Historia naturalis bulgarica,
16: 159-166, 2004

The presence of cave hyaena (*Crocuta crocuta spelaea*) in the Upper Palaeolithic rock art of Europe

Nikolai SPASSOV, Todor STOYTCHEV

SPASSOV N., STOYTCHEV T. 2004. The presence of cave hyaena (*Crocuta crocuta spelaea*) in the Upper Palaeolithic rock art of Europe. – Historia naturalis bulgarica, **16**: 159-166.

Abstract. The very few images of cave hyaena, from the Upper Palaeolithic rock art of Europe are analyzed in the paper. The images show a very close exterior appearance (coloration pattern) with the African spotted hyaena. The causes for the extremely low number of preserved cave hyaena pictograms as well as the lack of "fantastic" zoomorphic images in the Upper Palaeolithic rock art of Europe are discussed.

Key words: Rock art, Paleozoology, Europe, Pleistocene, Cave hyaena, *Crocuta crocuta spelaea*

Introduction

After looking through thousands of large mammal depictions in the rock art of Europe's Upper Palaeolithic published during the last century, our interest was raised by the inexplicably low number of Cave Hyaena zoomorphic pictograms. It is in discrepancy with the numerous fossil finds and the large area (KAHLKE, 1999) of Late Pleistocene *Crocuta crocuta spelaea*. During the Late Pleistocene this species inhabited all of Europe except the northern part of the continent. Many caves (so called hyaena caves) are known for the large number of cave hyaena remains: Kent's Cavern, Tornewton Cave (England), Teufelslucken (Austria), Lindental Hyaena Cave (Germany), Sveduv Stul (Czech Republic), etc. (WERDELIN & SOLOUNIAS, 1991; KAHLKE, 1999). France also has numerous remains and localities from this time (BALLESIO, 1979; CLOT, 1980). In fact, France has the only European examples of Palaeolithic art representing the cave hyaena, which we shall discuss later.

Before the 90s, when an undoubted cave hyaena depiction from the Chauvet cave was published (CHAUVET et al., 1995) the positive presence of the species in Europe's prehistoric art was limited to a small ivory sculpture from La Madlaine, France (KURTEN, 1986 after WERDELIN & SOLOUNIAS, 1991). WERDELIN & SOLOUNIAS (1991) explain the scarcity of this carnivore in European Palaeolithic art with the scarcity of depictions of carnivores as a whole (WERDELIN & SOLOUNIAS, 1991). This is true, indeed, for small carnivores. As for the large ones, however, (where the cave hyaena rather belongs), they are represented well enough, and cave bear and cave lion have been portrayed numerous times.

Location and description

For comparative purposes we use a typology classifying depictions as pictograms/ mythograms, ideograms and psychograms; in the illustrations captions we used area codes suggested by E. Anati and commissioned by the UNESCO – International Council on Monuments and Sites (E. ANATI, 1993, 39-4).

J-M. Chauvet, E. Deschamps and C. Hillaire discovered in December 1994 one of the five largest sanctuaries with Palaeolithic rock art in Western Europe – Ch0•uvet Cave, the plateau of Bas Vivarais near Ardéche river, Valon-Pont d'Arc, Ardéche, South France. Among the numerous zoomorphic images on the cave walls there is a pictogram of a cave hyaena (CHAUVET et al., 1995, p. 26, fig. 23). The rock painting is in red, the animal is outlined and represented in profile, with two legs, with its head and front part with well distinguishable spotted coloration pattern (Fig. 1). Judging from the published photo, one could suggest that the image is probably unfinished, yet this could be confirmed only *in situ*. It's also possible that initially the spots took the whole outlined surface. The zoomorphic image is referred to Magdalenian, Upper Palaeolithic.

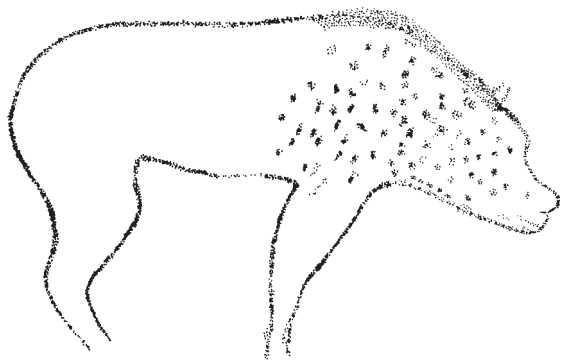

Fig. 1. Chauvet Cave, Valon-Pont d'Arc, Ardéche, France. Upper Palaeolithic /Magdalenian/ rock painting in red of a cave hyaena (*Crocuta spelaea spelaea*); the only undoubted image of this animal up till now, with punctuated skin pattern, artistic style IV after A. Leroi-Gourhan. *Source:* Drawn from a photograph by J-M. Chauvet et al., 1995, p. 26, fig. 23. *Area code:* E-I. [44]

Another image we believe to represent a cave hyaena is in the famous Lascaux Cave, Dordogne, France. The cave's pictograms are among the best studied in the world, bearing in mind that research on them was started as early as 21 September 1940 by Abbot H. Breuil, Abbot J. Bouyssonie, A. Sheynier and D. Peyrony (BREUIL, 1985, p. 107). Lascaux Cave is too one of the five largest sanctuaries with Palaeolithic rock art in Western Europe, having 600 rock paintings and 1500 rock engravings. The discussed zoomorphic depiction (fig. 2) is a rock painting in red and black (DELLUC & DELLUC**,** 1989, p. 47, fig. 42). It is in profile, with four limbs, showing an animal with a steep back. The body and the long neck have spots, including the flanks. This obviously shows that the fur has a spotted coloration pattern on the whole body. The image is depicted in the part of the

cave known as Diverticule axial and belongs to Late Solutrenian or Early Magdalenian, Upper Palaeolithic (LEROI-GOURHAN, 1971, p. 453). As far as the depiction is more schematic than other zoomorphic pictograms at Diverticule axial, which suggests an earlier relative dating, and should probably rather be referred to the Late Solutrenian.

A depiction which hasn't been taxonomically determined until now, is known from the Le Portel Cave, Ariège, France (MÜLLER-KARPE, 1966, Taf. 114-45). It was discovered on 6 March 1908 by Dr R. Geannel, who (together with G. Fauveau) explored the rock paintings, and during the same year rock engravings were studied by H. Beuil. The zoomorphic pictogram is incompletely outlined and deeply engraved, representing a part of an elongated neck, smoothly passing into part of the animal's forelimb on the proximal side. Its head is in profile (Fig. 3). The year is rounded, with a shape typical for C*rocuta*, the muzzle is probably re-engraved, yet there is no possibility that the image shows a horse.

The rock art in Le Gabillou Cave, Sourzac, Dordogne, France was discovered in 1941 by Sharmarty and Truffier: pictograms of horses, bovids, bisons, deer, a mammoth, two hares and a portrait in profile. First to study them was Dr. Gaussen, who also undertook their protection. Among the animal depictions is a deeply engraved zoomorphic image with a head in frontal view and an elongated neck with part of the forelimb in profile (Fig. 4). It has large round eyes, ears short, rounded and set far from each other, and a line-like mouth that is largely broadened (larger than the outer distance between the eyes) and reminds a "smile".

Discussion

First of all, we have to note that only the cave hyaena in Chauvet Cave has been determined as such by the authors of the first publication (CHAUVET, 1995, p. 26, fig. 23). This painting, which recently became known to zoologists and palaeontologists, raised a large interest, because it definitely shows the spotted coloration pattern of this carnivore. The outline and the coloration

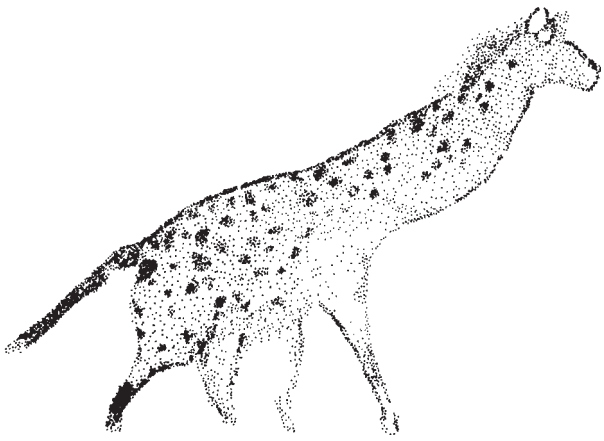

Fig. 2. Lascaux Cave, Dordogne, France. Upper Palaeolithic /Late Solutrenian/ rock painting in black of a cave hyaena (*Crocuta spelaea spelaea*), artistic style III after A. Leroi-Gourhan. *Source:* Drawn from a photograph by B. Delluc, G. Delluc**,** 1989, p. 47, fig. 42. *Area code:* E-I. [402]

indeed leave no doubt that a cave hyaena is portrayed. The angle between the muzzle and the forehead seems to be a little bit too strained and the head doesn't differ too much from some cave bear profiles from Western European Palaeolithic rock art. We believe it's possible that the initial intent was to depict a cave bear, later finishing the painting as a hyaena. Such cases of changing the initial intent are not too rare in Paleolithic art of Europe.

Despite the popularity of the paintings in the Lascaux Cave (Fig. 2), the image of a hyaena seems to be unnoticed by zoologists and most rock art specialists, and is not published or discussed in the more important classical works (BATAILLE, 1955, 65-90; BREUIL, 1985, 107-152; LEROI-GOURHAN, 1971, 362-365). A photograph is available in one of the French special editions on the cave, but the authors regard it as a pictogram of a horse (DELLUC & DELLUC**,** 1989, p. 47, fig. 42). There are indeed spotted horse images in the Late Palaeolithic art of Western Europe. The peculiar characters of this depiction, however, eliminate the horse, despite the presence of a mane. At the same time, typical hyaena features are present: steep back, elongated neck with a curving opposite to the horse (rather concave than convex), irregular spots. The tail of the animal resembles *Crocuta*, and the presence of a mane is also a character of this genus. One of the very characteristic (yet harder to notice) character of this genus' exterior is the long neck of a scavenger. It often looks even longer in alert posture – something the Palaeolithic artist didn't miss.

In both cave hyaena depictions it's clearly seen that their fur preserved the spotted coloration pattern. Judging from the colour and position of the spots on the body, the mane and the outline, the similarity between the recent and fossil forms is obvious. The Chauvet pictogram

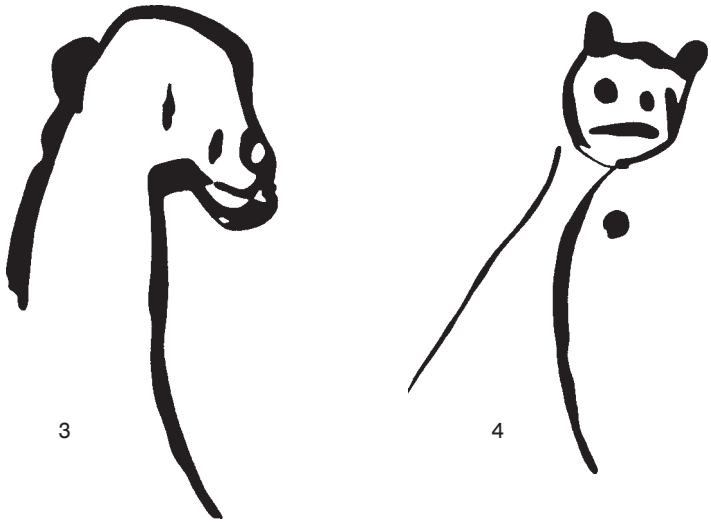

Fig. 3. Le Portel Cave, Ariège, France. Upper Palaeolithic /Solutrenian/ rock engraving of a possible cave hyaena (*Crocuta crocuta spelaea*), artistic style III after A. Leroi-Gourhan. *Source:* Redrawn from H. Müller-Karpe, 1966, Taf. 114-45. *Area code:* E-I. [563]

Fig. 4. Le Gabillou Cave, Dordogne, France. Upper Palaeolithic /Solutrenian/ rock engraving of a possible cave hyaena (*Crocuta crocuta spelaea*), artistic style III after A. Leroi-Gourhan. *Source:* Redrawn from a photograph by A. Leroi-Gourhan, 1971, p. 367, fig. 351. *Area code:* E-I. [412]

shows the posterior part of the body without spots. It is rather improbable that this was the real pattern, i.e. an indication for the disappearance of the spots in the posterior part of the body. As already noted, this is rather due to an unfinished painting. It's well known that populations inhabiting harsher northern latitudes decrease the contrast of their coloration (GUTHRIE, 2000). The distribution of the spots in the Lascaux depiction - probably the only finished one - prevents us from making the conclusion that the Würm Palaearctic *Crocuta crocuta spelaea* had less spots on its body. As this image shows, the cave hyaena didn't lose its spots in the harsh climatic conditions of Europe's Ice Age and probably kept the same spot frequency as the Recent African form. In fact, this is also true for the coloration pattern of Recent Palaearctic leopards. The other two rock engravings are of interest from the viewpoint of their possible interpretation as cave hyenas. The elongated neck we already discussed, together with the rounded ear and dome-shaped skull permit the possibility that the Le Portel engraving represents a cave hyaena. The image in the Le Gabillou Cave has been interpreted by A. Leroi-Gourhan as a feline-like "fantastic animal" (LEROI-GOURHAN, 1971, p. 436). In the European Upper Paleolithic rock art, zoomorphic pictograms are rather not fantastic, but taxonomically determinable or not. Fantastic animals should be referred to zoomorphic-hybrid pictograms, meaning that the image consists of parts of different animal species (STOYTCHEV, 2000, 45-46), something absent in this particular depiction. More than that - in European Upper Palaeolithic rock art there are no known images of "fantastic" animals. In some extremely rare cases there are anthropomorphic figures masked with zoomorphic-hybrid elements and interpreted as shamans or else, which are determined from the viewpoint of modern classification as anthropo-zoomorphic or zoo-anthropomorphic pictograms: e.g. painting-engraving of the Sorcerer and the rock engraving of a bison-like human figure with music-bow in Trois-Frères Cave, Ariège; similar image engraved in the Le Gabillou Cave, Dordogne; zoo-anthropomorphic pictograms of a rhinoceros or cave lions with human features in Chauvet Cave, Ardéche (TIMULA, 1995, 211-248, figs. 13, 15, 20; CHAUVET et al., 1995, p. 58, fig. 50, p. 104, fig. 84).

There are other combinations too, resulting from accumulations with partial imposition or accumulations with superimposition. They belong to accumulations on one rock surface, when two or more images impose partially or are executed on each other (STOYTCHEV, 2000, 39-40). This was done by different artists, and could have happened after a period of 2 months, 2, 20, 200 or 2000 years. In all those cases the later images changed the initial concept and semantic of the earlier ones. For these reasons it's impossible to accept S. Timula's interpretation of these images as being "composite" (TIMULA, 1995, p.234, fig. 14) or "fantastic", as is the case with an engraved realistic human portrait overlapping a bison depiction, which is an earlier addition in Trois-Frères Cave, Ariège. Typical examples in this relation are: a polychrome rock painting of a woolly mammoth (*Mammuthus primigenius*), the zoomorphic pictogram is part of a composition with a mammoth herd, later partially re-painted and representing a bison (*Bison priscus mediator*) in Font-de Gaume Cave, Dordogne; in another case a rock engraving of a woolly mammoth (*Mammuthus primigenius*) is overlapping an earlier woolly rhinoceros (*Coelodonta antiquitatis*) in La Mouthe Cave, Dordogne (BREUIL, 1985, p. 301, fig. 345).

Going back to the zoomorphic image in Le Gabillou Cave, Dordogne, which can't be "fantastic", "composite" or zoomorphic-hybrid, it most probably represents a carnivore. This could be a felid or more probably a mustelid, but the long neck and the broad muzzle create mostly the impression of the typical behavior characters of a "curious" and alarmed hyaena: we can imagine its stretched neck and typical mimics, resembling a broad "smile".

Conclusions

Until recently, it was assumed that cave hyaena was practically absent from European Palaeolithic rock art. The only exception seemed to be recently found in the Chauvet depiction. The extremely low number of preserved cave hyaena (*Crocuta crocuta spelaea*) pictograms seems to show indeed it was not depicted proportionally to the large area of distribution. Such an absence could be explained by social-psychological reasons, a taboo related to the hyaena's scavenging mode of life, etc. As we are trying to show, hyaenas are present in rock art, if scarce, and this presence makes us reject the possibility of a "taboo". It seems more probable that its lower rank in the "animal worship" hierarchy in the imaginations and beliefs of the Ice Age hunters and artists was caused by entirely mundane, everyday reasons: the species has the unpleasant exterior of a scavenger, it's not a typical and looked-for prey as artiodactyls, it's not a serious enemy or rival like cave lions and bears, and it lacks the impressiveness of the mammoth or wooly rhino. In addition, we could add that cave hyaena bones bearing traces of human activity are not among often finds from Palaeolithic sites.

Depictions from Chauvet and Lascaux provide interesting zoological data on the exterior of the species. Although today the prevailing opinion is that Late Pleistocene European cave hyaena is only a subspecies of *Crocuta crocuta* (WERDELIN & SOLOUNIAS, 1991*)*, some authors (THENIUS, 1966) still consider the fossil form a species distinct from Recent African *Crocuta crocuta* (BARYSHNIKOV, 1995). Up to now, the problem is not clarified also by the DNA investigations (Nagel et al., 2004). Whatever the taxonomical decision, it's obvious, judging from the coloration pattern and the exterior, that the two forms are very close. A morphological, and probably taxonomical closeness between the cave hyaena and Recent African *Crocuta crocuta* suggests a significant similarity in the biology of the two forms.

Acknowledgements

We are grateful to the Department of Archaeology and to the Scientific Research Development Fund of the New Bulgarian University – Sofia for the backing of our project "Prehistoric Mammals in the Rock Art of Palaearctic Region" and for the financial support.

References

ANATI E. 1993. World Rock Art. The Primordial Language. – Boll. Centro Camuno di Studi Preistorici, **27**: 7-142.

BALLESIO R. 1979. Le gisement Pleistocène Supérieur de la grotte de Jaurens a Nespouls, Corrèze, France: Les carnivores (Mammalia, Carnivora). I. Canidae et Hyaenidae. - Nov. Arch. Hist. Nat., Lyon, **17**: 25-55.

BARYSHNIKOV G. 1995. Cave hyaena, *Crocuta spelaea* (Carnivora, Hyaenidae) from the Paleolithic fauna of the Crimea. - Trudy Zool. Inst. RAN, **263**: 3-45.

BATAILLE G. 1955. La peinture préhistorique Lascaux ou la naissance de l'art. - Éditions d'Art Albert Skira, Genève, 11-151.

BREUIL H. 1985. Quatre cents siecles d'art pariétal. Éditions Max Fourny Art et Industrie, Paris, 9-417.

CHAUVET J-M., DESCHAMPS E., HILLAIRE C. 1995. La grotte Chauvet a Vallon-Pont-d'Arc. Seuil, Paris, 7-118.

CLOT A. 1980. La grotte de la carriere (Gerde, H-tes Pyrenees). Stratigraphie et Paleontologie des carnivores. These 3-ème Cycle. – Trav. Lab. Geol. Univ. P. Sabatier, Toulouse, **1**: 1-239.

DELLUC B., DELLUC G. 1989. Connaître Lascaux. Histoire et Préhistoire. Éditions sudouest, Paris, 2-64.

FOSSE F. 1995. Le rôle de l'hyène dance la formation des associations osseuses: 150 ans de controverses. Réflexions daprès les anciens textes de préhistoire et de la paléontologie du Quaternaire. - Paleo, Revue d'arhélogie préhistorique, **7**: 49-84.

GUTHRIE D. 2000. Palaeolithic art as a resource in artiodactyl paleobiology. - In: Vrba E., Schaller G. (eds), Antelopes, Deer and Relatives. Yale Univesity Press, New Haven – London, 96-127.

KAHLKE R.-D. 1999. The History of the Origin, Evolution and Dispersal of the Late Pleistocene Mammuthus - Coelodonta Faunal Complex in Eurasia (Large Mammals). Fenske Companies, Rapid City, SD, USA, 219 p.

LEROI-GOURHAN A. 1971. Préhistoire de l'art occidental. Éditions d'art Lucien Mazenod, Paris, 6-500.

MÜLLER-KARPE H. 1966. Altsteinzeit. - Band I. C.H. Beck'sche Verlagbuchhandlung, Münhen, 1-664.

NAGEL D., ROHLAND N., HOFREITER M. 2004. Phylogeography of the cave hyaena (*Crocuta crocuta spelaea*). Morphology versus genetics. In: Maul L. & R.-D. Kahlke (eds.) 18-th International Senckenberg Conference: Late Neogene and Quaternary biodiversity and evolution: Regional developments and interregional correlations. Weimar, 25-30 April, 2004. Terra Nostra, 2. Berlin. Senckenberg forschungsinst und naturmuseum, p. 190.

STOYTCHEV T. 2000. Rock Art: An Attempt for General Classification. - Annuary of Department of Archaeology - New Bulgarian University & Institute of Archaeology with Museum, **4-5**: 30-54.

THENIUS E. 1966. Zur Stammesgeschichte der Hyänen (Carnivora, Mammalia). - Z. für Säugetierkunde, **31** (4): 293-300.

TIMULA S. 1995. Figures composites de l'art paléolithique européen. - Paleo, Revue d'archéologie préhistorique, **7**: 211-248.

WERDELIN L., SOLOUNIAS N. 1996. The Evolutionary History of hyaenas in Europe and Western Asia During the Miocene. - In: Bernor R., Rietschel S. & Mittmann W. (eds). The Evolution of Western Eurasian Miocene Mammal Faunas. Columbia Univ. Press, New York, 290-306.

Received on 10.01.2003

Author's addresses:
Dr. Nikolai Spassov
National Museum of Natural History
Tsar Osvoboditel Blvd. 1
1000 Sofia, Bulgaria

Todor Stoychev
Archaeological Institute and Museum
Saborna Str. 1
1000 Sofia, Bulgaria

Върху присъствието на пещерната хиена (*Crocuta crocuta spelaea*) в къснопалеолитното скално изкуство на Европа

Николай СПАСОВ, Тодор СТОЙЧЕВ

(Р е з ю м е)

Установени и изследвани са няколко изображения на пещерна хиена (*Crocuta crocuta spelaea*) от скалното изкуство на късния палеолит в Европа. Три, от тези четири изображения, са посочени за пръв път като сигурни (от пещерата Ласко) или вероятни (от Ле Габилу и Ле Портел) изображения на пещерна хиена. Последните две скални гравюри носят редица външни белези и поведенчески особености на хиените. Две рисунки (от пещерите Шовет и Ласко) показват не само екстериора на хиените от род *Crocuta*, но и доказват наличието на петниста окраска на козината – белег на близко родство с африканската петниста хиена (*Crocuta crocuta crocuta*). Обръща се специално внимание на липсата на зооморфно-хибридни или "фантастични" изображения през късния палеолит и се търси причината за твърде слабото представяне на пещерната хиена в скалното изкуство, независимо от широкото разпространение на вида по остеологични материали.