it lives in rocks, thus matching the Scriptural description of the *shafan*. As further evidence, he argued that the Septuagint’s term *chyrogrillius* was a word referring to the jerboa, based on the authority of a fourteenth-century Copto-Arabic lexicon.<sup>24</sup> Following Bochart, the identification of the *shafan* as the jerboa was subsequently adopted by several Jewish and non-Jewish scholars;<sup>25</sup> as a jumping animal, it was also understood to be the *tafza* mentioned in the Aramaic Targum Onkelos.



*A lesser jerboa*



*A hyrax emerging from the safety of its refuge*

Jerboas are rodents, not ruminants, and they are not known to chew the cud. But it is possible that, like rabbits and hares, they engage in the process known as cecotrophy or refection. This refers to their reingesting certain types of fecal pellets that are specifically produced for this purpose; we shall discuss this process in more detail with regard to the hare. Many rodents practice such behavior.<sup>26</sup> Thus, it is possible that the jerboa practices cecotrophy, and that like the hare, the jerboa would be described as “chewing the cud” because of this.

However, the jerboa cannot be the *shafan*. Contrary to the beliefs of Bochart and the other European scholars—who had never seen a jerboa—no species of jerboa makes its home in rocks; all live in tunnels excavated in sand or earth. Furthermore, the Torah is only listing *behemos* and *chayos*—quadrupeds of reasonable size. Jerboas would presumably be classified as *sheratzim*, creeping verminous creatures, which are prohibited from consumption in a different verse.<sup>27</sup> Hence, the jerboa cannot be the *shafan*.

Other writers searched further afield. Some have proposed that the *shafan* is the java mouse deer.<sup>28</sup> This is a tiny deer that occasionally hides under rocks, just as the *shafan* is described, and which chews the cud. It is argued that since the feet of the mouse deer are splayed, with hooves only covering the extremities, these are rated as paws with claws rather than cloven hoofs. However, this identification is untenable for the same reasons that the rabbit is untenable. The *shafan* is described as a familiar animal in Scripture and Talmud, whereas the mouse deer is an obscure creature living only in the islands of Indonesia. The description of the *shafan* habitually making its home in the rocks, and mentioned in association with ibexes, clearly matches the hyrax far better than the mouse deer. If the feet of the mouse deer are not going to be considered as “split hooves,” then it is more reasonable

to propose that we have some additional animals with a single kosher sign than to propose that the mouse deer is the *shafan* of Scripture. But in any case, the feet of mouse deer are not all that different from those of other deer; the part of the foot that touches the ground is entirely split, and the extremities are entirely encased by hoof.

Still others suggested that the *shafan* is a member of the llama family.<sup>29</sup> However, such animals do not hide under rocks.<sup>30</sup> Furthermore, they are only native to South America, whereas the *shafan* is described in the Torah, Psalms and Proverbs, as well as in the Talmud, as a familiar animal.

## The Rediscovery of the Hyrax

### ■ IDENTIFICATION

For Europeans, the true identity of the *shafan* was first rediscovered in the eighteenth century by the British travelers Thomas Shaw<sup>31</sup> and James Bruce,<sup>32</sup> who journeyed throughout the Levant and reported on the plants and animals of the Holy Land. They described the hyrax in detail, for the benefit of their European readers who did not know this creature, referring to it by its local names of *daman Israel* and *ashkoko* (“the bristly one”). They noted that it is clearly the *shafan* described in Scripture: a smallish animal that hides in the rocks and is observed to chew its cud. Furthermore, the fact that the hyrax lives together with ibex in the same habitat means that it is clearly being described in the verse, “The high hills are for the ibex, the rocks are a refuge for the *she-fanim*.” In the nineteenth century, many more first-hand studies were made of the wildlife of the Land of Israel, further spreading the awareness that the hyrax is the *shafan*. Thus, Rabbi Yosef Schwartz, who wrote a book on the geography and natural history of the Land of Israel based on his experiences there, identified the *shafan* as the hyrax, giving it the Arabic name of *wabr* (like Rav Saadiah Gaon).<sup>33</sup>

It took a while for knowledge of the hyrax to spread through Europe; in the nineteenth century, while some accepted that it is the *shafan*,<sup>34</sup> others remained unfamiliar with the hyrax and maintained that the *shafan* was either the rabbit or jerboa, working with the mistaken belief that these animals habitually hide in rocks. Eventually, however, as knowledge regarding all these animals increased, it became clear that the rabbit and jerboa could not be the *shafan*, while the hyrax was an excellent match. Thus, in the nineteenth century, Rabbi Meir Leibush (known as Malbim) and Rabbi Dovid Tzvi Hoffman both explained that the *shafan* is the hyrax.<sup>35</sup>

By the twentieth century, the hyrax was already becoming well-known (and terms for it such as coney and rock-



badger became antiquated). All scholars of Scriptural zoology accepted it as the *shafan*.<sup>36</sup> The only people to reject identifying the *shafan* as the hyrax are those who are uncomfortable with the Scriptural description of it “chewing the cud,” due to their particular religious outlook (as we shall explain), or those who are uncomfortable with stating that the great Torah scholars of medieval Europe were only familiar with animals from their part of the world. However, no other remotely viable candidate for the *shafan* exists.<sup>37</sup>

## Does the Hyrax Chew The Cud?

### ■ THEOLOGY, PHILOSOPHY AND SCIENCE

The Torah describes the *shafan* as *ma'aleh gerah*, literally “bringing up by way of the throat,”<sup>38</sup> but more simply translated as “chewing its cud.” Although hyraxes possess unusual digestive systems, there is no chamber producing “cud” to be chewed.

Yet there have been certain observers who claim to have seen the hyrax chewing its cud. The eighteenth-century traveler Bruce, who rediscovered the hyrax for Europe, kept a captive hyrax specifically in order to examine this, and writes that it does indeed ruminate. In the twentieth century, one zoologist likewise reported having seen

hyraxes chewing their cud, albeit for a much shorter period than with regular ruminants.<sup>39</sup>

Nevertheless, the consensus of zoologists is that the hyrax does not ruminate. Animals that ruminate are clearly observed to do so, engaging in this behavior for long periods of time. Studying hyraxes does not reveal such behavior.

But there is another possibility. There is a very limited form of rumination, called “merycism,” which is found in some Australian marsupials such as koalas and kangaroos, and in other animals such as proboscis monkeys. With merycism, the animal regurgitates a small amount of food, and it is not chewed as thoroughly as is the case with ruminants, nor does it play as fundamental a role in digestion. Still, this would undoubtedly be sufficient basis for the Torah to describe such a process as “bringing up the cud.” Hyraxes frequently make brief chewing movements with their mouths, long after they have eaten. There also appears to be movement in the throat immediately preceding these chewing motions.<sup>40</sup> Perhaps the hyrax engages in merycism, which would account for those who have claimed to observe it ruminating, as well as the Torah’s description of it.



*A hyrax demonstrating its ruminant-like method of chewing*





GORDON CONGDON

However, other zoologists doubt this interpretation of the actions of the hyrax. They argue that hyraxes will work their jaws from side-to-side when confronted with something new and potentially dangerous, as a threatening gesture. It is therefore suggested that all alleged observations of the hyrax chewing its cud may in fact be observations of a form of communication that has nothing to do with food.<sup>41</sup>

Those who conclude that the hyrax does not chew its cud are therefore faced with the question of why the Torah describes it as a ruminant. One approach to this relates to the hyrax's internal physiology. The hyrax possesses a somewhat ruminant-like gut, with three distinct areas for digestion.<sup>42</sup> This in turn means that hyraxes take a long time to digest food, and are able to process fiber efficiently, similar to a ruminant.<sup>43</sup> According to some zoologists and rabbinic authorities, this internal digestive physiology is the basis for the Torah idiomatically describing the hyrax as chewing the cud.<sup>44</sup>

Another approach is based on the fact that the lateral, gyratory chewing movements of the hyrax's jaws, resemble those of a cud-chewer.<sup>45</sup> Furthermore, like ruminants, hyraxes engage in chewing actions even when they are not grazing. Superficially, then, a hyrax certainly *looks as though* it is ruminating, and some explain that the Torah therefore describes it as bringing up the cud.<sup>46</sup>

There are several ways of explaining the precise reasoning behind this. One explanation is that these chewing motions cause people to mistakenly think that the hyrax brings up the cud, which is why the Torah had to mention it. Another explanation is that since most animals that chew in this way are cud-chewers, the term "chewing the cud" is used idiomatically to refer to all animals that chew in such a way.

Alternately, and perhaps preferably, usage can be made of the principle that *dibra Torah k'lashon bnei adam*, "the Torah speaks like the language of men." This phrase appears in numerous places throughout the Talmud and Midrash, in the rabbinic works of the medieval period, and in the writings of recent scholars, and its meaning varies.<sup>47</sup> But according to several important rabbinic authorities, it means that the Torah packages its messages and laws within the scientific worldview of antiquity.<sup>48</sup> Thus, since the hyrax appears to chew the cud and is commonly thought of as being a cud-chewer, the Torah describes it as such.





N. SLIFKIN

## The Only Such Animals in the World?

### ■ THEOLOGY, PHILOSOPHY AND SCIENCE

The Talmud states that the four animals listed in the Torah as possessing only one of the two kosher signs are the only such animals in the world:

...The school of Rabbi Yishmael taught: “And the camel, because it (*hu*) brings up the cud etc.”—the Ruler of His world knows that there is no creature that brings up the cud and is non-kosher except for the camel (and the other animals listed), therefore Scripture specified it with *hu* (“it” i.e. these animals alone chew the cud but lack split hooves). (Talmud, *Chullin* 59a)

Yet, based on the previous discussion, there is a difficulty with this statement. In order to account for why the hyrax is described as bringing up its cud, we noted that the definition of bringing up the cud has to be expanded to include merycism, a compartmentalized stomach, or ruminant-like chewing. In the section on the hare, we will see that it was also extended by some to include a phenomenon known as cecotrophy. All these features also exist with other animals—kangaroos engage in ruminant-like chewing, koalas and proboscis monkeys engage in merycism, capybaras engage in cecotrophy,

and many animals have compartmentalized stomachs. Accordingly, there are more than just four animals with one kosher sign. This would appear to contradict the statement of the school of Rabbi Yishmael that the four animals in the Torah’s list are the only such animals in the world.

One solution to this problem is that the word “world” can have different meanings. The word “world” of the Sages presumably does not include other planets. It also need not refer to the entire planet Earth. There are several instances in the Talmud where we see that it refers to a limited region, such as the civilized areas of the world familiar to the Sages.<sup>49</sup> Accordingly, since these other animals with one kosher sign live in remote regions such as South American and Australia, they do not conflict with the Talmud’s statement. In the world of the Torah, the four animals listed as possessing one kosher sign are indeed the only such animals.

Elsewhere, the Talmud states that Moses’ statements about the laws of kosher animals are evidence for the divine origins of the Torah.<sup>50</sup> The precise reference and meaning of the Talmud’s statement is unclear and disputed.<sup>51</sup> But, apparently beginning in the eighteenth cen-

tury, it was taken as referring to the list of four animals with one kosher sign, and as meaning that these are the only such animals on the planet, in line with the aforementioned exegesis.<sup>52</sup> However, in light of the fact that the list of four animals is best understood as referring to animals from the local region rather than being an exclusive list of all such animals on the planet, this recent interpretation of the argument for the divine origins of the Torah is problematic.

## The Median Hyrax

### ■ SYMBOLISM

The Sages explained the four kingdoms under which the Jewish People were exiled – Babylon, Persia-Media, Greece, and Rome – as being a motif that is expressed in many different forms in Scripture. They thereby perceived the turbulent events of history as being part of the grand Divine plan for creation.<sup>53</sup>

Elsewhere, we have seen that the four wild beasts in Daniel's vision symbolized these four kingdoms. But even concepts in the Torah that are not obviously symbolic were also interpreted as referring to the same motif. Thus, the Torah's list of animals with one kosher sign—the camel, hyrax, hare and pig—was interpreted by the Sages as referring to the four kingdoms. Unlike the symbolism of the predators in Daniel's dream, which is wholly negative, these animals possess one of the two signs required for an animal to be kosher, and as such they express a certain positive symbolism. The hyrax, second in the list, is understood to allude to the second of the four kingdoms: the joint kingdom of Persia and Media:

Rabbi Shmuel bar Nachman said: The prophets all saw the kingdoms going about their business. Moses saw the kingdoms going about their business: “The camel” is Babylon... “the hyrax” is Media. The rabbis and Rabbi Yehudah son of Rabbi Simon [differed regarding this]. The rabbis said: Just as this hyrax has a kosher sign (i.e. bringing up the cud) and a non-kosher sign (i.e. no split hooves), so too the kingdom of Media established both a righteous person (i.e. Darius II) and an evil person (i.e. Ahasuerus).<sup>54</sup> Rabbi Yehuda son of Rabbi Simon said: Darius II, son of Esther, was pure from his mother's side and impure from his father's side... (i.e. the kosher and non-kosher aspects are expressed in the same person). (Midrash Vayikra Rabbah 13:5)

The Midrash continues with further parallels, based on plays-upon-words in the description of the hyrax bringing up its cud:

Another explanation: ...“the hyrax” is Media, “for it raises up the cud” – that it [raised its voice in] praise of the Holy One, as it says, “So says Cyrus, king of Persia” (Ezra 1:2)...

Another explanation: ... “the hyrax” is Media, “for it brings up its cud” – that it ‘brought up’ Mordecai, as it says, “And Mordecai sat at the gate of the king” (Esther 2:21)....

Another explanation: ... “the hyrax” is Media, “for it brings up the cud (*gerah*)” – that it dragged (*megarer*) another kingdom after it (i.e. Greece). (Midrash Vayikra Rabbah ibid.)

Similar such parallels were drawn in other Midrashic texts.<sup>55</sup> Later scholars sought to find further grounds for the hyrax to symbolize Persia/Media. It was pointed out that one of the major cities of the Median empire was Isfahan, which is etymologically similar to *shafan*.<sup>56</sup>

Perhaps most remarkable is how a passage in Proverbs describing four small yet ingenious animals – the ant, hyrax, locust, and spider – was likewise interpreted by the Sages as referring to the four kingdoms. Here, too, the hyrax symbolizes Persia and Media, and a further parallel is added to the metaphor:

“There are four in the land that are small” (Prov. 30:26) – This alludes to the four kingdoms.... “The hyraxes are not a strong people” — this refers to Media. Just as the hyrax has a kosher sign and a non-kosher sign, so too Media; Ahasuerus the uncircumcised, and Esther the Jew. “And they put their homes amongst the rocks” — that they sought to build the Holy Temple, as it says, “So says Cyrus king of Persia...” (Midrash Mishlei 30:26; Yalkut Shimoni, Mishlei 904)

The hyrax's homebuilding could have been compared to the Persian building of palaces. Instead, it was interpreted as symbolizing the Persian rebuilding of the Temple. This denotes an unusually positive view of both the Persian-Median empire as well as the non-kosher hyrax.

It seems that, notwithstanding its non-kosher status and subsequent symbolism for a foreign empire, the hyrax was always perceived in a positive light. The references to the hyrax in Psalms and Proverbs present it as part of the beauty and wonder of the natural world. We also find that the scribe who served as emissary of the righteous king Yoshiyahu was named Shafan, indicating that the hyrax had positive associations.<sup>57</sup> It seems that there was always a fondness for this familiar, yet somewhat enigmatic, small furry animal. ■

### NOTES

1 Note that the term “coney,” which is used in some works as a translation of *shafan* (or *arneves*), usually refers to the rabbit, and was originally used by European and American translators who were unfamiliar with the hyrax. Since then, the word has sometimes also been used to refer to the hyrax.

2 For more extensive discussion, see *The Camel, The Hare And The Hyrax* (Jerusalem: Zoo Torah/ Gefen Books 2011), by this author, as well as various posts at [www.rationalistjudaism.com](http://www.rationalistjudaism.com).





Perhaps hyraxes were regarded favorably because they are simply cute, especially babies such as this one

- 3 J. B. Sale, "The habitat of the rock hyrax," *Journal of the East African Natural History Society* (1966) 25 pp. 205-214.
- 4 Arik Kershenbaum, "Rock hyrax (*Procavia capensis*) den site selection: preference for artificial sites," *Wildlife Research* (2011) 38 pp. 244-248.
- 5 H. Hoeck, "Hyraxes," in *The Encyclopedia of Mammals* (Ed. D. MacDonald, Oxfordshire: Andromeda Oxford 2001).
- 6 V. Gargett, *The Black Eagle: A Study* (Randburg, South Africa: Acorn Books, 1990).
- 7 Ibn Ezra, Commentary to Leviticus 11:13.
- 8 Fulgence Fresnel, *Journal Asiatique*, 3rd series, v. 514, cited in *The Jewish Encyclopedia* (New York and London: Funk & Wagnalls Company 1901), "Coney."
- 9 H.B. Tristram, *The Natural History of the Bible* (New Jersey: Gorgias Press 2002, reprint of 1883 ed.), p. 75.
- 10 See the commentaries of Chizkuni, *Bechor Shor* and Rabbi Chaim Dov Rabinowitz, *Da'as Sofrim* (Jerusalem 1986) to Leviticus 11:4.
- 11 H. B. Tristram, *The Natural History of the Bible*, p. 77.
- 12 Talmud, *Chullin* 59a.
- 13 K. Rübsamen, I.D. Hume and W.V. Engelhardt, "Physiology of the Rock Hyrax," *Comparative Biochemistry and Physiology A* (1982) 72:2 pp. 271-277. Rabbi Dovid Tzvi Hoffmann notes that the word *tafza* could well refer to the hyrax for this reason.
- 14 See Ilya Dines, "The Textual and Pictorial Metamorphoses of the Animal called *Chyrogriilius*," in *Science Translated: Latin and Vernacular Translations of Scientific Treatises in Medieval Europe*, eds. Michèle Goyens, Pieter De Leemans and An Smets (*Mediaevalia Lovaniensia*, Series I, *Studia XL*), (Leuven: Leuven University Press, 2008), pp. 73-90.
- 15 This was the etymology given by Heyschius of Alexandria in his fifth-century dictionary; see H.G. Liddell, *A Greek-English Lexicon* (Oxford, 1897), p. 1732.
- 16 Julius Fuerst, *A Hebrew & Chaldean Lexicon to the Old Testament* (London: Willams & Norgate 1867, translation by Samuel Davidson) p. 1432.
- 17 Rosenmüller, *Handbuch der Biblischen Alterthumskunde* (Leipzig: Baumgärtner 1823-1831) vol 4 part II p. p. 220, likewise states that the hyrax earns its Amharic name of *aschkoko* due to its possessing hedgehog-like hairs that resemble thorns, called *aschok* in Amharic.
- 18 Although Hieronymus used this translation for *shafan* in Leviticus and Deuteronomy, he used *ericii* (hedgehog) for the *shafan* in Psalms, and *lepusculus* (small hare) for the *shafan* in Proverbs; presumably, he decided to use terms that would be more familiar to his readers. See Ilya Dines, "The Textual and Pictorial Metamorphoses of the Animal called *Chyrogriilius*," loc cit.
- 19 Letter to *Sunnias and Fretela* (403 CE). Cited by Rosenmüller and Rabbi Dovid Tzvi Hoffman.
- 20 H. B. Tristram, *The Natural History of the Bible* (New Jersey: Gorgias Press 2002, reprint of 1883 ed.), p. 75.
- 21 "...The cape hare (*Lepus capensis*)... is the only endemic species of lagomorph known from the Middle East since the Middle Pleistocene" - Eitan Tchernov, Theodora Bar-El, "Lagomorph Remains at Prehistoric Sites in Israel and Southern Sinai," *Paléorient* (2000) 26:1 pp. 93-109. One can find occasional references to rabbits in Israel, but closer investigation inevitably demonstrates these to be mistakes, and to actually be describing hares.
- 22 Yosef Schonhak, *Toldos Ha-Aretz* (Warsaw: H. Bomberg 1841) vol. I p. 32, rejects identifying the *shafan* as the rabbit for this reason, as does *Kisvei HaRav Dr. Yosef HaLevi Zeliger* (Jerusalem: Defus Ivri 1930) p. 236, also cited in *Teshuvos R' Yitzchak HaLevi Herzog, Yoreh De'ah* 23.
- 23 Samuel Bochart, *Hierozaicon Sive Bipertitum Opus De Animalibus Sacre Scripturae* ("A Natural History of Old: A Two Volume Work on Animals of the Sacred Scriptures") (London 1663), vol. 1 pp. 1001-1017.
- 24 The Copto-Arabic lexicon by Barakat Ibn Kabar was called the *Scala Magna*; in the seventeenth-century, Athanasius Kircher made the work available to the West in his trilingual *Lingua Aegyptiaca Restituta*. The *chyrogriilius* is translated into Arabic on p. 165.
- 25 Rabbi Dr. Ludwig Lewysohn, *Die Zoologie des Talmuds* (Frankfurt am Main 1858), p. 110 (strangely, although he refers to Rosenmüller in his *Handbuch der Biblischen Alterthumskunde*—who rejected the jerboa in favor of the newly-rediscovered hyrax—Lewysohn makes no mention of the hyrax and misunderstands the term *klipdachs* as referring to the jerboa). Alexander Kohut (1842-1894), in his extended commentary on the *Aruch* entitled *Aruch HaShalem*, identifies the *shafan* as the *Dipus jaculus*, which is a species of jerboa. Yosef Schonhak, *Toldos Ha-Aretz* (Warsaw: H. Bomberg 1841) vol. I (*Toldos HaChaim*), *ma'areches ha-yonkim*, p. 32, observes that the jerboa described by these authors lives in tunnels in the sand, and thus cannot be the *shafan*, which is described in Psalms and Proverbs as dwelling in the rocks. Schonhak identifies it instead as the *alkadaga* (which today, in the form of *Allactaga*, refers to a particular genus of jerboas), claiming that this species of jerboa does indeed make its home in the rocks. However, this is not in fact the case.
- 26 D. M. Stoddart, "Rodents: Equipped for Gnawing," *The Encyclopedia of Mammals* (Ed. D. MacDonald, Oxfordshire: Andromeda Oxford 2001), p. 580
- 27 Leviticus 11:41. The hyrax is a significantly larger creature than the jerboa and is therefore defined as a *chayah*, albeit barely. Note that in Proverbs, the *shafan* is grouped with the locust, ant and spider as being one of the small creatures.
- 28 Rabbi Yaakov Yechezkel HaLevi (1814-1864), *Bikkores HaTalmud* (Vienna, 1863), pp. 387-9; he also proposes that the *arneves* is the greater mouse deer. A similar suggestion is proposed by Tzvi Weinberger, "Identifying the Biblical Arnevet with the Musk-Deer and the Shafan with the Mouse-Deer: A Hypothesis" (Hebrew), *BDD* 27 (March 2013).
- 29 Rabbi Meyer Lubin, "Identification of the Gamal, Shafan and Arnevet," in *Intercom* magazine, May 1973; Rabbi Dr. Moshe Tendler, "Torah and Science: Constraints and Methodology," in *The Torah U-Madda Journal*, Volume 5, 1994, p. 178.
- 30 Rabbi Dr. Yosef Zeliger, *Kisvei HaRav Dr. Yosef HaLevi Zeliger* (Jerusalem: Defus Ivri 1930) pp. 236-237 suggests that the *shafan* and

arneves are two undiscovered miniature varieties of camel, one even small enough to hide under rocks, but the conspicuous absence of any fossils or other evidence for such extraordinary creatures renders this highly implausible.

31 Thomas Shaw, *Travels, or, Observations Relating to Several Parts of Barbary and the Levant* (1738) p. 376.

32 James Bruce, *Travels to Discover the Source of the Nile*, Vol. VI: *Select Specimens of Natural History* (1790) pp. 179ff.

33 Rabbi Yosef Schwartz, *Tevuos Ha-Aretz* (Jerusalem 1845).

34 See e.g. Ernst Friedrich Rosenmüller, *Handbuch der Biblischen Alterthumskunde* vol 4 part II pp. 213-222; David Scot, "On the Saphan of the Hebrew Scriptures," *Memoirs of the Wernian Natural History Society*, vol. 6 (1832), pp. 103-112.

35 Commentaries to Leviticus 11:5.

36 E.g. Shimon Bodenheimer, *HaChai B'Eretz Yisrael* (Tel Aviv: Dvir 1953) p. 245; Menachem Dor, *HaChai BiMai HaMikra HaMishnah VeHaTalmud* (Tel-Aviv: Grafor-Daftal books 1997), p. 56; Yehudah Feliks, *The Animal World of the Bible* (Tel-Aviv: Sinai 1962) p. 45.

37 The notion that the *shafan* is an unknown or extinct animal can be refuted on zoological and zooarcheological grounds. Chapter five of *The Camel, The Hare And The Hyrax* is dedicated to this.

38 Following Ibn Ezra, Chizkuni, Radak, Rashbam, and contemporary linguistic scholarship.

39 Hubert Hendrichs, "Vergleichende Untersuchung des wiederkau-verhaltens" [Comparative investigation of cud-chewers], *Biologisches Zentralblatt* (1965) 84:6 pp. 736-739 (German).

40 This author has filmed such behavior in his own captive hyrax, which can be viewed online at [www.zootorah.com](http://www.zootorah.com).

41 J. B. Sale, "Daily food consumption and mode of ingestion in the hyrax," *Journal of the East African Natural History Society* (1966) 25 pp. 215-224; Mendelssohn and Yom Tov, *Fauna Palaestina: Mammalia of Israel*, p. 236.

42 E. T. Clemens, "Sites of organic acid production and patterns of digesta movement in the gastrointestinal tract of the rock hyrax," *Journal of Nutrition* (1977) 107:11 pp. 1954-61.

43 J. R. Paul-Murphy, C. J. Murphy et al., "Comparison of transit time of digesta and digestive efficiency of the rock hyrax, the Barbados sheep and the domestic rabbit," *Comparative Biochemistry and Physiology A* (1982) 72:3 pp. 611-613.

44 Yehudah Feliks, *The Animal World of the Bible* (Tel-Aviv: Sinai, 1962), p. 45, cited approvingly by Rabbi Menachem Kasher, *Torah Sheleimah*, *Vayikra* 11:31.

45 The skull of a hyrax and its musculature is actually very similar to that of ruminants, due to the shared need to extensively masticate the food. See C. M. Janis, "Muscles of the masticatory apparatus in two genera of hyraces (*Procavia* and *Heterohyrax*)," *Journal of Morphology* (1983) 176 pp. 61-87.

46 Rabbi Dovid Tzvi Hoffman, Commentary to Leviticus 11:5, p. 228, in reference to the hare/*arneves* but also applicable to the hyrax; also cited by Rabbi Yechiel Yaakov Weinberg, *Seridei Aish* (vol. II, 17); Rabbi Menachem Kasher, *Torah Sheleimah* to Leviticus 11:32; and Rabbi Amitai Ben-David, *Sichas Chullin* to *Chullin* 59a. An early reference to this is in H. B. Tristram, *The Natural History of the Bible* (New Jersey: Gorgias Press 2002, reprint of 1883 ed.) p. 76.

47 See Zion Ukshi, "The Torah Speaks Like the Language of Men—The Development of the Expression and its Nature" (Hebrew), *Derech Efrata* 9-10 (5761) pp. 39-59.

48 See Rambam, *Guide for the Perplexed* 2:8 and 3:3, with the commentaries of Efodi, Shem Tov, Narvoni, and Abarbanel in *Ta'anos*, 4, and Rabbi Shlomo Fisher, *Derashos Beis Yishai*, *Ma'amar Hamo'ach Vehalev*, fn. 4; Ralbag, commentary to Gen. 15:4, and commentary to Job, end of ch. 39; Rabbi Dr. Isadore Twersky, "Joseph ibn Kaspi: Portrait

of a Medieval Jewish Intellectual," *Studies in Medieval Jewish History and Literature*, volume 1 (Harvard University Press, 1979), pp. 239-242; Rabbi Samson Raphael Hirsch, *Collected Writings* vol. 7 p. 57 and commentary to Genesis 1:6; and Rabbi Avraham Yitzchak Kook, *Adar HaYekar*, pp. 37-38.

49 Rabbi David Gans, a disciple of the Maharal of Prague, in *Nechmad Ve'Na'im* 89, notes that the word *olam* sometimes refers to the entire universe, sometimes to planet Earth, and sometimes to a limited region, such as with the Talmud's references to warfare coming to the *olam* (*Sukkah* 29a). Rabbi Gans uses this to explain the statement that "Jerusalem is in the center of the world"—he explains that it refers to the areas inhabited in Biblical and Talmudic times. Rabbi Gedalyah Nadel, one of the foremost disciples of the Chazon Ish, in *B'Toraso Shel R' Gedalyah* (Maale Adumim: Shilat 2004), p. 118, brings further evidence for the "world" of the Torah being of limited scope, in the context of explaining that the Deluge was limited to Biblical lands. The Talmud rules that someone who makes an oath to abstain from drinking the waters of the Euphrates is "prohibited from all the waters in the world." Now, while there are many tributaries of the Euphrates, there is certainly no chance that, say, a stream in America is connected to the Euphrates! Hence, concludes Rabbi Nadel, when the Talmud speaks about the "world," it refers to the world of the Sages. In personal discussion with the author, Rabbi Nadel suggested applying this approach to the Talmud's statement regarding the four animals.

50 "But was Moses a hunter or trapper? From here there is a refutation of one who says that Torah is not from Heaven" - Talmud, *Chullin* 60b.

51 *Tosafos* to *Chullin* 60b explain the argument as referring to the knowledge of the *shesuah*, a mutant animal that the Talmud infers as being mentioned in Deuteronomy. Rashi to *Chullin* 60b, and Netziv in his commentary to *Sifri*, *Re'ay* 49, understand the argument as referring to the detailed information presented about all the different animals in the Torah's laws of *kashrus*.

52 Naftali Hertz Wessely, *Levanon*, *Gan Na'ul*, *HaBayis HaRishon*, *Cheder 7*, *Chalon 7*; Maharatz Chayes, Commentary to *Chullin* 60b; Malbim to Leviticus 11:6; Rabbi Pesachyah Menken in *Kerem Pesachyah* (Jerusalem 1931) p. 118, citing Wessely; Rabbi Baruch HaLevi Epstein (1860-1942) in *Torah Temimah* (1902) Leviticus 11:4 note 17.

53 Rivka Raviv, "The Talmudic Formulation of the Prophecies of the Four Kingdoms in the Book of Daniel" (Hebrew), *Jewish Studies, an Internet Journal* (2006) pp. 1-20.

54 This follows the interpretations of *Yefeh Toar*. According to *Matnos Kehunah*, it refers to Mordecai and Haman.

55 *Midrash Tanchuma*, *Shemini* 8, presents further parallels between the four animals with one kosher sign and the four kingdoms. The printed version has the hyrax representing Greece: *השפניא את התורה* *את השפן זו יון שהשפילא את התורה* *מפי הנביאים שנאמר (יחזקאל יד) הנה ימים באים נאם ה' והשלחתי רעב וגו' וכתבי ונעו מים עד* *הים*. R. Shmuel Waldberg, *Darchei HaShinuyim* (Lemberg 1870) 10:3, p. 66b says that this is based on an acronym: *השפניא את התורה מפי הנביאים*. However, R. Meir ben Samuel Benveniste, in *Os Emes* (Salonica 1565) (p. 48a in Prague 1624 edition) emends the text in order to make the hyrax represent Media, thus bringing it into line with the other Midrashim: *את השפן זו מדי שעשתה את ישראל פאה והפקר להשמיד להרוג ולאבד את כל וגו'*. This would appear to be correct, since the other verse is followed by a statement that the mother of Ptolemy was named after a hare, indicating that that section is speaking about Greece rather than Media.

56 Avraham Epstein, *MiKadmoniyus HaYehudim* (Vienna 1887), vol. 1, pp. 31-35.

57 II Kings chapter 22.