Studies in Muslim Iconography

I. THE UNICORN

By

RICHARD ETTINGHAUSEN

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FOREWORD

During his research the author benefited from information given by many of his friends and colleagues. He is indebted to Prof. L. A. Mayer, Dr. Harold W. Glidden, and Dr. A. R. Nykl for various valuable suggestions; to Prof. Franz Rosenthal, who was always ready to put his wide knowledge of the Islamic world at the writer's disposal and who was also kind enough to read the manuscript before its publication; to Dr. Schuyler Cammann for his many comments on Chinese animal lore; and to Dr. Milton Anastos for information about classical writers and especially for his translations of pertinent texts from the books of Aelian and Timothy of Gaza. D. S. Rice kindly supplied him with the text and translation of an unpublished passage in the Ṭabaṭṭiʿ al-ḥayawān manuscripts in the India Office Library and the British Museum. Zoological questions (which often must have sounded rather queer) were given patient attention by Dr. Remington Kellogg, Director of the United States National Museum, and Dr. Herbert Friedmann, Curator of the Division of Birds in the same institution. References to other expert advice are made in the text itself.

The procuring of proper illustrations was often difficult, and special pictures had to be taken. The author herewith wishes to thank all owners and curators of miniatures, manuscripts, and art objects for their permission to have their material included in this study. He is also indebted to Leopoldo Torres Balbás, Basil Gray, Ernst Kühnel, Eustache de Lorey, D. S. Rice, J. Sauvaget, Erich F. Schmidt, and J. V. S. Wilkinson for supplying photographs from their collections, many of which would have otherwise been unobtainable. Frau Maria Sarre kindly permitted the reproduction of illustrations in her husband's publications, which was all the more gratifying since Professor Sarre was the first to describe one of the motifs here investigated. Certain material reproduced
in this volume, namely, one plate which is specifically identified by the use of captions appearing thereunder, was taken from the Japanese work Shōsōin Gyōsatsu zuroku, vol. 1 (July 1929) and vol. 7 (August 1934) published by the Imperial Household Museum, Tokyo. The Japanese interests in the United States copyright in this work (12 volumes, 1929-1940) were vested in 1949, pursuant to law. The use of these plates in the present volume is by permission of the Attorney General of the United States in the public interest under License No. JA-1358.

All illustrative material was expertly processed by B. A. Stubbs, of the Freer Gallery of Art. I am also indebted to Mrs. Bertha M. Usilton, librarian of the Freer Gallery, for checking and arranging the bibliography, and preparing the index.

Finally the author wishes to thank his colleagues at the Freer Gallery for their interest, and particularly the Director, A. G. Wenley, for his continued patience.

The transliteration of Arabic used in this investigation represents a simplified version of the system developed for the Encyclopaedia of Islam. Common names such as Muhammad, Islam, Iran, Seljuk, and the like, or adjectives derived from common names like Fatimid, Timurid, or Safavid, and others are rendered in the usual English form.

A.D. dates precede the Hijra years which are given in parentheses. When only one date is given, the Christian Era is understood.

The literature cited in this paper is listed at the end of the book. Each item is preceded by a bold-face numeral which serves as a code number in references.
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STUDIES IN MUSLIM ICONOGRAPHY

I. THE UNICORN

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[WITH 48 PLATES]

INTRODUCTION

It is generally acknowledged that Islamic art is an art of decoration; yet we have to admit that so far hardly any Muslim sources have been tapped which explain the meaning and mental associations of these decorative schemes. We do not know, for instance, what a Muslim artist had in mind when he painted an arabesque, a peacock, a hare, or the more fantastic animals such as those which are usually called griffons and harpies. Even the names of many designs are not known to Western scholars. There is usually also no explanation to be found as to why certain motifs became popular at certain times and then disappeared.

The following study tries to establish the various iconographic forms and the historical setting of the "unicorn" motif. It also intends to reconstruct the connotations most likely to be found in the mind of a medieval Muslim confronted with a picture of the animal.

The unicorn is not a frequent theme, though it occurs more often than one was hitherto inclined to believe. It is also true that there are other figurative designs which are more important. The varied iconographic uses found in a limited number of representations provided, however, exceptionally favorable conditions, first, for the identification of the motif, and then for the interpretation of the various types. Finally, the many connections of the motif with India, China, and the classical and medieval worlds made it particularly attractive.
for a more extensive investigation. As a result not only has the unicorn as such become more significant, but also it has been possible to reconstruct some of the conditions and mental processes which created the peculiar forms of the animal.

In all cases our witnesses were Muslim writers of the ninth to the seventeenth centuries, ancient Asiatic and European authors and, of course, actual representations of the animal in its various forms found in Islamic countries and dating from the tenth to the eighteenth centuries. The author readily admits that he shares the lot of all students of the lore of the unicorn, namely, that even after a diligent search, there still remains a certain amount of mystery. This applies especially to the prehistory and genesis of the motif and to its odd ramifications which, in many cases, could be presented only as hypotheses. There is always the possibility that some untapped source might throw further light on this fantastic animal. Yet, it is hoped that the main thoughts of the medieval mind on this subject can now be grasped. A few of the illustrations are admittedly of late date or of inferior artistic quality, but they are the only traceable expressions of a particular belief and are thus valuable as historical documents. Happily the majority of the illustrations offered reveal the usual beauty and finesse that we associate with Islamic art.
THE ICONOGRAPHIC PROBLEM

Among the fantastic animals which decorate objects and buildings of the Islamic Middle Ages, one occasionally finds a quadruped with a long horn on its forehead. An enameled Syrian glass vessel of the fourteenth century in the Freer Gallery of Art provides characteristic examples (pls. 1 and 2).¹ Along its outer rim, in the interstices between decorative roundels, eight fantastic animals are shown against an arabesque background. Two are “griffins,” two are “sphinxes,” one is a winged lion, and three are winged “unicorns” with feline bodies—one with a long straight horn and the two others with a shorter curved one. Two earlier examples of the monster are found in a less conspicuous place on a thirteenth-century inlaid canteen, also from Syria, in the same museum (pl. 3, upper).² Here the winged “unicorns,” which cannot be defined from a zoological point of view, are to be found together with many other fabulous and ordinary animals, and human beings as well, all set within a highly decorative inscription on the side walls of the vessel. If there are any doubts whether the animals are single-horned, or whether they are meant to have two horns which only cover each other in profile view, such doubts can be put to rest by the fact that other animals in the same frieze are actually shown with two horns.

Since the two objects in the Freer Gallery are both from Syria, it should be pointed out at once that the motif is not restricted to this particular country. Even a cursory survey shows that it is also to be found in other regions. An engraved and copper-inlaid bronze bucket of the twelfth century, from Iran, in the possession of R. Stora, of New York, shows in its central register between decorative quatrefoils a pair of the animals portrayed in a heraldic style and posture (pl. 4).

² No. 41.10. Cf., 83, fig. 3.
Here head and body are basically equine, although many bodily features derive from other animals. Yet the long straight horn puts the winged creature in the same category as the Syrian examples. And just as in the case of the glass vessel, the unicorns are grouped together in the same frieze with other fantastic animals, viz, two griffins and four winged lions.  

From the opposite end of the Muslim world come a number of carved Hispano-Moresque ivory boxes which again display the fabulous beast (pl. 5, left). In nearly all cases the winged animal with its single horn showing helical grooves is zoologically difficult to explain. It always faces another specimen of the species and is set in a decorative scheme which contains similarly stylized pairs of griffons. They are the earliest representations of the unicorn in Muslim art so far traced.

When we now turn to a fourth region, Anatolia, and look this time for the use of the design within an architectural framework, we can refer to unicorns mentioned by Friedrich Sarre, who was one of the earliest, if not the first, to have observed the motif. He described two examples found among the decorative stone sculptures of Konya which apparently came from an arched doorway (pl. 3, middle and lower). These thirteenth-century Seljuk reliefs portray a different conception inasmuch as they do not represent the animals as isolated motifs as on the glass vessel, nor as pairs as on the Persian bucket and the Spanish boxes, nor yet as a motif within an over-all pattern as in the case of the Syrian metal canteen. In both examples from Konya the winged feline "unicorn" is part of a group; it is seen pursuing another animal, in one case an antelope and in the other an elephant.

Another example of the use of the motif as part of an architectural decoration and in still another iconographic setting is to be found on a plaque from the portal of the Madrasa Muqaddamiya in Aleppo, which dates from 1168 (564).
Two of its arabesque forms which are part of the symmetrical "tree" arrangement terminate in what seem to be antelope heads which carry a straight tapering and helically grooved horn on their foreheads. The horns are obviously meant to be single ones, because the artist showed in his treatment of the ears on other heads that he was able to give a profile view in proper perspective. There is, therefore, little doubt that he would have been able to show a second horn had he wanted to do so. At this stage of the investigation it is more difficult to answer another question, namely, whether the helical grooves of the horn are just a fanciful surface decoration or are meant to be a realistic rendering of an actual horn. This is a question which will have to be taken up later on.

All the cited examples showing the whole animal are winged "unicorns." Since in many other respects they differ from each other, however, the following questions arise: are these animals different unicorns, or are they variants of one and the same animal, and what should we call them? The traditional Western term "unicorn," descriptive as it is, does not give us any clue as to what the medieval Muslim named the animal and what he had in mind when he created such a monster or what he thought when he saw it. The term "unicorn" is, in a way, even misleading, since for a person steeped in the traditions of Western civilization the word has many connotations which have been nurtured by classical, Biblical, early Christian, and medieval beliefs about this animal. The motif has to be studied and understood from the point of view of the medieval Muslim. Only then can it be properly interpreted.

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I owe the knowledge of this plaque and the photograph of it to the kindness of M. Jean Sauvaget (235, vol. 1, p. 123, footnote 399). Écochard thinks that this medallion belongs to the most beautiful Arab decoration of the twelfth century (97, p. 84, fig. 2, and pl. 6, fig. 1).
THE IDENTIFICATION OF THE ANIMAL

If one wants to establish the associations which were formed in the Muslim mind in connection with this fantastic beast, one has first to establish its Arabic and Persian names. Only after this initial step will it be possible to ransack Muslim literature for the necessary information. This will also, in due course, settle the question whether we have here in the several illustrations referred to, and in others to be adduced later on, one and the same or different animals.

Happily a number of representations of a winged quadruped with a single horn have come down to us, accompanied by texts giving specific names. It will suffice to name three for a proper identification. The earliest so far found is in a zoological manuscript compiled from the works of Aristotle and of 'Ubaid Allâh b. Jibril b. Bukhtishû (Bokhtyeshû'), the Naʿt al-ḥayawān wa-manāš'ihu in the British Museum, probably written and painted in Baghdad in the first half of the thirteenth century.¹ In the section on wild quadrupeds one finds an animal which, although it does not have the feline character of the examples on the Freer glass bowl and the Konya reliefs, or the more equine character of those on the Stora bucket, nevertheless reveals the basic and distinguishing features of the unicorn, the horn on the forehead and the wings (pl. 7). In this manuscript this strange antelopelike animal is called كردن kardunn, a variant of the more common form كراکن karkadann, or كراکن karkaddan, which is the usual term in Arabic for rhinoceros.² Another "unicorn"—

¹ OR. 2784, see 56, pp. 531-533, No. 778. For a bibliography of publications on the miniatures in this manuscript see 126, p. 14, No. 33, and 63, p. 155, No. 33. See also 62, pp. 34-35, and figs. 34-36.

² There are many more names for the animal. First there are the variants of the usual name, viz., كراکن karkanda (98, p. 109, footnote; Ibrâhîm b. Wasîf-Shâh, in 98, vol. 1, p. 160, footnote 1; and 77, vol. 2, p. 327), and كراکن karkadân (5, fol. 14b, see pl. 10, Persian caption; and al-Idrîsî in 98, vol. 1, p. 180; كراکن kazzakan, in the Cairo
this time with a feline body—is to be found on a page of the Persian Anthology entitled Mu‘nis al-ahrār fi daqa‘iq al-aslāhār, dated 1341 (741), in the Cleveland Museum of Art.\(^3\) edition of Aīfl laillā wa-laila, see 23, notes to vol. 3, p. 130, is obviously a textual garble). To this group belong also the usual Persian designations: karkadan, kargadan, and karg. karkān, that is, without tash-did over the nūn, is found also in the Arabic text of the “Sarre al-Qazwīnī” manuscript. Then there are other names, some translations or loan words from other languages and some probably used only in specific regions. Thus al-Jāḥiẓ and others quoting him speak of al-bimār al-hindi, “the Indian asan,” hereby using a term of Aristotle (145, vol. 7, p. 40; 146, vol. 7, p. 123; 6, fol. 134b; 7, fol. 88b; 201, vol. 7, p. 315). The term al-qarnī al-af al-qarnî al-anf, “the horny on the nose” (6, fol. 134b; 7, fol. 88b) is found only in Marvāzī, an author who quotes more classical information than any other Muslim writer on the subject; it is, therefore, obviously an Arabic rendition of the Greek μονόκεφαλος. Al-bishān (al-mu‘lam) (marked or spotted) bishān (and various other misread versions of this term) come from the Sanskrit (see p. 94, footnote 91). Gonda (45, p. 228), has the same origin.

Khartīt occurs in al-Akfānī (277, p. 354); while the form or form of Khartīt or Khartīt is nowadays used in Egypt and the Sudan (see p. 130). Al-Birūnī and Marvāzī state also that the African Negroes use the term impilā. This Marvāzī explains as bī Fri jāmūs “buffalo cow” (6, fol. 134b). One wonders about a possible connection with the name of a certain African antelope, the impala, which became confused with the rhinoceros. This antelope is called impala and nipala by the Barots and Ngamiland natives, impāra by the Ovadíriko, and umpara by the Makuba; the Angolan or black-faced impala is called ompála or umbára by the Ovambo (243, vol. 2, pp. 550 and 557).

There are also certain names which do not seem to occur in the classical literature of Islam, viz, abū qarn (father of the horn) (53, vol. 12, p. 607), umm qarn (mother of the horn), and ‘anazza—all used in the Sudan (174, p. 203). Other names are zibrā, mirmis, and hirmis. The form waḥīd al-qarn (unicorn), is obviously derived from Greek μονόκεφαλος (37, p. 20; 174, p. 203).

Finally there are certain names which are occasionally given to the rhinoceros without actually designating the same animal. They are Harīš, and Sīnād. (A short survey giving most of the names is in 174, p. 203.)

Throughout this investigation the form karkadan will be used with the exception of those cases in which a specific form in an Oriental text has to be transliterated.

\(^3\) This miniature is still unpublished, but the manuscript is well known (126, p. 19, No. 48; 63, p. 155, No. 48).
In a ribbonlike composition four animals are shown, one in front of the other (pl. 8). The caption in the left-hand corner of the preceding line describes them as vulture, simurgh (the fabulous bird), elephant, and karkadan. Our third example is in a miniature of the “De-motte Shāh-nāmaḥ” of about 1320 which shows a scene usually entitled “Iskandar Fights the Ḥabash (i.e., Ethiopian) monster” (pl. 9). This designation is correct; but while it stresses the country where the animal occurs, the Persian caption within the miniature, “The Fight of Iskandar with the Karkadan,” states more explicitly what kind of animal Alexander the Great is slaying. All three quoted examples show differences in the body structure of the beast, although each has the long single horn on the forehead and the wings emanating from the sides of the body. It seems therefore certain that the various winged creatures with one horn are representations of the karkadann or rhinoceros quite irrespective of whether the represented animal has the body of a lion, horse, antelope or any other quadruped.

Now that the winged “unicorn” has been established as being the karkadann, we can look for this animal in the illustrated scientific manuscripts such as al-Qazwini’s ‘Ajā’ib al-makhlūqāt or the various works connected with Ibn Bukhtishū’. They will naturally provide us with additional

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4 126, pp. 23-24, No. 64; 63, pp. 158-160, No. 64. The quoted caption is after 54, p. 106, No. 33.

5 The texts dealing with the karkadann in the Naʿt al-ḥayawān wa-manāṣīṣuḥu in the British Museum, OR. 2784, the Manāṣiʿ al-ḥayawān in the Bibliothèque Nationale, Arab 2782, and the Taḥāniʿ al-ḥayawān wa-khawāṣṣuḥu in the Princeton University Library, No. 203 B (Garrett ms. Ar. 1065) are, disregarding certain minor variations, identical. According to the Paris manuscript these extracts are taken from a larger work entitled كتاب الخواص مjährرب من المنافع Kitāb al-khawāṣṣ mujarrīb al-manāṣiʿ (203, p. 507, No. 2782). In general, the descriptions of the animals are said to be taken from a work called مانع الحيوان Naʿt al-ḥayawān, which is attributed to Aristotle, while the discussions of their medicinal value come from the Manāṣiʿ al-ḥayawān of Ibn Bukhtishū’. Both were put together by an anonymous compiler (56, p. 532). A three-line postscript in a, fol. 198b, states, however, that the karkadann does not occur in the Kitāb al-naʿt and that it is mentioned only
examples of this animal, since these manuscripts have been illustrated for many centuries. The earliest karkadann in a scientific manuscript found so far is the one in the British Museum referred to above (pl. 7). The representation in the Persian Manāfī' manuscript of The Pierpont Morgan Library is only a few decades later and was painted in Marāgha in northwest Iran at the very end of the thirteenth century (pl. 10). The most striking feature of this animal when compared with the representations so far discussed is not so much its bovine appearance, but rather the fact that it lacks the wings. Nevertheless, it is called a karkadan in the caption and illustrates a chapter enumerating all the traditional features of the animal. We can make the same observation for nearly all the other illustrations of the karkadann in scientific manuscripts from this period on. It therefore becomes obvious that the wings—in contrast to the horn—are not an essential feature of the karkadann. But we shall have more to say about the wings later on.

Miniatures illustrating the al-Qazwīnī text are to be found for instance in the "Sarre manuscript" of the second half of the fourteenth century (pl. 13, lower), a derivative copy of this manuscript in the A. Chester Beatty collection in London (probably of the fifteenth century), two other fifteenth-century manuscripts—the earlier one in the Berlin Museum (pl. 13, upper left), and the other from later in the century in the Kevorkian collection in New York (pl. 13, upper right)—a

in the work of Ibn Bukhtishū. The Arabic text in the London, Paris, and Princeton manuscripts is totally different from the Persian Manāfī'-i hayawān (Pierpont Morgan Library, ms. M.500), which obviously goes back to another Arabic model from which it was translated about 1295 (695). In this study the two texts are referred to as Ibn Bukhtishū and Manāfī'-i hayawān (or, for short, Manāfī').

6 126, p. 22, No. 57; 63, pp. 156-157, No. 57. Laufer was the first to identify the animal by reading the Persian caption. Anet before him had called it a "horned gnu" (165, pp. 85-89).
7 230, p. 38, No. 295.
8 Ma. P.127, unpublished.
9 157, p. 69, fol. 272a (unpublished miniature). Kühlau dates the manuscript in the late fourteenth century which, I think, may be slightly too early.
10 Unpublished.
manuscript dated 1545 (952) in the Beatty collection (pl. 14, upper),\textsuperscript{11} another of 1570 (978) in the Harvard College Library,\textsuperscript{12} then what seems to be a seventeenth-century adapta-
tion of a fifteenth-century manuscript in the Princeton Uni-
versity Library (pl. 15),\textsuperscript{13} a Turkish translation of the text, 
written in 1709 (1121) in the Walters Art Gallery,\textsuperscript{14} and 
finally, an Indian copy of 1789 (corresponding to the thirty-
first year of the reign of Shāh ʿĀlam) in the Greer Gallery 
of Art (pl. 14, lower).\textsuperscript{15} Most of these seem to be different 
from each other. Only a few show, at first glance, that they 
follow the same iconographic tradition; for instance, the 
British Museum and the Kevorkian examples (pl. 7 and pl. 13, 
upper right) show an antelope-like animal, but only the uni-
corn in the older manuscript is winged. If further proof were 
necessary to show the lack of uniformity in the conception of 
the karkadann, it could be demonstrated by the different 
appearances of the same animal in a single manuscript. The al-
Qazwini in the Princeton University Library shows the ani-
mal by itself, and then again in its eastern habitat together 
with other creatures (pl. 15, right and left). No uninitiated 
person would ever think that the artist meant to illustrate 
one and the same animal; nor is this a unique case of the 
dual personality of the karkadann, because the al-Qazwini 
manuscript in the Harvard College Library shows the same 
phenomenon. However, these divergencies do not seem to 
have perturbed the painters or the reading public.

How can this iconographic variety be explained?

The first step in finding an answer to this question is to con-

template the medieval texts which give the various conceptions of 
the body structure of a karkadann. They also help us to

\textsuperscript{11} 43, pp. 139-140, No. 176, pls. 96-97; 115, p. 60, No. 19.
\textsuperscript{12} Unpublished.
\textsuperscript{13} 106, p. 31, No. 65, states that this manuscript was copied in 1460 (865) 
by ʿAbd Allāh b. Ali Bey Damāvandi. Since the miniatures seem to be later 
copies of fifteenth-century originals, the manuscript was either copied in toto 
in the seventeenth (or even eighteenth) century or the miniatures are later 
additions to the fifteenth-century text.
\textsuperscript{14} Ms. W.659, unpublished.
\textsuperscript{15} No. 07.625, unpublished.
understand why the animal was represented in Muslim art at all. The following quoted and paraphrased references are culled from the published and unpublished writings of a large number of writers of the ninth to seventeenth centuries, comprising littérateurs, historians, travelers, cosmographers, pharmacologists, poets, merchants, and hunters. Since it is the aim of this paper to explain a figural motif in Muslim art and not to write a monograph on the rhinoceros, only the more important passages which explain the outer form and the meaning of this motif have been used while other information is usually disregarded even though it may have literary or folkloristic significance. For similar reasons discussions of an etymological nature have also been left out. It is certain that the list of authors referred to could be further enlarged, yet there seems little doubt that the most common conceptions of the "unicorn" within the Muslim world have been established here and that they suffice to explain the paramount features of the motif.

18 Following is a list of the most important authors and anonymous books most frequently quoted in this paper. If the year of completion of a text referred to is known, it is listed; otherwise the year during which the author died is given, with the Hijra year in parentheses: Ibn Khordâdhbeh, ca. 846 (232); Akhbâr al-Šin wa'l-Hind (formerly attributed to Sulaimân, the merchant), 851 (237); al-Jâhiz, died 869 (255); Ibn Faḍlân, ca. 923 (310); al-Masʿūdî, 956 (345); Hudûd al-ʿĀlam, 983 (373); al-Nadîm, 987 (377); Abû Ḥayyân al-Tawhîdî, died after 1010 (400); al-Birûnî, died 1048 (440); Ubâid Allâh ibn Jibrîl ibn Bukhtishû, died after 1053 (450); Ibn al-Balkhî, beginning twelfth century (seventh century); Marvazi, ca. 1120 (617); Abû Ḥâmid al-Gharnâṣî, 1169 (565); al-Qazwînî, died 1283 (682); Manâfî-i Ḥayawân, before 1295 (695); al-Dimâšqî, died 1327 (727); al-Nuwasîrî died 1332 (732); Ḥâmad Allâh al-Muṣṭawfî al-Qazwînî, 1339 (740); Ibn ʿAbî Tâtâ, before 1356 (757); al-Dâmirî, 1371 (773); Ibn al-Wârdî, ca. 1446 (850); Bâbur, died 1530 (937); Abu ʿl-Faḍl ʿAllâmî, died 1602 (1001); and the Alif laila wa-laila.

If a passage on the rhinoceros occurs only in one place in the Arabic or Persian source, it is quoted only the first time it occurs in the following text.
THE PHYSICAL APPEARANCE OF THE KARKADANN IN MUSLIM TEXTS AND ILLUSTRATIONS

Of all medieval authors al-Birûnî alone in his book on India gives a fairly accurate description of the rhinoceros: "It is of the build of a buffalo, has a black, scaly skin, a dewlap hanging down under the chin. It has three yellow hooves on each foot, the biggest one forward, the others on both sides. The tail is not long. The eyes lie low, farther down the cheek than is the case with all other animals. On the top of the nose there is a single horn which is bent upwards..." 1

The correct position of the horn and the unique observation about the hoofs indicate that this description is based on good observation. Al-Birûnî was not, however, the only Muslim writer who had a chance to watch the animal at close range. Ibn Baṭṭūṭa saw a rhinoceros in its Indian habitat on four different occasions. 2 What struck the Moroccan traveler in particular and induced him to speak of it in two places was the excessive size of the coarse head. He believed it to be several times larger than that of the elephant, although he

1 45, pp. 229-252; 44, vol. 1, pp. 203-204. Marvazi has another version of al-Birûnî’s account which is more than twice as long and thus even more specific (6, fol. 155a; 7, fol. 89a-b). Since certain passages are not quite clear, we are quoting it here only in the footnote: "It is of the build of the buffalo, but taller and short in the leg. The skin is smooth, not hairy, but scaly, made of scales raised from the epidermis and the chest (?) with dewlaps on both cheeks. The haunches (of the animal) are big and the head flat-nosed and receding. The horn is on the tip of the nose, conical in shape, and bent backward toward the head. It is longer than a span. In the center of the upper lip, under the horn, it has something like the additional “finger” on an elephant’s trunk. The lower jaw is like that of the bull; it has two blunt canines inside the mouth. The nose resembles most closely the noses of beasts of burden. The ears protrude on both sides, like the ears of the donkey. Its eyes are almond-shaped (?) and set lower than is usual. Its tail is short, thick at the root then widening toward the end. Testes and penis are like those of the bull. Its hoofs are fleshy and resemble the feet of elephants; each has three toenails, white with a yellow tinge; the biggest in front, then two in a half-circle to the right and left."

describes the rhinoceros correctly as being the smaller of the two animals. In this instance it is possible to trace the source of the misconception to which Ibn Batūta himself refers, i.e., to a popular saying “Karkadann—head without body,” (الكركدان رأس بلا بدن). The reports of this famous traveler thus show that even repeated encounters with the animal did not necessarily produce a description based on observation. Preconceived ideas prevented the eye from seeing reality.

In comparison with al-Bīrūnī nearly all other authors had only a vague idea of the karkadann. This lack of substance led, of course, more and more to the invention of imaginary traits. Al-Jāḥiẓ in the ninth century is still in the realm of reality when he classes it with the largest animals such as the elephant and the buffalo; but at the time of Abū Ḥāmid al-Gharnāṭi in the twelfth century, the rhinoceros has become about 100 cubits long.

The karkadann is usually defined by comparing it with other animals. A typical description—in this case based on accounts of the Volga Bulgars—is given about 922 by Ibn Faḍlān: “The animal is smaller than the camel and bigger than the bull. Its head is that of a camel, its tail that of a bull and its body that of a mule. Its feet are like the hoofs of the bull. On the middle of its head it has a single, thick and round horn which becomes thinner toward the tip . . . ”

When one examines the various comparisons, frequent analogies with certain animals become apparent. The most common statement is that the karkadann resembles a buffalo or a bovine animal, although it is in most cases believed to be bigger, once even larger than several buffaloes put together. Al-Damiri alone at one point gives the size as being smaller than that of a buffalo. The Manāfi`-i ḥayavān mentions, too, that

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8 145, vol. 7, p. 29.
499, Arabic text p. 109, translation p. 266. This measurement is repeated by al-Damiri, who speaks of “one hundred cubits and even more than that” (77, vol. 2, p. 327).
5 134, Arabic text p. 33, translation p. 76.
6 5, fol. 158, line 1, Abu `l-Faḍl Ḥallām states that the rhinoceros is twice the size of a buffalo (24, vol. 3, p. 120), while Bābur gives the figure as approximately three times the size (22, vol. 2, p. 489).
the tail and hoofs of the karkadann are similar to those of the buffalo.\textsuperscript{7} The 'Ajā' ib al-makhlūqāt manuscript in the Walters Art Gallery\textsuperscript{8} likewise maintains that not only the parts of the body just referred to, but also the horn, are those of a bull. According to the text of al-Qazwini edited by Wüstenfeld,\textsuperscript{9} it has the constitution of a bull, only more powerful, while Mustawfi thinks that it has the form of a cow.\textsuperscript{10} From these recurring comparative descriptions, it seems natural that many representations show a bovine animal resembling a buffalo or ox. Examples of this iconographic type are to be found in the Morgan Manāši and the al-Qazwini manuscripts of the Sarre and Beatty collections and of the Princeton University and Harvard College Libraries (pls. 10; 13, lower; and 15, right). The Morgan Manāši manuscript, like many later zoological manuscripts, presents a welcome opportunity for comparing the miniatures of the karkadann and the domestic ox (3\textsuperscript{a}) which, as usual in Persian miniatures, is represented as a zebu with its characteristic hump and large dewlap (pl. 11). If one disregards such features as the curved horn on the forehead, the different form of the muzzle and the zebralike stripes, the karkadann appears as a bigger and fiercer cousin of the domestic cow. The reason for the difference between the two will become obvious later on when it will be shown that there are also other factors besides the descriptive Muslim texts which have to be considered when one wants to explain the special character of an iconographic type.

Of special interest is a miniature in the Beatty al-Qazwini manuscript of 1545 (pl. 14, upper). In spite of the bovine look, especially of its head and the hump on the back, the karkadann also has certain elephantine features. It may be thought that this is due to the ineptitude of the artist in por-

\textsuperscript{7} 5, fol. 13, line 8.
\textsuperscript{8} 1, fol. 188. The title of this work is the same as that of the famous work by al-Qazwini, but the text is quite different from the edition of Wüstenfeld. The manuscript was written in the late sixteenth or the seventeenth century for one Shams al-din Muhammad b. Maḥmūd b. ʿAbd al-Salmānī al-Ṭūsī.
\textsuperscript{9} 217, vol. 1, p. 402.
\textsuperscript{10} 192, Persian text p. 35, translation p. 25.
traying a rhinoceros, yet the medieval texts reveal certain clues as to why the animal was given this form.\textsuperscript{11} While Ibn Khordadhbeh states only that the animal is smaller than an elephant and larger than a buffalo,\textsuperscript{12} other authors go beyond a mere comparison. Al-Qazwini, whose text the miniature illustrates, says definitely that the karkadann has the body of an elephant, and according to al-Damiri it is a cross between a horse and an elephant.\textsuperscript{13} Further relationship between the karkadann and elephant is brought about by the myth of the jointless legs,\textsuperscript{14} a feature sometimes associated with the elephant, other times with the karkadann.\textsuperscript{15} Still another connection between the two animals is provided by the accounts of the strange gestation of the female karkadann. As far as we know, it was al-Jāḥiẓ who introduced the story into Muslim literature, though not without some misgivings as to its veracity.\textsuperscript{16} According to him, shortly before the time of birth the karkadann foetus sticks out its head from inside its

\textsuperscript{11} Another manuscript that shows the animal with elephantine features, such as elephant legs and tail, is the late al-Qazwini manuscript of 1789 in the Freer Gallery of Art (10, fol. 455a); here the rhinoceros also wears a saddlecloth as does the tame riding elephant (pl. 14, lower; see also p. 48, footnote 6 of this study).

\textsuperscript{12} 98, vol. 1, p. 25. This statement is, for instance, found also in al-Idrīsī (98, vol. 1, p. 180).

\textsuperscript{13} This is in line with the medieval Muslim concept that certain animals were actually hybrids of well-known creatures. “Man allying himself with the panther, the hyena, and other beasts has begotten the monkey, the nāmūs, and other creatures which resemble him. And thus it is that the mingling of pigs and buffaloes has produced the elephant, of dogs and goats, the wild boar…” (65, p. 34). Al-Jāḥiẓ and al-Qazwini tell us that the giraffe is believed to be the hybrid of a wild she-camel, a wild cow, and a male hyena (146, vol. 1, pp. 142-143, 217, vol. 1, p. 383), or of the camel and the panther, according to al-Masʿūdī (184, vol. 3, p. 3).

\textsuperscript{14} The Akhūd Narr al-Sīn waʾl-Hind (17, p. 14; see also 18, vol. 1, p. 29; vol. 2, p. 1’1) states: “. . . the karkadann has no joints, neither at the knees, nor at the feet, since it is just one piece of flesh from the foot to the armpit.” Al-Masʿūdī has another angle on the subject: “. . . most of its bones seem to be grown together without joints in the legs, so that it cannot kneel or sleep lying down, but has to lean between trees in the middle of the jungle when it wants to sleep” (184, vol. 2, pp. 385-386).

\textsuperscript{15} See the discussion of this relationship on pp. 99-100 of this study.

\textsuperscript{16} 145, vol. 7, pp. 40-41; see also pp. 143 f. of this study. The story is also given by Masʿūdī, al-Gharnāṭī (99, p. 101, translation p. 267), al-Damiri (twice), and al-Iṣḥāqī (99, p. 267, n. 1).
mother's womb and eats branches of trees. When it is satisfied, it pulls its head back into its usual place. In spite of certain doubts raised against it, this belief continued throughout the Middle Ages. There are, however, certain authors like al-Qazwini and al-Damiri who transfer the story of the karkadann foetus to another animal called sinād (سعاد) which, to quote al-Qazwini, "is of the same description as the elephant, only smaller in body." This elephant-like sinād seems to have given further impetus to the mental associations between karkadann and elephant. No miniatures have so far been found which show the karkadann with its enterprising foetus, but there is a miniature of the sinād in the al-Qazwini manuscript which formerly belonged to Professor Sarre, and others much like it are in the collections of the Berlin Museum and of Mr. Kevorkian (pl. 16, lower). All show the dam with its young one partly outside the womb and looking for supplementary food, and in each case the sinād looks exactly like an elephant. There is, however, proof that the Muslim mind retained a connection between the sinād and the karkadann. A crude Turkish al-Qazwini manuscript of the year 1709 (1121) in the Walters Art Gallery shows, as illustration to the chapter on the sinād, an elephant with its hungry foetus well visible in the back. The mother animal shows a curved horn on its forehead, although the al-Qazwini text does not mention this feature; there seems, therefore, little doubt that it was influenced by the concept of the horn of the karkadann. All these weird associations of the karkadann with the elephant give a clue as to why a Muslim artist who had never seen a rhinoceros could have been induced to give it elephantine features.

References to a resemblance of the karkadann to the horse are rare in earlier texts, but the belief can be traced through-

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17 *ibid.*, vol. 1, pp. 387-388. See also pp. 62 f. and 244 of this study.

18 This is the vocalization of the "Sarre manuscript" of the al-Qazwini text. The same spelling is also given in 191, translation p. 38, and al-Damiri (78, vol. 2, part 2, p. 211). The Turkish al-Qazwini manuscript of 1709 (1121) of the Walters Art Gallery (9, fol. 104a) has ساند. sannd.

19 g., fol. 104a.
out Muslim literature. Marvazi compares its size to that of a horse, while the ‘Ajā’ib al-makhlūqāt manuscript in the Walters Art Gallery mentions that the karkadann has an equine neck.²⁰ Al-Damīrī speaks of the animal as a hybrid of elephant and horse, an idea which goes back at least to the first half of the twelfth century, since such a pedigree plays a decisive role in al-Zamakhshari’s discussion about the lawfulness of the karkadann’s meat.²¹ The most pertinent statement comes, however, from the Mughal emperor Bābur, a man who had seen many rhinoceroses in his life; yet according to him “the rhinoceros resembles the horse more than it does any other animal,” a theory which he backs up with a number of anatomical features which are said to be common to both animals.²² Abu ’l-Faḍl ‘Allāmi, another Indian writer, makes the imaginative remark that the rhinoceros “much resembles a horse in armor”; however, it seems that these two Indian authors are only rationalizing a popular myth.²³ As in the case of other comparisons this belief in a resemblance to the horse had its iconographic repercussions and we can thus account for some of the horselike features in certain representations (pls. 18, upper; 19; and 20).

The affinity of the karkadann to the lion, or at least to parts of its body, can be explained by some passages in the Shāh-nāmah which speak of the lion claws of the karg گر (which is one of the Persian words for rhinoceros).²⁴ Of a later date is the statement of the ‘Ajā’ib al-makhlūqāt in the Walters Art Gallery that the karkadann has the head and feet of a lion. This characterization fits the pictures on the enamel glass bowl in the Freer Gallery (pls. 1 and 2) and of the monster killed by Iskandar in the Demotte Shāh-nāmah (pl. 9).²⁵ Claws of a lion are also attributed by al-Jawhari

²⁰ 1, fol. 188a.
²³ 24, vol. 3, p. 120.
²⁵ Another example of a lion-bodied unicorn is to be found among the stone sculptures of Kubachi in Daghestan. One of these twelfth- to thirteenth-century reliefs shows two heraldically rendered lion-unicorns standing on their hind
to the ḥarishُ (حرشُ), an animal which this author, Ibn Bukhtishū, and al-Damiri identify with the karkadann. Other writers such as al-Tawḥīdī, al-Qazwīnī, al-Mustawfī, and the Manāfī differentiate, however, between the karkadann and the ḥarish, which they regard as "a small animal the size of a kid." This is obviously another tradition which will have to be dealt with in the discussion of the ḥarish later on in this paper.

Still another iconographic type is the karkadann in the shape of an antelope or stag such as we find in the British Museum Ibn Bukhtishū and the Kevorkian al-Qazwīnī manuscripts (pls. 7 and 13, upper right). Its origin is rather complex. First it can be said that the shape suggests itself to the imaginative mind on account of the analogy with either antelopes, the usual horned animals, or with stags, the bearers of antlers. This is corroborated by two passages in the Shāhnāmah in which Firdawṣī speaks of a terrorizing monster, obviously a rhinoceros, which has a horn like the antler of a stag. Another lead is the text of Ibn Bukhtishū which declares the karkadann and the kidlike ḥarish to be identical. How this kidlike creature was then changed into an antelope can be explained only after more material has been presented in this paper (see pp. 96 f. of this study). But it seems obvious

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that the confusion with the ḥārīṣ first found in Ibn Bukhtishū’s text was a decisive factor and it is therefore not surprising that the first instance of an antelope-like karkadann occurs in a manuscript of this author. Once the antelope type was created by Firdawsi, Ibn Bukhtishū, and the additional outside influence about which we have to speak later on, it was then transferred to al-Qazwini manuscripts, such as the one in the Kevorkian collection, although this particular author does not confuse the karkadann with the imaginary ḥārīṣ.

A unique iconographic variety, and a very strange one at that, is the animal in the Berlin al-Qazwini manuscript which, in spite of two horns and four excrescences on its back, is captioned as karkadann (pl. 13, upper left). The pertinent texts, whether they are in al-Qazwini himself or in other authors, fail to provide the clue for this particular shape. It can however be explained as a substitute for another animal with which it was confused since it shared certain features.

In his book on India, al-Birūnī tells us of a strange two-horned monster, larger than a rhinoceros and of the shape of a buffalo, called sharav (شراح). It has four feet and in addi-

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80 45, pp. 218 and 251; 44, vol. 1, p. 203. Al-Birūnī’s passage is quoted by ‘Awfī, who died in the second quarter of the thirteenth century (93, vol. 2, pp. 203-204; and 198, pp. 37 and 257). Al-Birūnī and ‘Awfī in turn are quoted by al-Mustawfī (193, p. 43, translation, pp. 30-31) where for reasons which we shall discuss on pp. 33 f. the animal is called ṭukh رمح. This shows that the Indian lore about the animal is to be found in Muslim literature from the eleventh till at least the middle of the fourteenth century, which explains its occurrence in an early fifteenth-century manuscript.

There seems to be no consistent rule as to how the name شراح should be pronounced, since it may never have been more than a bookish name in al-Birūnī and his followers. Reinaud rendered it as “scharau.” This form can also be read sharav which is closer to Sanskrit śarabha and which Reinaud recognized as the source for the Arabic word (45, p. 251). Sachau’s transliteration of sharava seems—as far as the last vowel is concerned—hardly possible in Arabic. Muhammad Niẓāmū ’d-din used the forms sharw and shērū, while Elliot gives sharū. Although it would be more correct to use shaw through this study, I decided on sharav for the sake of readability and because it is closest to the Sanskrit. According to the Sanskrit dictionary the śarabha is a kind of deer, or, in later times, a fabulous animal supposed to have eight legs and to inhabit snowy mountains; it is stronger than the lion and the elephant (188, p. 1057, col. B). This eight-legged monster occurs in the Mahābhārata (127, p. 78).
tion, on its back, something like four feet directed upward. The four excrescences on its back and the two horns of the animal in the Berlin manuscript demonstrate that this karkadann is actually a sharav. What has led to this substitution will become obvious when more of the lore of the karkadann has been investigated.

All reports pay special attention to the horn of the karkadann. Nearly all of them go back to confused hearsay or the wrong interpretation of actual horns. Sometimes the accounts take the medieval form of quoting an old authority. Al-Jāḥīz, for instance, refers to Aristotle who “assumed that the animal had one horn in the middle of its forehead.” 81 Another early account, that of the Ḩākbār al-šīn wa 'l-Hind reports too that the animal’s single horn was on its forehead. Ibn Bukhtīshū’, Asadi, Marvazi, and the Manāfī’ again speak of a single horn on the forehead of the animal,82 while other authors avoid giving specific information on this point. As we have pointed out above (p. 12), al-Bīrūnī was the only medieval writer to describe its correct position.

Dimensions, form, and character of the horn also come up for some discussion. Al-Jāḥīz thought that it was harder than the tusk of the elephant, thicker than a cubit, and its length corresponding to its thickness.83 Ibn Bukhtīshū’ gives the dimensions as 1 cubit long and 2 closed-hands thick. The Manāfī’ says that it is 1 cubit long and adds that it is stronger than the tusk of the elephant, more pointed and harder, all of which makes the blow very effective. There is another vivid statement in al-Idrisī, who tells us that the long horn is so thick that one cannot encircle it with two hands.84 In some

81 145, vol. 7, pp. 40 and 42 (here without reference to Aristotle). He adds also as a further authoritative support: “On this fact (that the karkadann has one horn in the middle of its forehead) the Indians, the old and the young ones, agree.”

82 There is an extinct Siberian rhinoceros that had a single horn on its forehead (170, p. 26), but it seems most unlikely that this fossil animal inspired the myth.


84 98, vol. 1, p. 181. This is an exaggeration of the earlier statement by Ibn Khordāḏbeh that the horn was two palms thick (98, vol. 1, p. 29).
editions of the Arabian Nights one can see popular imagination at work because in certain manuscripts the copyist was not satisfied with the usual 1 cubit and the measurement is therefore enlarged ten times. Al-Damiri does not give the exact measurements but concludes that on account of the weight of the horn, the karkadann is not able to raise its head. A rather unusual—at first sight even fantastic—feature is first mentioned by al-Qazwini: "... on its horn is a branch or protuberance (شعبة, shu’ba) whose curve runs counter to the horn and this protuberance possesses special properties. The sign of its genuineness is that in it one sees the figure of a horseman. One finds this protuberance only in the possession of the kings of India." Al-Mustawfi, too, speaks of this branch or protuberance which, according to him, is one cubit (گر) long and has knots (عقد "عوقد). Al-Damiri repeats the text of al-Qazwini nearly word for word and he places the branch on the tip of the horn. The possible meaning of this curious development of the horn deserves special discussion which will have to be reserved for a later section.

Only a few writers make any reference to the curve in the horn. Al-Biruni is the first to observe it, being followed by the Manafi. Al-Qazwini even defines the character of the curve. It is strange that Ibn Batuta, otherwise such an astute observer, does not mention this characteristic feature, just as he was unable to realize the peculiar position of the horn. Yet he must have seen it at close range when, in two instances, the severed head of the animal was brought back by hunters. His only observation is that the karkadann "has between the eyes a single horn which is about three cubits long and about one span thick." This shows how difficult it was

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33 Al-Qazwini mentions in a story the knot of the horn عقدة قرن الكركدن "عقدة قرن الكركدن, without specifically stating from what part of the horn it comes.

34 "In it is a curve which is convex towards its face and concave towards its back."

to get a true picture of the animal and how much time had
to elapse before a realistic representation appeared.

The two-horned varieties of the karkadann, the one from
Africa and the other from Sumatra, are only occasionally
mentioned.\textsuperscript{39} Al-Gharnāṭi, with his predilection for the won-
derful,\textsuperscript{40} goes so far as to speak of a three-horned karkadann
which, according to him, has “one horn between its eyes and
two above the ears.” \textsuperscript{41}

The rare reference to a curve in the horn is apparently one
of the explanations why only a few illustrations show it. The
outstanding example is the miniature in the Morgan \textit{Manāfi']
where the horn is placed on the forehead of the animal and
bent forward (pl. 10). There is an obvious relationship be-
tween this painting and the accompanying text, which states
that the horn is on the forehead, crooked, and near the eye.
This representation is quite different from that of the Kevor-
kian manuscript (pl. 13, upper right) which provides the ani-
mal with a long, straight horn in spite of the curvature men-
tioned in the text and which is at least slightly indicated in
the Sarre manuscript (pl. 13, lower). The elephantine karka-
dann featured in the Beatty al-Qazwini manuscript (pl. 14,
upper) is the only one to show the feature referred to as the
branch or protuberance which, following the more explicit text
of al-Dāmīrī, is said to be on the tip of the horn. The little
excrescences on the side are probably the knots of the horn
of which al-Qazwini and al-Mustawfi speak.

Only in the early sixteenth century did artists become aware
of the fact that the horn was actually placed on the nose of

\textsuperscript{39} Ibn al-Faqīh writing ca. 903 (290) (165, p. 90, footnote 2). Al-Birūnī and
al-Nuwairī mention the two-horned African species and al-Dimāshqī that of
Sumatra and Java (85, p. 220).

\textsuperscript{40} Al-Gharnāṭi “zeigt sich für das Wunderbare fast ausschliesslich empfäng-
lieh” (190, p. 71; see also 152, p. 63).

\textsuperscript{41} This report is repeated by al-Dāmīrī without naming the source. Hub-
back (128, p. 3) states: “I have seen two heads with what were almost
third horns.” He refers to the Asiatic two-horned or Sumatran rhinoceros
occurring in British Malaya, Borneo, Sumatra, Burma, Siam, and Indo-China.
There are also records of three-horned black rhinoceroses in Africa (35, p. 302,
footnote; 269, p. 468; 243, p. 423).
the karkadann. However, even after this knowledge had been gained, the animal, as such, was still often misunderstood. Thus a miniature in the al-Qazwini of the Princeton University Library, giving a scene on an island in the China Sea where the karkadann is said to live, shows an animal which looks more like a calf although it has a horn on its nose (pl. 15, left). The same manuscript shows a different picture of the karkadann in the chapter dealing with the animal (pl. 15, right). Here a curved white horn is correctly placed on the nose of the bovine beast which retains, however, the traditional long, straight horn on the forehead. It even shows the spiral grooves which indicate that it is the tusk of the narwhal. It is known that such teeth reached the Near East and—as we shall see later on—that they had a certain influence on the representations of the rhinoceros horn. It seems therefore unnecessary to assume that the Persian painter imitated a picture of a Western unicorn. Had he done so, the karkadann would also have had an equine form.

The Princeton miniature also illustrates the one and only romantic feature of the karkadann. If one looks more carefully at the miniature, one notices that the head of the animal is neither unconcernedly lowered nor defiantly raised; it rather expresses rapt and intent listening. According to al-Qazwini, the karkadann loves the ring dove (fākhita ڑخت) and stands under the tree in which the bird is nesting to enjoy its cooing. The reclining animal is therefore shown listening to the sounds of the small birds in the tree.42 Al-Qazwini states, too, that

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42 This feature is obviously a romantic interpretation of a real observation. It is based on the existence of the winged friends of the rhinoceros which feed on its parasites and, at the same time, warn it of approaching danger. This phenomenon has been mentioned in descriptions of the African species in 53, vol. 12, p. 617; 162, pp. 88-89; and 263, p. 240. It is also well illustrated by a group of square-lipped rhinoceroses from the Belgian Congo with accompanying rhino-birds, a variety of ox-pecker, on display in the U.S. National Museum, Washington D. C. Dr. Herbert Friedmann, curator of the division of birds of this museum, has been kind enough to give me an opinion about this relationship of the two animals, especially in Asia: There are a number of kinds of birds that frequently perch on the backs of rhinoceroses, buffaloes, and other large animals, partly to feed on the insect parasites on the animals and partly on the insects scared up by the animals while grazing.
when the bird alights on the horn, the karkadann does not move its head, so as to avoid frightening it away. So far, no miniatures have been found which show this more intimate relationship of rhinoceros and dove.

In none of the texts examined was it possible to find any reference to wings. This feature is to be found mostly on the Spanish ivory boxes and then later in the thirteenth- and fourteenth-century representations of the animal forming a decoration on objects or buildings and in a few Shāhnāmah miniatures. With the exception of the illustration in the thirteenth-century British Museum manuscript of Naʿī al-ḥayawān (pl. 7) and the decorative title page of the al-Qazwini manuscript in the Metropolitan Museum (pl. 17) the scientific manuscripts disregard it.43 It is, however, easy to explain the discrepancy between texts and many representations. The texts show that the karkadann was thought to be an exceptionally strong, fierce, and rare animal with qualities which placed it in the monster class. It was not only an exotic animal, but as al-Jāḥiẓ indicated, thought by many to be an imaginary one. It is therefore natural that artistic imagination should give it the same feature which was customarily attributed to representations of sphinxes and griffins.44 Furthermore, in the period when the winged representations of the karkadann appear in large numbers in the ornamentation of the decorative arts, even zoological books speak of quadrupeds and human beings with wings.45 There is thus a

The common bird of this type in Asia is the cattle egret, a rather small white heron. This association is of mutual benefit to the bird and the large animal. The bird gets its food in this way, and the animal is warned of approaching danger by the action of the bird.

43 Thus the Arabic Manāf al-ḥayawān in the Bibliothèque Nationale, Arabe 2782, written in 1300 (700), shows an animal without wings as an illustration for its chapter on the karkadann, and the same can be said about the Persian Manāf-i ḥayavān in the Morgan Library, M.300, which dates from the end of the thirteenth century.

44 For sphinxes see 29, pp. 117-122, pl. 55. This study is quoted with reservation since its theory needs critical comment. For griffins see the Hispanic-Moresque ivory boxes referred to in footnote 4 of page 4.

45 Al-Qazwini tells us, e.g., that there is a variety of cat with batlike wings on the island of Java (217, vol. 1, p. 107; 218, p. 219). He also quotes a
natural tendency on the part of the decorative artist to add wings to animals—even to such well-known ones as lions and hares—so as to add some fabulous and fantastic quality. Wings are therefore not a surprising feature in nonscientific representations of the karkadann.

story of al-Bīrūnī according to which a governor of Asbijāb sent a fox with feathered wings to the Sāmānid Nūḥ b. Manṣūr (217, vol. 1, p. 451; 216, p. 40). In his discussion of strange beings, al-Qazwini speaks of three different island peoples having human forms and wings (217, vol. 1, pp. 448-450; 216, pp. 30, 32, and 36). These flying men are illustrated in certain al-Qazwini manuscripts as, for instance, in the one formerly in the Sarre collection where a green-skinned, black-bearded man is pictured with large red wings and a white man with blue wings.

46 For the winged lion see the glass vessel in the Freer Gallery, No. 33.13 (see above, p. 3) and the Stora bucket (117, vol. 6, pl. 1291B). A thirteenth-century gold buckle in the Berlin Museum shows a winged rabbit (226, col. 67; 167, p. 18, No. 193X).
THE KARKADANN ATTACKING OTHER ANIMALS

The two stone sculptures from Konya (pl. 3, middle and lower) no longer treat the karkadann by itself, and they belong, therefore, to another iconographic group. Professor Sarre already realized that these reliefs were not unique specimens and could point to a thirteenth-century Persian luster tile as another example of this group (pl. 18, upper). Further examination of medieval art objects indicates that the motif of the karkadann attacking another animal was fairly popular in the thirteenth and fourteenth centuries.

An obvious place to look for further examples is the animal friezes used on objects of the thirteenth and fourteenth centuries, especially on metalwork. A winged, zoologically undefinable karkadann running behind an elephant thus occurs twice on the large inlaid platter of the first half of the thirteenth century from Syria found in Kashghar and now in the Hermitage Museum (pl. 18, middle). ¹ The same combination of animals is to be found in the upper animal frieze of the large Syrian basin known as the “Baptistère de Saint Louis” of ca. 1300 (700) in the Musée du Louvre (pl. 19, upper). ² Here it is even possible to establish certain facts about the “unicorn”; it belongs to the equine group and carries on its forehead a long straight horn with horizontal striations. ³ Further examples, this time from Iran and in the

¹ The whole plate is illustrated in 233, vol. 2, pl. 153A.
² The whole basin is illustrated in 186, vol. 1, pl. 22; and 117, vol. 6, pl. 1339. I owe the photograph of this detail to the kindness of D. S. Rice.
³ Other metal objects of the thirteenth and fourteenth centuries in whose decorative scheme a karkadann pursues an elephant are: (a) basin of the late thirteenth century (181, pl. 20A; and 264, pl. 20, fig. 2 [the elephant is unfortunately not very distinct in the illustrations]); (b) tray with the name of the Rasūlid Sultan al-Malik al-Muṣaffar Yūsuf (died 1295/694), Cairo, Musée Arabe (67, pl. 47); (c) brazier made for the Rasūlid Sultan al-Malik al-Muṣaffar Yūsuf, Metropolitan Museum (84, fig. 1). Here two such scenes are represented in the animal frieze. This brazier and the tray for the same sultan of Yemen (quoted as “b”) were most probably made in Egypt; (d) tray, late thirteenth century, formerly collection of M. Edmond Guérin (185, pl. 19).
cubic medium, are provided by two nearly identical luster tiles in the Boston Museum of Fine Arts and the Metropolitan Museum. Both show a winged equine karkadann (pl. 19, lower). These examples indicate that the iconographic combination of unicorn and elephant is not uncommon and it can be assumed that many more specimens will be found. There is, however, one variant which will probably remain rare if not unique. This is shown on a carpet painted in one of the miniatures of the Maqâmât manuscript, dated 1337 (738) in the Bodleian Library (pl. 18, lower). In this instance the elephant is attacked by another gray animal of nearly equal size, but with different ears, a peculiar forehead, and without a trunk. It has two horns on its nose, and it uses the longer one in front as the weapon to pierce the rump of the elephant. There seems hardly any doubt that in this case the karkadann is meant to be the two-horned African rhinoceros. The artist's choice of this species for his carpet can easily be understood when one realizes that this manuscript was executed in Mameluke Egypt and that the text of the nearly contemporary Egyptian writer al-Nuwairî (died 1332) proves that people in fourteenth-century Egypt knew about the two-horned rhinoceros.

A different type of hunted animal is represented in the lowest register of the inlaid Mosul candlesticks from the middle of the thirteenth century in the Metropolitan Museum. It shows in two places not an elephanlike monster, but a deer as the animal pursued by a karkadann, one resembling a horse.

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(e) tray, Egypt, thirteenth or fourteenth century, Metropolitan Museum No. 91.2.604, unpublished. In the outer frieze a winged equine unicorn pursues the elephant, while the inner animal frieze shows a more bearlike unicorn as the attacker; (f) candlestick, Egypt, fourteenth century (214, vol. 3, pl. 169); (g) plate, Syria, fourteenth century, Eustache de Lory collection (79, pp. 56-57, No. 193, illustrated).

* The Boston piece is here illustrated. The still unpublished Metropolitan Museum tile has the number 40.121.10.

* The whole miniature is illustrated in 29, pl. 12a; and 125, fig. 9. Holter established the Mameluke origin of the paintings in this manuscript (126, p. 29, No. 77; 125, pp. 1-14).

* 201, vol. 9, p. 315.
and the other more like an antelope. Such a deviation
from the more common iconography occurs also among the en-
ameled glasses of the fourteenth century, witness the covered
vessel of Mr. Kevorkian, in New York (pl. 20). On its main
band a winged onagerlike unicorn attacks with its long horn a
winged creature which is part antelope and part rabbit. This
scene is a unit in a decorative frieze that includes other fan-
tastic animals such as griffins and sphinxes. This iconographic
type occurs also in a carpet design as late as the seventeenth
century as indicated by a Mughal rug in the Widener collec-
tion of the National Gallery in Washington. Here it is, how-
ever, a realistically rendered rhinoceros that pursues the deer
(pl. 21). These are typical examples of many similar cases.

Sometimes an artist combines the two basic iconographic
types of this group and represents in a single animal frieze sev-
eral unicorns which attack both elephants and other animals.
Such a piece is, for instance, the large tray made for the Rasūlīd
Sultan al-Malik al-Mu‘ayyad Hizab al-dunyā wa‘l-din Dā‘ūd
(1296-1321/696-721) which displays in its framing frieze
three unicorns which attack an elephant, a lion, and a feline
beast.

It might be assumed that the motif of the attacking karka-
dann is just another variation of the typical Seljuk and post-
Seljuk design of animals chasing each other. However this
may be in the case of other animals, the attacking karkadann
illustrates a feature that is not merely a chance creation of

7 Unfortunately the scenes are not on the side of the candlestick illustrated
in 82, fig. 87.

8 Illustrated in color in 80, pl. 36. It might be suggested that this carpet
also shows a karkadann-elephant fight. Along the lower edge a winged
quadruped is seen pursuing an elephant. The monster is so close to certain
representations of the karkadann that one can assume it to be identical with
this animal although it is shown without a horn. The lack of such a vital dis-
tinguishing feature can be explained by the late date of the carpet, its manufac-
ture at a court where folklore had little appeal, and the hodgepodge character
of the piece. The animal which we have tentatively identified as a karkadann
occurs again, right behind the realistically rendered rhinoceros, so that we
would have here two manifestations of the same animal.

8 84, fig. 2, which is unfortunately not very distinct. The piece is of Egyptian
workmanship.
the artist and thus without significance, but actually the pictorial expression of a characteristic trait associated with the karkadann.

The background of this particular myth is the proverbial fierceness and strength of the animal of which even the earliest writers speak. No wonder one reads that no animal can withstand it. They all fear it and flee from it, especially since the karkadann is quickly angered and never fails in attack. "When the karkadann is in a certain territory, no other animal will graze anywhere in that territory unless there is between it and the karkadann a distance of 100 parasangs (about 375 miles) in all directions, because they are afraid of the karkadann, acknowledge its superiority, and flee from it." It kills the lion, but the most convincing proof of the animal's strength and fierceness is the fact that it is the archfoe of the giant among animals, i.e., the elephant. This unhappy creature tries to escape it but nevertheless falls victim to its horn. Al-Jāhiẓ gives the following version: "They believe that the karkadann often goesres the elephant and lifts it upon its single horn," although he does not quite believe this tale because, to him, it sounds more like idle talk. Nevertheless, this account occurs again and again and is varied only in details. Thus, al-Qazwini tells us that "when the karkadann sees an elephant, he approaches it from behind, strikes its belly with its horn, stands on its hind legs and lifts the elephant until it is impaled on its horn." Hence Firdawsī applies to the karg the epithet "elephant-vanquisher."

Practically all representations show the chase of a deer,

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10 Al-Jāhiẓ states that these two qualities are proverbial with the people (I 45, vol. 7, p. 42), and the Akhbār al-Sin wa 'l-Hind claims that no animal equals it in strength, an opinion repeated by al-Mas'ūdī (184, vol. 1, p. 385).
12 217, vol. 1, p. 402; also al-Mustawffī.
13 145, vol. 7, p. 40. This opinion is also held by al-Qazwini and al-Damiri.
14 165, p. 94, footnote 2, referring to Ibn al-Faqīh. Firdawsī also speaks of the karg-i shir-awshak, "the lion-quelling rhinoceros" (102, vol. 4, p. 318, line 478; see also p. 494, line 1605).
16 پیل-گیر (102, vol. 5, p. 203, line 123).
antelope, or elephant with the karkadann right behind its victim. The painter of the ‘Ajā‘ib al-makhlūqāt manuscript in the Walters Art Gallery, however, illustrated the final phase of the fierce fight when the hapless elephant was impaled on the horn of the karkadann (pl. 22).

Al-Qazwini gives also a specific account of what happens to the karkadann once it has vanquished the elephant: “... when the karkadann is caught, it wants to free itself from the elephant but is unable to do so. Then it falls on the ground and both the rhinoceros and the elephant die.” Al-Mustawfi uses a good reason, though based on a wrong premise, why the horn of the karkadann cannot be withdrawn from the elephant’s body after its bulky corpse has been lifted up on the horn: the “protuberance,” the curve of which runs counter to that of the horn, naturally makes it impossible to extract the deadly weapon.

In contrast to the authors so far quoted, according to whom the interlocking bodies of the two giant animals accounted for the death of the karkadann, other writers had different conceptions of what would happen once the elephant was impaled. Thus al-Jāḥiẓ says mysteriously that the karkadann feels the presence of the dead elephant on its horn only when it decomposes. Later authors have taken up this suggestion and like al-Dimashqī and al-Mustawfi elaborated on it. The last-named author, for instance, says that “the elephant’s fat gets into the eyes of the karkadann and blinds it and both die.” The second voyage of Sindbad the sailor in the Arabian Nights also follows this version; however, after having gruesomely told that the karkadann becomes blind from the fat of the elephant which has melted in the heat of the sun, the story continues, introducing a third animal: “... then the karkadann lies down upon the shore and the rukh comes and

11 This story is only slightly varied by the Manṣf-i hayātān which has the karkadann standing on its hind legs, raising up its front legs when it strikes at the shoulder of the elephant. In this account, too, the karkadann cannot pull out its horn and remains stuck to its giant prey until both perish (5, fol. 15A).

carries it off in its talons to its young ones and feeds them with it and with that which is upon its horn."\textsuperscript{19}

A third theory explaining the death of the giant animals is given by al-Nuwairi for whom neither the decomposed substance of the elephant nor the inability of the rhinoceros to extract its horn from the victim's belly are apparently valid enough reasons to account for the death of both animals. He states that the horn of the karkadann is poisonous and thus kills the elephant, and since the blood of the elephant is likewise poison, the rhinoceros, too, is doomed.\textsuperscript{20}

To these accounts of the elephant and the karkadann some further comment should be added. First, the time has now come to return once more to the representation of the sharav which the artist had substituted for the karkadann in the Berlin al-Qazwini manuscript (pp. 19 f. and pl. 13, upper left). A further examination of al-Biruni's account shows that the sharav, too, "attacks the elephant and cleaves it in two."\textsuperscript{21} But it is not only this feature common to both Indian animals which lead to their being exchanged for each other. Al-Biruni concludes his report with the following statement: "According to popular tales it sometimes rams an animal with its horn, raises it or part of it toward its back so that it comes to ride between its 'upper feet.' There it becomes a putrid mass of worms which work their way into the back of the animal. In consequence, it finally perishes." Since these details of the untimely death of the sharav through the decaying animal impaled on its back are more specific than those given in the earliest sources for the karkadann, they may possibly be the prototype for it and may have been transferred from the one animal to the other. In any case, it seems not surprising that this sharing of certain features and assimilation of others

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\textsuperscript{19} Littmann assumes that the stories of Sindbad the sailor were probably put together in Baghdad in the eleventh or twelfth century. The main source is said to be the accounts of the \textit{Wonders of India} by the Persian sea captain Buzurg b. Shahriyār of the first half of the tenth century (21, vol. 6, pp. 747-748).

\textsuperscript{20} 201, vol. 7, p. 316.

\textsuperscript{21} 45, pp. 22 and 25; 44, vol. 1, p. 203.
led, eventually, to the substitution of the sharav for the karkadann in the Berlin manuscript.

Our second comment is aimed at the account of the Arabian Nights which brings together karkadann, elephant, and the rukh. Other texts dealing with the 'anqā' or simurgh, the equivalents of the rukh,\(^{22}\) throw further light on the relationship of these animals. According to al-Qazwini the 'anqā' lives on some islands in the ocean on which many animals live, amongst them, the karkadann. The 'anqā' hunts only the elephant, large fish, and giant snakes, and leaves the other animals because they have submitted to it.\(^{23}\) This preference of the mythical bird for the elephant has some influence on the iconography of Persian paintings.\(^{24}\) It explains, for instance, the title page of a fifteenth-century al-Qazwini manuscript in the Metropolitan Museum. Below the roundel with the title of the book is a little scene which shows how a winged karkadann warily watches an 'anqā' that is attacking its own prey, the elephant (pl. 17). Since, according to al-Qazwini, the karkadann is one of the animals which became subject to the 'anqā', it has to desist from attacking its usual prey. It is obviously this mental association of the fabulous bird with the elephant and the karkadann which accounts for the combination of the three animals in the Mu'nis al-ahrār miniature of 1341 (741) in the Cleveland Museum (pl. 8) and most probably also for the design on the carpet in the Maqāmāt of 1337 (738) in the Bodleian Library (pl. 18, lower).\(^{25}\)

\(^{22}\) See, for instance, the verse of the Shāh-nāmāh about the simurgh stating that "with its claws it beareth off the elephant at sight" (102, vol. 4, pp. 508-509, line 783; 103, vol. 5, p. 132).

\(^{23}\) 217, vol. 1, p. 420. The Mandāf-i ḥayawān makes not only the elephant, buffalo, and ox the victim of the simurgh, but also the karkadann (5, fol. 55b).

\(^{24}\) The copy of an alleged Persian drawing of the bird carrying two elephants in its talons and one in its beak in 22, vol. 3, p. 90, and republished in 210, vol. 2, p. 415, is rather naturalistic and therefore of fairly recent date, or at least a recent adaption of an older version. In its present appearance it has hardly any Persian or Muslim character.

\(^{25}\) The bird on this carpet looks somewhat like an ostrich. Since the 'anqā' is said to be the largest of the birds, it is not surprising to find that it is reproduced in the shape of the largest living bird. This interpretation of an Egyptian painter—if we are right in assuming that he represented an 'anqā'—
Karkadann and rukh are, as we have seen, the most powerful land animal and the most powerful bird to hunt the elephant. In fact, their relationship is so close that they were often confused, one for the other. This ambiguity of identification is revealed in different sources and extends even to the names themselves, as shown by the entries for kargadān in the dictionaries of Johnson and Steingass which give the following translation for the Persian word: "The rhinoceros; a huge kind of bird which pursues an elephant ten years old." Unfortunately these two authorities do not quote their sources and it is, therefore, not possible to investigate the basis for this information. There is, however, a text which demonstrates that the two animals were, indeed, identified with each other. Al-Jāhiz tells us that he disagrees with people who identify the karkadann with the 'anqā': "... they believe that the karkadann and the 'anqā' mughrīb are alike, although they are used to seeing the designs of the 'anqā' pictured on the carpets of the kings." What al-Jāhiz apparently had in mind was that the rugs showed a bird and not a quadruped with a single horn on its forehead and the two animals were therefore quite different. The erroneous identification was natural, since the 'anqā' was admittedly an imaginary animal and the karkadann, too, was, as al-Jāhiz tells us, sometimes thought to belong to the same category. The confusion of the two terms, probably nurtured by the fact that both animals in question hunt the elephant, seems to have continued long

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26 149, p. 1005; 250, p. 1024; Vullers (268, vol. 2, p. 820) gives only the meaning rhinoceros.

27 145, vol. 7, p. 29. This, by the way, is perhaps the earliest Muslim reference to an animal carpet.

after the period of al-Jāḥīz. This might explain the fact that al-Mustawfi calls the sharav (which is related to and thus substituted for the karkadann) by the name of rukh.²⁹

It was apparently known that the land monster and the giant bird had a common name, but instead of karkadann (kargadan), the usual Persian term for the terrestrial animal, al-Mustawfi erroneously selected the name of the bird rukh as the designation for both creatures. Verbal confusion just as well as popular imagination has thus affected animal lore.⁸⁰

²⁹ He (195, pp. 43-44, translation pp. 30-31) uses the bird’s name although he gives al-Birūnī and ‘Awfi as his source, both of whom have sharav.

⁸⁰ A verbal association centering around the word karg may have influenced the painter of the Cleveland miniature (pl. 8) in his choice of a fourth animal for his series. It is a vulture, Persian کرگس kargas, literally “fowl eater”; the first syllable of this word might have formed the mental connection with karg-karkadann which together with the elephant and the simurgh form the content of the miniature.
THE HUNT OF THE KARKADANN

The third iconographic type is represented by scenes in which the unicorn is itself attacked by man. If one takes the Arab authors at their face value such a happening seems well-nigh impossible in view of the ferociousness of the karkadann. Al-Damiri is quite specific in this respect and states that "it is very hostile to man; when it smells him or hears his voice it pursues him, and after having reached him kills him without eating anything of the corpse." This motif is not as frequent in the accounts of the rhinoceros as, for instance, those of the death struggle with the elephant, but it is nevertheless found in several important texts. However, according to the character of the hunter's tale on which they are based the stories vary a great deal. Ibn Faḍlān, for instance, quotes the account of the Volga Bulgars of how the rhinoceros uses its horn to lift a rider from his horse and to throw him repeatedly into the air always catching him again with its horn until the wretched victim is killed. On the other hand this writer assures us that the beast never attacks the horse of the rider. According to al-Nuwairi an equal enmity to man is shown by the two-horned African variety of the animal, although the mode of attack is said to be different. Once the hunter has been noticed by the rhinoceros he is forced to rescue himself by a quick flight up a tree, a stratagem which in many cases does not help, since the monster breaks the tree by assault and kills the man. Only when the man urinates on the ear of the animal is he able to put his attacker to flight. On the other hand, the horn is not always regarded as the murderous weapon of the animal, for Aḥmad Tūsī reports that the hunt of the rhinoceros is difficult because its voice is deadly.²

² 134, p. 94 (translation p. 76), 134, p. 78 (footnote 1 of the preceding page). Actually the squealing or quacking noise made by a rhinoceros when he gets human scent and is alarmed has been compared to something between the bark of a dog and the quack of a duck (128, p. 11); the same observer speaks of the "squeaking noise"
Fanciful as some of these accounts are they nevertheless demonstrate the great awe in which the animal was held and the difficulties encountered in hunting it. As a matter of fact, these statements were based on experience and observation and they are therefore fundamentally true. Yet in spite of all hazards—real and imaginary—man successfully attacked the rhinoceros and killed it; however, the task was so formidable that it formed a theme in legends and later on was even thought to be worthy of historical record. Both these types of reports have been glorified by painters.

The scenes in which a legendary hero kills the "unicorn" are mainly represented in the Shāh-nāmah illustrations. Although such pictures are not too common, several of them have been discovered in the course of this investigation. There must be many more which have not yet been published or are not even recorded.

The first hero in the Shāh-nāmah to perform this deed of prowess is Gushṭāsp while exiled in the land of Rūm. When Mīrīn, a Rūman noble, asks for the hand of the second daughter of Caesar, he is told that he would be accepted only after having killed the monster. Being unequal to performing the task, Mīrīn enlists the help of Gushṭāsp who, on foot, vanquishes the beast on his behalf without revealing the secret. Gushṭāsp's son Isfandiyār kills two such animals as the first of the seven feats he has to perform on the way to the Iron Fortress where his sisters are kept prisoners. When Iskandar is in the land of Ḥabash (Ethiopia) he encounters a whole pack of the African variety of the animal and slays their

of the undisturbed animal (128, p. 12), and he mentions also the "tremendous snorts, more like an engine blowing off steam than anything else" (128, pp. 6 and 12). In both cases he is referring to the Asiatic two-horned rhinoceros observed in British Malaya, the behavior of which is not different, however, from that of the Indian and African species. Blanford (48, p. 474) speaks of "a peculiar grunt" as the only sound produced by the great Indian rhinoceroses.

3 None is illustrated in the study devoted to the miniatures of twenty Shāh-nāmah manuscripts in the Leningrad libraries (108, pls. 1-50).

4 The story is told in 102, vol. 4, pp. 304 ff.; and the killing of the animal on pp. 311 ff.; 103, vol. 4, pp. 333 ff. and 337 ff. respectively.

leader. The fourth hero to combat the animal successfully is the mighty hunter Bahrām Gūr, who performs this feat while he is disguised as the ambassador of the Shah of Iran to the court of Shangul of India. How popular belief evaluated the immensity of the task of killing a rhinoceros is shown by the fact that it is put on the same level as the killing of a dragon which in the case of all four Shāh-nāmah heroes follows as a subsequent exploit.

When one looks over the miniatures illustrating these fights with the monster, the differences in the representations of the same animal again become obvious. They include some of the types discussed on earlier pages, but also a new and unexpected species, a wolflike beast, which is characteristic of the Shāh-nāmah. The cause of this profusion of types cannot be blamed on the unbridled imagination of the artists who might, quite erroneously, be suspected of having represented the animals according to their fancy. It is the double meaning of the basic term and the verbal ambiguities of the description which lead to uncertainty and thus to mental confusion. While the poet could be vague and suggestive, the painter had to find a solution which was often ingenious, though the zoological reconstruction from literary tidbits is usually at great variance with nature, and, of course, also with representations in other manuscripts.

In Firdawsi’s text the animal is called کَرِکَ which, owing to the lack of diacritical marks in early manuscripts, when applied to a quadruped can be read as gurg (wolf) or karg (rhinoceros). The first, being a common word, suggests itself more readily. To make the issue even more confusing the text is nowhere precise enough to enable the reader to choose between the two. In the stories of Gushtāsp and Isfandiyār the word is rhymed with suturg (large) and buzurg (big), thus pointing to gurg (wolf), and in the accounts of Iskandar and Bahrām Gūr with targ (helmet), tagarg (hailstone), and marg (death) indicating the form karg. In the poem, Gusht-

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6 102, vol. 5, p. 302; 103, vol. 6, p. 149.
7 102, vol. 6, pp. 56 ff.; 103, vol. 7, pp. 121 ff.
8 Wolf (280, p. 704) points to these different rhyming words in his discus-
asp himself is made to express his astonishment that foolish men should have given the name of gurg to a monster which he regards as a dragon. No wonder that the illustrators of the *Shāh-nāmah* have mistaken the wolf for the rhinoceros. The verbal ambiguity is cleared up, however, when the character of the animal is analyzed and, in all four cases, is found to be of the same general type: It is a huge dark-colored monster, like an elephant, of ferocious nature; and it charges its foes furiously so that all animals and even brave men avoid or flee it. Characteristically, elephants are no exception to the rule. It terrorizes the whole countryside and victory over it is a matter of royal acclaim and honor. What makes it definite that the animal is the rhinoceros—even when its Persian name is, on account of the rhyme, to be read gurg—is the fact that it has but one horn, sometimes described as being dark or even black. The only misleading conception of the poet is to compare this horn with that of the stag. It is this poetical expression that induces the artist in some cases to depict the animal in antelopelike fashion. But even the ambiguities which pointed either to a wolf or a stag were not the only ones to harass the painter since Firdawsi speaks also

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9 103, vol. 4, p. 308, line 362, and p. 320, line 386.

10 The same applies also to translations like those of Mohl (who always speaks of "loup") and the Warners; in the case of the animal killed by Bahrām Gūr, Messrs. Warner realize, however, that the word "ought perhaps be read as karg, rhinoceros" on account of the rhyme (103, vol. 7, p. 121, footnote 1). Nöldeke definitely states that the animal killed by Bahrām Gūr is a karg, rhinoceros, not a gurg, wolf (200, p. 47).

In view of the ambiguity of the Persian text, the rendering of *kūr* as "loup" or "wolf" in the most widely used translations and finally the wolflike representations of the animal in Persian miniatures, it is not surprising to find that Western captions of *Shāh-nāmah* illustrations nearly always speak of a "wolf."

11 Another proof that the animal was understood as rhinoceros is the caption of the Demotte *Shāh-nāmah* miniature (pl. 9) which does not use the ambiguous term *kūr* but *kūr*.

12 See p. 18, footnote 29.
of the claws of a lion and two tusks like those of an elephant or boar.\footnote{These tusks are such a vital feature that Gushtäsp takes them with him after he has slain the animal (102, vol. 4, p. 312, line 407; 103, vol. 4, p. 338).}

When an artist was faced with the dilemma of illustrating such a strange beast, one way out of the difficulty was to follow the text as literally as possible and combine all the main features in portraying the animal. This happened in the Isfandiyâr scene in the manuscript of 1429-1430 (833) in the Gulistân Palace in Teheran (pl. 23).\footnote{About the manuscript see 43, pp. 69-71, pls. 43-50; 154, vol. 3, pp. 1851-1852, vol. 5, pls. 869-874. The miniature (first published in 43, p. 71, No. 49, and illustrated on pl. 47B), the two paintings in the Demotte Shâh-nâmâh, and one of the miniatures in the Myers collection (pl. 24, lower), are—to my knowledge—the only Shâh-nâmâh scenes showing the fight with the karg so far published.} Here the artist shows two large wolves with long tusks, leonine paws, and a single antlerlike horn on the head of the male animal. Whatever one might think of these two creatures from a zoological point of view, which indeed does not matter here, as an artist and illustrator the painter accomplishes his task with imagination and spirit.

The gurg or lupine type in Shâh-nâmâh illustrations can be traced back as far as the fourteenth century in two paintings showing the exploit of Bahram Gûr. One is from the Demotte manuscript in the collection of the late Mrs. John D. Rockefeller\footnote{54, p. 111, No. 53 and fig. 26; 194, fig. 10.} and the other from a small-sized Mongol manuscript now in the Freer Gallery (pl. 25).\footnote{No. 30.10A, unpublished.} The choice of this animal-type for scenes with this particular king is revealing, because the text calls the beast killed by him not a gurg, but a karg. Quite obviously both terms mean the same beast.

In some instances, the descriptive text cannot be found to justify certain details in an illustration; however, such references will appear elsewhere in the epic in accounts of other heroes battling with the rhinoceros. Thus Firdawsi does not speak of the tusks of a boar which the artist of the Rocke-
feller miniature depicts; they are mentioned only in the case of the gurg killed by Gushtāsp.\footnote{The animals killed by Isfandiyār are said to have elephant's tusks (102, vol. 4, p. 494, line 1606).} All this indicates that the animals encountered by the four heroes—be they gurg or karg—were understood to be the same animal and their respective features were thus interchangeable to the artist. In other respects, however, the painters of the two miniatures took the text more literally. In the Rockefeller miniature the awe-inspiring carcass with its very long, slightly curved horn, is indeed of "bulk so vast" that the picture makes one believe that "lions fled the woods before it." The painter of the Freer miniature, on the other hand, is interested only in a simple and direct presentation of facts and not in the emotional aspect of the scene, and his "wolf," distinguished by size and wings, does not arouse the hideous horror of the other painting.

In other instances the artist ignores the lupine aspect of the beast and presents it in the shape of an antelope with a huge single horn on its forehead. The earliest example so far found is in the Shāh-nāmah of the first half of the fourteenth century in the collection of George Hewitt Myers, Washington, D. C. (pl. 24, lower). Here Iskandar is shown killing the Ethiopian karg in the form of a stag whose monstrous character is underlined by flames above the front legs. Another fine example is a miniature from a manuscript of the second half of the fifteenth century, in the Bibliothèque Nationale, Paris, in which Gushtāsp is shown killing the animal (pl. 26). Here again text and painting do not seem to match, since the text speaks of a gurg while the painting shows an animal which is certainly not a wolf. By now we realize, however, that this discrepancy is not a real issue.

The problem was often solved within a manuscript by having illustrations of two battle scenes, each with a different type of animal, and thus the confusion in nomenclature was overcome. In the small-sized Shāh-nāmah in the Myers collection, Gushtāsp is depicted as the slayer of a lion-unicorn while Iskandar kills a stag (pl. 24). Both animals have a large
single horn on their forehead and, following a convention of
certain Chinese legendary monsters, they also display large
flames which emanate from above their front legs. At about
the same time the Demotte Shāh-nāmah has Iskandar fighting
a leonine monster (pl. 9) while Bahrām Gūr kills a wolf;
here the only feature common to both is the long single horn
on their foreheads. However, even this all-important trait is
not always shown. For example, Isfandiyār is battling four
ordinary—that is to say hornless—wolves (instead of the two
mentioned in the text) in a Shāh-nāmah written in 1497 (902)
in the Kevorkian collection (pl. 28) while Bahrām Gūr kills
a single-horned antelope in another miniature of the same
manuscript (pl. 27). When one compares the animal in this
painting with that of the Rockefeller miniature which also
shows Bahrām Gūr in his fight, the two types of karg make it
obvious at once that there is no iconographic consistency that
matches each hero with a specific animal. Other miniatures
give further proof of this. In the Shāh-nāmah dated 1605-
1608 (1014-1016) in the Metropolitan Museum, Isfandiyār
is seen killing two deer with the horns of a rhinoceros on their
noses (pl. 29), although in the Kevorkian miniature the
same hero is fighting four wolves (pl. 28). However, a Shāh-
nāmah of 1544 (951) in the Princeton University Library has
at least this in common with the above-mentioned manuscript
in the Metropolitan Museum, that in both cases we have an
ordinary wolf slain by Gushtāsp while the antelope with the
rhinoceros horn killed by Isfandiyār in the Metropolitan Mu-
seum manuscript corresponds to a real rhinoceros in the Prince-
ton codex (pl. 30). All one can say from the relatively few
examples so far tracked down is that when two combat scenes
are shown in one manuscript one represents a wolf and the
other a one-horned animal, usually an antelope. Since the
text of the Shāh-nāmah speaks definitely of a gurg in the fights
of Gushtāsp and Isfandiyār, a certain preference for the wolf-

18 193, pp. 20-27. The miniatures showing a fight against the karg, No. 55
(Gushtāsp) on fol. 316a and No. 58 (Isfandiyār) on fol. 344a, are not illustrated
in the catalog.
like beast might possibly exist in the miniatures showing these two heroes. After the early sixteenth century the one-horned animal reveals features of the rhinoceros, be it only in the correct position of the horn or in the whole body structure. How the different animal types are distributed among the manuscripts so far described is demonstrated by chart A.\textsuperscript{20}

The comparative frequency of the various karg scenes can best be judged by taking a large collection of \textit{Shāh-nāmah} manuscripts as a basis of investigation. Fortunately we have the descriptive catalog of the manuscripts in the Leningrad libraries available for such a survey.\textsuperscript{21} These libraries own 21 illuminated manuscripts dating from 1333 to the nineteenth century and have in a single manuscript as few as seven and as many as 192 miniatures. One can therefore assume that they provide a fairly representative cross section of the \textit{Shāh-nāmah} iconography. Of these 21 manuscripts three showed a single combat scene with a karg per volume and four have two scenes. The distribution of the subject becomes clear from chart B.

Combining the data provided by both chart A and chart B, one can state that no single manuscript seems to have more than two scenes. One can further assume that scenes with Gushtāsp and Isfandiyār are probably more common than those showing Bahrām Gūr. The miniatures with Iskandar are rare. Finally one can say that the more miniatures a manuscript has the greater the likelihood is that one or two of the four scenes are represented, since the scenes were found in manuscripts with a miniature range of 29-192; only one manuscript in this group had less than 50 miniatures. On the other hand, manuscripts in which the scene is missing contain only from 7 to 64 miniatures and only three of these contain over 50.

\textsuperscript{20} This chart is only approximately correct, since not all paintings in the now cut-up manuscripts are known; I have also not been able to examine the manuscript in the Bibliothèque Nationale which may contain another karg miniature.

\textsuperscript{21} 109, pp. 1-123. I am indebted to Dr. Sidney Glazer of the Library of Congress for having kindly translated for me the pertinent passages of the Russian text.
The fight with the monster, our third iconographic type, is not restricted to illustrations of the Shāh-nāma. It is also to be found in the decoration of an implement of daily use from outside Persia, namely, a richly decorated unglazed water jar from Mosul. In two slightly varying scenes the hero kills a winged unicorn of the equine type, though with the front legs of a carnivore, the hind legs of a bird of prey, and a tail ending in a dragon’s head (pl. 31, left).\textsuperscript{22} It is hard

\textbf{Chart A.—The distribution of animal types in eight Shāh-nāma manuscripts}

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<tr>
<td>Gushṭāsp</td>
<td>lion</td>
<td>antelope</td>
<td>wolf</td>
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<tr>
<td>Isfandiyār</td>
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<td></td>
<td></td>
<td>wolf rhinoceros</td>
<td>antelope</td>
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<tr>
<td>Iskandar</td>
<td>lion? stag</td>
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<td>wolf</td>
<td>wolf</td>
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<td>Bahrām Gūr</td>
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\textbf{Chart B.—The frequency and distribution of karg miniatures in Leningrad Shāh-nāma manuscripts}

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<tbody>
<tr>
<td>Gushṭāsp</td>
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<td>Isfandiyār</td>
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<td>Iskandar</td>
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<td>Bahrām Gūr</td>
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to say which legendary person is represented. Three of the heroes described in the Shāh-nāma are purely Persian;\textsuperscript{23} only the fourth, Iskandar, the Dhu ’l-Qarnain of the Koran, would be known in an Arab country. But there is another, better approach to the problem. Professor Sarre compared the motif on the jar with the Persepolis relief showing a king fighting a “unicorn” (pl. 31, right). He was right in assuming a revival of an ancient motif. However, instead of regarding a

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\textsuperscript{22} 229, columns 8-11; 231, p. 228, pls. 195-196. In one scene the killer seizes the horn of the animal; in the other, one of its front legs.

\textsuperscript{23} Gushṭāsp, Isfandiyār, and Bahrām Gūr.
piece of architectural sculpture from outside Mesopotamia as the possible prototype, it might be better to look for an object from Mesopotamia itself, preferably an object of the minor arts. Scenes with a genius or king fighting a winged equine beast with a single horn on its forehead, as found on seals, give a good idea of what might have served as an indigenous model (fig. 1). When one assumes such a survival of an age-old iconographic theme, one should also consider a local interpretation for the scene. One is led to this conclusion by the description of Persepolis in Ibn al-Balkhi’s twelfth-century account of Fars. When discussing the same series of reliefs

![Illustration of a divine hero killing a winged bull. Mesopotamia, ca. 2300 B.C. Formerly collection of Prof. Ernst Herzfeld. (After 123, pt. 2, fig. 135A.)](image)

...to which Professor Sarre had been referring in his discussion of the Mosul jar, the medieval Persian writer did not identify the hunter in the sculpture with one of the four heroes of the Shāh-nāmah, familiar though they must have been to him; he called him Jamshīd, because the ruins of the palaces were locally connected with this mythical Persian king. On the other hand, Ibn al-Balkhi’s identification of the Persepolis animal as a karkadann makes it fairly certain that the monster

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24 123, fig. 135A. Compare especially the winged equine body, the seizing of the beast’s forelegs which are raised, and the short garment of the slayer. Cf. also figures 148, 151, 216, 218, and 223 for partial aspects of the iconographic type. See also 270, p. 201, No. 580; 272, vol. 2, Nos. 333, 343, and 348; 267, pp. 232-233, No. 1 and fig. 1.

25 132, p. 127; 131, p. 27.
on the Mosul jar was given the same name (see also pp. 67 f.).

The killing of rhinoceroses in historical times is recorded at a fairly early date. In 922 (310) the Bulgars told Ibn Faḍlān how bowmen armed with poisoned arrows climb up a high tree above the resting place of the animal and kill it from this safe hide-out. About the same time a Muslim ambas-
sador to the Chinese court gives the emperor a similar account of the way in which the rhinoceros is hunted. As we shall see later on, the horn of the rhinoceros was a valuable commodity exported by Muslim traders to the Far East, and it seems reasonable to suppose that many of these were taken from hunted animals.

Reports of rhinoceros hunts have come down to us from at least the late fourteenth century on. According to the Zafar-
nāmah, Timūr once killed several animals with sword and spear on the frontier of Kashmir and the scene is therefore

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26 One of these reports sounds somewhat fantastic, but its theme is of literary significance. Marvazi tells us that “one way of hunting the rhinoceros is for a man to shelter himself behind a huge tree which the animal cannot uproot or break, then to shout at it and rouse it; it will charge at the tree, striking it with the horn which sticks in the tree. The animal is then unable to extract the horn and people kept in readiness come out and kill it” (6, fol. 136a; 7, fol. 90a). This ruse is also employed in Grimms’ Fairy Tales in the story of "Das tapfere Schneiderlein" (114, vol. 1, p. 115) in which the Brothers Grimm followed the earlier version of Martin Montanus (died after 1566) (122, p. 144).

Shakespeare, too, states that “unicorns may be betrayed with trees” (Julius Caesar, act II, scene 1). In the letter of Prester John it is the lion that uses this method to kill the unicorn (242, pp. 241–242), and it is also referred to in Spenser’s Faerie Queene (64, p. 426). Although it seems rather unlikely that a rhinoceros was deliberately hunted in this manner, incidents of such a nature have occurred. To quote one example: “A rhino once charged a tree up which a man had climbed to escape the beast’s onslaught. The rhino’s horn buried itself eight inches deep into the trunk and split the tree four inches up and down of the point of impact. The horn was so deeply imbedded that before the rhino could tug itself free it was shot by a companion of the man it had charged” (161, p. 80).

27 134, Arabic p. 34, translation p. 76.

28 71, p. 118. This is confirmed by modern writers with regard to the hunting of the animal in the interior of Africa along the river Batha (53, vol. 12, p. 618).

29 The Tarikh-i Mubārak-Shāhī (quoted in 282, p. 76a) states: “In the month of Zi-l-Ka’dā of the same year (ca. 1397) he (Prince Muhammad Khan) went to the mountains of Sirmur (west of the Jumna) and spent two months in hunting the rhinoceros and the elk.”
occasionally represented in manuscripts of the text such as in the copy of 1523 (929) in the British Museum.\textsuperscript{30} It was quite natural that the Mughal emperors went rhinoceros hunting. Bābur relates in his memoirs how he went to a karg-khānah or rhinoceros haunt on the Sawātī in 1519 and set fire to the brush to drive out the animals. A calf which had been badly scorched by the fire and found half dead on the ground was finally killed. The emperor concludes his account by stating that “everyone took a share of the spoil,” apparently as a trophy of the chase.\textsuperscript{31} This scene with the burning jungle in the background and the cut-up, blood-stained carcass of the rhinoceros calf in the center is illustrated in a miniature from a now dispersed Bābur-nāmah of the Akbar period in the Walters Art Gallery (pl. 32).\textsuperscript{32} There seems to be an even earlier echo of the kind of rhinoceros hunt which Bābur described, because one reads in the Manāfi’: “... the karka-dann resorts to reedy places where it is fierce, but timorous and not daring when it is out; it fears the flame of fire.” Another fine miniature of a Mughal emperor in pursuit of a rhinoceros is in the O. Sohn-Rethel collection in Düsseldorf (pl. 33).\textsuperscript{33} It shows a hunting elephant tackling a rhinoceros with its trunk, while Jahāṅgir, on the second elephant, gets his gun ready for the kill. Although the two rhinoceroses in this miniature are not accurately drawn there is no legendary content left in this or in any other Mughal miniature, nor is there any doubt about the identity of the beast as had been the case in most of the Shāh-nāmah illustrations.

\textsuperscript{30} For the text see 282, p. 762; for the miniature, 115, pl. 29B; another miniature showing the same subject is to be found in the Zafar-nāmah of 1533 (939) in the India Office Library (43, pl. 91A).

\textsuperscript{31} 282, p. 762; 32, vol. i, p. 378.

\textsuperscript{32} No. 10,596, fol. 21b, unpublished.

\textsuperscript{33} Kühnel connects this miniature with a passage in the emperor’s memoirs according to which he killed the rhinoceros while riding on an elephant. He hit it with a single bullet near the ear (156, p. 419). Jahāngir states that “it has often happened... that powerful men—good shots with the bow—have shot twenty or thirty arrows at them and not killed” (144, vol. 2, p. 270). Kühnel is right in pointing out that the hunted animal is probably not a wolf (gurg) as Rogers and Beveridge, the English translators of the memoirs say, but a rhinoceros (karg).
THE TAMED KARKADANN

Our fourth iconographic type consists of the karkadann in conjunction with other animals and always in a subdued state. The earliest picture of this type known to me is from a double frontispiece of the Mongol period formerly in the Yıldız Library of Istanbul. On the right page is an enthroned ruler surrounded by his courtiers. The opposite page shows in the upper register a triumphal or tributary procession with various animals, among them an elephant followed by a pacified, winged karkadann; the lower register shows the royal horse with a groom, falconers, and other royal servants. While the identity of the ruler on these two detached pages cannot be established with the data so far published, other miniatures do not present difficulties in this respect.

One large group of paintings shows the enthroned Sulaimān, the biblical Solomon, surrounded by the animals and demons under his command; sometimes he is in the company of Bilqīs, the Queen of Sheba, or she is seen on her trip to him surrounded by many of the king's animals. While the frontispiece of a Nizāmī manuscript of 1513 (919) includes as a traveling companion of Bilqīs a karkadann which looks like a hybrid of giraffe and deer (pl. 34), a winged equine karkadann is to be seen in a court scene of Sulaimān and Bilqīs surrounded by animals on the double frontispiece of a Shāhnāmah dated 1497-1504 (902-910), formerly in the Schulz collection (pl. 35). In the sixteenth-century examples of

1 233, vol. 1, pl. 3.
2 It could be either the king for whom the manuscript was executed, or the one for whom the text was originally composed.
3 In the possession of H. Kevorkian, New York. The manuscript was written by Murāhid al-dīn Muḥammad in Shirāz. The right part of the frontispiece showing Sulaimān is not preserved.
4 239, vol. 2, pl. 62. The left portion is now in the collection of Dr. E. Kahler, Princeton, N. J. The miniature shows the elephant not only associated with the karkadann but also with its other great enemy, the snake (cf. 5, fol. 1ab: "... his, i.e., the elephant's, bitter enmity is for the snake"); see also 191, p. 33,
the "Enthroned Sulaimān" the rhinoceros is usually represented as a bovine animal with a small curved horn placed approximately in the correct position on its nose. The tamed, even domesticated nature of the animal is exemplified in a miniature of the Vever collection in which the rhinoceros is shown not only standing calmly with all the other creatures, but with strings of bells around its neck and a saddlecloth on its back, and is thus placed in a category with the tame elephant. In keeping with the general character of the Indian art of the period, some Mughal miniatures of Sulaimān with his hosts present the rhinoceros in a more realistic fashion.

Noah was another Biblical figure who, in the ark, came in contact with the rhinoceros. Since in Persian miniatures the ark is usually rendered in a summary fashion, no painting has so far come to light which shows the animal. A pair of peaceful rhinoceroses is, however, to be found in the rear of the lowest deck of an ark in a Mughal miniature of the late sixteenth century which was recently acquired by the Freer Gallery of Art.

A fourth variety of the iconographic type is represented by miniatures illustrating the story of Nizāmi's Iskandar-nāmah in which Plato hypnotizes animals with the help of a wonder organ. So far no Persian miniature of this subject has come to my attention, but there is at least one fine Mughal painting

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translation p. 23. Elephant-devouring serpents on Java are mentioned in Ibn Khordādbeh (98, vol. 1, p. 26). For classical and later Western representation of the battle between the elephant and the serpent see 119, pp. 159-170.

49, pl. 75; 180, vol. 1, pl. 15.

180, vol. 2, pl. 90. A saddlecloth is also found on the bovine karkadann lifting the elephant on its horn which is the Walters Art Gallery ms. W.593 (pl. 22), and in the Freer al-Qazwini manuscript (pl. 14, lower). This is perhaps due to the influence of the iconographic type of the tamed karkadann popular in the sixteenth century; another possible explanation would be that the saddlecloth was put on rhinoceroses used in India for staged fights with elephants (see below, p. 88). This second explanation seems, however, not very likely.

7 Cf. a miniature of the Akbar period in the possession of N. M. Heeramaneck, New York.

8 No. 43.8. The miniature is reproduced, 73, p. 24.

9 33, pp. 78-80.
of the Akbar period in which the rhinoceros, like all the other represented animals, is hypnotized by the soothing strains of the organ played by the Greek philosopher.\textsuperscript{10}

In all these miniatures the karkadann is tamed through the influence of an overpowering personality and no longer shows any animosity toward the surrounding animals. However, even in this iconographic type the traditions associated with the usual karkadann are so strong that it is sometimes shown in close proximity to the elephant.

With these examples in mind every student of Persian iconography is naturally inclined to think of miniatures showing the love-crazed poet Majnūn surrounded by antelopes, deer, rabbits, lions, and tigers. Here strict personal authority is of course not responsible for the subduing of ferocious beasts—it is compassion which leads tame and wild animals alike to console a forlorn and unhappy man. The subject was popular for Nizāmī illustrations in Persia as well as in seventeenth- and eighteenth-century India, and since the Indian artist delighted in giving a large and varied number of animals, it is reasonable to inquire whether or not the rhinoceros might be found in the peaceful company around the poet. So far only two examples of this type have turned up. The first, in the possession of Nasli Heeramaneck, of New York, is probably from the late Akbar period (about 1600) and shows a vast assembly of animals which in this case surround Majnūn and Lailā who has come to see her lover at last. Among the host of visitors one notices two rhinoceroses which, though not accurately rendered, are easily identified (pl. 36). The other miniature, now in the collection of Chérif Sabry Pasha, seems to be from the eighteenth century. Here the scene is much reduced and only a lion and a rhinoceros are portrayed with the famous lover.\textsuperscript{11} It is worth while noting that this, a fairly recent example, coming as it does from the country of origin of the rhinoceros, still shows the animal in the tradi-

\textsuperscript{10} 182, vol. 2, pl. 181. The painter of this Nizāmī manuscript in the Dyson Perrins collection is Madbū Khānahzād.

\textsuperscript{11} 224, pp. 151-152, No. 116 and pl. 49.
tional bovine shape, although with a horn now properly placed on its nose.

There are finally two further groups of representations of the rhinoceros which are variants of the type so far described. In these pictures the karkadann is surrounded by other animals which it leaves in peace though no superior power is present to keep it in check. One small group is peculiarly Indian and shows "the Animal Kingdom" or at least some outstanding examples of the native Indian fauna. The Freer Gallery of Art owns a delicately drawn miniature of the early seventeenth century, which presents in a skillful composition a large array of animals among which two fairly realistic rhinoceroses are to be found (pl. 37). Less ambitious in scope and artistic intention is a miniature of about 1700 in the Islamic Department of the Berlin Museum where a much smaller number of quadrupeds, including a rhinoceros, is arranged in a decorative manner.

A combination of animal heads which, at times, includes that of a single-horned creature, is the main feature of the "talking tree" or of the tree on the Island of Wāqwāq. Thus a miniature of the Wāqwāq Island from an al-Qazwini manuscript in the Boston Museum of Fine Arts shows, on a tree, amongst the strange "fruits" which make the wāqwāq sound, the head of the karkadann; in spite of its bovine shape, it is characterized as a rhinoceros by the curved horn on its nose (pl. 38). A miniature in a late fifteenth-century Shāh-nāmah in the Bodleian Library illustrates the "talking tree" which tells Iskandar of his approaching death; in this case the head of the unicorn is shaped like a dragon and shows, in its Far Eastern aspect, no relationship to any of the standard types known in the Muslim world.

This legendary tree is usually thought to be reflected in

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11 No. 45.29. Size: 233 x 139 mm., unpublished.
12 39, pl. 19.
13 52, pp. 22-23, No. 24a, pl. 13a.
14 29, pl. 38. A similar animal head is found on the tree of the Island of Wāqwāq in an al-Qazwini manuscript of 1545 (952) of the A. Chester Beatty collection (29, pl. 37a).
conventionalized scroll or tree designs with animal heads, such as are to be found as decorations on a number of medieval and postmedieval objects.\textsuperscript{18} Without wanting to enter here into a discussion as to whether these compositions are actually connected with the "talking tree," it still seems appropriate to refer at this point to the one example so far found which includes unicorns: the plaque from the Madrasa Muqaddamiya in Aleppo (pl. 6). As in the case of all other designs the animal heads are at the end of the scrolls which cover the surface and which, in this case, are arranged in strict symmetry, thus creating the impression of a tree.

\textsuperscript{18} 159, pp. 26 ff.; 12, pp. 69-72.
ADDITIONAL FEATURES OF THE KARKADANN

A fuller understanding not only of the physical form and the various iconographic settings of the karkadann, but also of the ideas and legends associated with it, calls for elaboration of our account of the animal. After all, Marvazí said in the early twelfth century: “People say many things about this animal,” and this makes it imperative to investigate its lore further.

According to al-Jāḥiẓ, the karkadann belongs to a numerically small species, since the dam has but few offspring and her period of gestation is as long as that of the elephant.¹ The karkadann was even thought to be the least abundant animal.² The Manāf substantiates this by asserting that the short-lived dam has only one offspring during her lifetime. The male, however, seems to have a better life expectancy—at least in the opinion of al-Qazwini who gives him a life span of 700 years. Since, according to the same author, no weapon has any effect on it and no animal can withstand it, violent death comes to the male animal only as a sequel to its fight with the elephant.

In strange contrast to the alleged rarity of the karkadann is the great amount of information supplied by Muslim authors which even includes the age when it reaches sexual maturity.³ Its scarcity is, however, a good reason for the high prices which some of the products derived from it brought on the market. Its most precious part is the horn. Al-Jāḥiẓ is the

¹ I45, vol. 7, p. 40. Al-Jāḥiẓ, as recorded by al-Masʿūdi (r24, vol. 1, p. 387), thinks that the period of gestation of the karkadann is 7 years, al-Qazwini and al-Iṣkāḥi (99, p. 267, footnote 1) mention 3, and al-Gharnāṭī, 4 years. Modern zoologists speak of 17 to 18 months (53, vol. 12, p. 615; 48, p. 474). The gestation period of the African and Indian elephant is estimated by various authorities to last between 18 and 23 months (243, vol. 1, p. 373).

² Marvazí, quoting al-Jāḥiẓ (6, fol. 194b; 7, fol. 88b). See also 217, vol. 1, p. 402, and 5, fol. 14b.

³ This information is provided by al-Qazwini who sets the date after 50 years of age.
first Muslim writer to refer to certain of its innate qualities by stating that it is harder and nobler than the tusks of the elephant. Since the horn of the rhinoceros is actually only agglutinated hair, it cannot, of course, be maintained that it is harder than ivory, but this assertion points at once to the exaggerated attributes of this part of the body. The *Akhbār al-Ṣīn wa’l-Hind* is the first of a long line of sources to inform us that the Chinese used it for making highly valued girdles. The quality of the horn depended on the pattern, which was said to appear as a light figure of a man, peacock, fish, or other animal on a dark background and which comes out when the horn is polished. Most authors from Ibn Khordādhbeh on agree that the figures are to be found in the inside of the horn after it has been split. Al-Mas‘ūdī gives perhaps the most extensive account of these girdles. According to him the horn is usually white and shows black figures, although sometimes the designs stand out in white against a black background. "With the help of leather straps girdles are made of these horns on the model of gold and silver ornaments. The emperors and grandees of China value this adornment above everything else so that they pay as much as two and

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5 According to Ibrāhīm b. Waṣīf-Shāh (98, vol. 1, p. 160). The date of this author is given differently. Ferrand, following Seybold (98, vol. 1, p. 137), assumes that he wrote about A.D. 1000 and in any case before 1031 (422). Brockelmann stated formerly (57, vol. 1, p. 355) that he lived toward the end of the thirteenth (seventh) century, while later on he attributed his work to a period before 1209 (606) (57, suppl. vol. 1, p. 574).

6 136, p. 47; 98, vol. 1, p. 29. The authors who speak of figures in the split horn include Ibn Faḍlān, al-Idrisī, al-Gharnāṭī, Ibn Bukhtishū’, and al-Damiri. Passages in al-Mas‘ūdī and in the *Arabian Nights* seem to reflect the same belief. In one place al-Damiri quotes the Spaniard Abū ‘Umar ibn ‘Abd al-Barr (died in 1071 [463]) that the figures come out after the horn has been cut off.

7 184, vol. 1, pp. 386-387. His list of figures on the horn includes the rhinoceros itself, and he mentions also "other animals of its region." Al-Nādīm’s informant told him that the most frequent designs were those of flies and of fish (192, vol. 1, p. 349). Ahmad Ṭūsī mentions also a lion (134, p. 77, footnote). Al-Gharnāṭī adds to the repertory a gazelle, different kinds of birds and trees, besides other "wonderful things" not specifically named. Al-Damiri follows him as usual.
even four thousand dinārs. The clasps are of gold and the whole is of extraordinary beauty and solidity. Sometimes one applies different inlays of precious stones with long golden nails." Al-Damiri adds a further detail when he says that thin flat pieces of the horn are applied to the girdle.

The statements of the Arab authors are fully borne out by the Chinese writers, who inform us about the use of the horn in the official attire of the T'ang period. In addition, there are fortunately still extant several fragments of Chinese leather girdles with applications of thin plaques of rhinoceros horn, now preserved in the Shōsōin in Nara, which are only slightly earlier than the report in the Akhbār al-Ṣīn wa'l-Hind (pl. 39, left). None of these T'ang girdles has inlays of precious stones, but a silver clasp from one of them has come down to us.

In view of the large demand for the horn in China, it is not surprising to find that its price was as high as 3,000 to 4,000 mithqāls or dinārs of gold, and that Marvazi calls it the most valuable export article to the Far East. The price depended on the quality of the pattern and on the popularity of the material at a given time. Thus already in the middle

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8 i65, p. 142, footnote 4. Laufer questions the use of the horn in "official" girdles of the T'ang dynasty, an opinion first held by Bushell, and states that they were restricted to the use of princesses. Dr. Schuyler Cammann was kind enough to check this for me. He supplied the following information: "The T'ang History (Hsin T'ang shu) discussing the everyday dress or informal attire of officials says: '... first and second rank officials' belt plaques used gold, officials above the sixth rank (third to sixth) used rhinoceros horn, officials above the ninth rank (seventh to ninth) used silver, and common people used iron.' Meanwhile a reference in the T'ang dynastic statutes (T'ang hui yao) under the date of 710 A.D. says that for Imperial audiences and state banquets, first and second rank officials are permitted to wear (dress accessories of) jade or t'ung (tien) rhinoceros horn, while the third rank is permitted to wear carved rhinoceros horn or striped rhinoceros, or jade, etc. These references make it very clear that the rhinoceros horn was used as a precious substance on a par with gold and jade."

9 i47, vol. 1, pl. 20, and vol. 7, pl. 33, after which our plate is made. Detailed descriptions are given in Japanese and English.

10 After i47, vol. 1, pl. 20.


12 i89, Arabic p. 5, translation p. 17.
of the ninth century A.D. Ibn Khordadhbeh tells us that the price varied from 300 to 4,000 dinārs. Al-Nadim is the only writer who gives an explanation for a drop in the market price since he had the good fortune to have as informant a monk from Najrān, who in 987 (377) had returned from a visit to China and could give him a first-hand report about his experiences. This man told him that the price per ounce of horn had fallen from 5 minas of gold to 1 ounce of gold and even less. This drop was caused by a royal decree which abolished the custom of appearing with girdles of rhinoceros horn and required instead girdles of gold and similar costly material. Hence, following the law of supply and demand, the much-decreased demand had suddenly caused a depression in the valuable commodity.

There are some other exotic uses of the horn mentioned by Arab authors. According to the tenth-century Hidūd al-Ālam the chiefs of the Wāqwāq province of China “wear extremely precious necklaces of rhinoceros horn,” and Ibn Bukhtishū‘ tells us that the kings of China hang it on themselves against evil things. The Shōsoin again provides an example in the form of several small containers used as pendant ornaments, made from rhinoceros horn—one horn-shaped and the other consisting of two square boxes. They are combined with small amber and crystal balls (pl. 39, right). The same collection also contains a small fish-shaped

18. 192, vol. 1, p. 349, vol. 2, p. 184; 98, vol. 1, p. 130. Ferrand interpreted al-Nadim’s passage as referring to tribute in the form of rhinoceros horn, but the use of girdles with applied pieces of horn in Chinese court attire (see above, footnote 3) indicates that the text refers apparently to the latter. This is also the way in which the German editors of the Arabic text translated the passage (192, vol. 2, p. 184).

In view of the prices quoted by the medieval authors it is worth while noting that in 1935 the value of the horn on the Calcutta market was about half its weight in gold. A single horn retrieved from the poachers fetched 150 pounds and still higher prices have been known (241, p. 1229).

14. 129, p. 84. This is corroborated by al-Qazwini (217, vol. 2, p. 50, line 13) who states that the inhabitants of Sandābil (Kan-chou in the Kan-su Province) adorn themselves with “elephant and rhinoceros bone.” De Goeje already thought that this might be the horn of the rhinoceros, mounted in gold and worn as an amulet (178, p. 87).

18. 147, vol. 7, pl. 51; see also pl. 58a and 58b for other horn containers likewise square or horn-shaped. These containers are called gōsu in Japanese.
pendant of rhinoceros horn.\textsuperscript{16} Another usage for the horn was to apply it to thrones in thin pieces. Al-Gharnâṭî, followed by al-Damiri, does not specifically say where such thrones were made, but from the fact that he tells us about this custom in connection with the Chinese girdles, the inference is that it is used in the Far East. A more commonplace service rendered by the horn is first referred to by al-Birûnî, who tells us that it furnishes the material for the handles of knives. This use is mentioned by several other authors, even in modern times, and it must have been quite popular and widespread. Only one medieval source gives a more specific description of a particular feature of these handles. After having stated that the horn of one of the African species is white but for a black streak from the tip to the center of the base, Marvazi adds: "Skill is needed in sawing it so that each handle contains a black circle." Let us hope that we shall be fortunate enough one day to find a medieval Muslim knife or sword with a rhinoceros handle as described by the twelfth-century Persian author.

The \textit{Akhbār al-Ṣīn wa‘l-Hind} is the only source to give some information about the commercial transactions to procure the horns: "... they are bought in the State of Dharma\textsuperscript{17} with cowrie shells which are the currency of this land." Marvazi tells us of a man in Balkh who had imported the horn of the African species. The same author mentions also the export of the horn to China. Some come definitely from a certain region in India, but in another place he states that the port of export to China was Basra, which seems to point to the African horn.

The hide of the rhinoceros, too, is commercially used. According to al-Damiri it is worked into coats of mail against which weapons have no effect. Al-Mustawfi, moreover, mentions that leather belts which sell for 3,000 to 4,000 dinars are made "from the handsome cuirass of leather which it (the

\textsuperscript{16} I\textsuperscript{47}, vol. 10, pl. 36i. Modern Chinese regard the horn as a potent aphrodisiac (p. p. 377, 386, 387 and 395).

\textsuperscript{17} Apparently Bengal and Bihar (183, pp. 147-148; 17, pp. 52-53 and map 2).
karkadann) has around its middle." Since the quoted high price is the same as that for the celebrated Chinese belts made with horn plaques, it may be surmised that al-Mustawfi who alone mentions the leather variety, confused the two types. Various parts of the body served also as remedies or talismans. Thus its gall is used for fumigations to dispel evil smells, the left eye against the shaking fever and the stings of scorpions, while the right eye is a talisman against pains, jinns, and demons. The most effective part of the body is the horn and especially its legendary protuberance. It is a remedy against colic and labor pains, epilepsy, paralysis, and spasmodic contractions of muscles. It helps against the evil eye, unties knots, makes hot water cold, and prevents a horse from stumbling. Al-Qazwini demonstrated its powerful magic by telling a story according to which particles of the horn (or rather of its "knot") mixed with dust were scattered on a band of robbers, thereby preventing them from rising from their camp to plunder a caravan. The same author, followed by al-Mustawfi, mentions also that "When it is near poisoned food or drink, it nullifies (literally, breaks the strength of) poison." A variation of this notion is found in Ibn al-Wardi who speaks of knife handles made of the horn which in the presence of poisoned food become moist and agitated. While it is thus certain that the karkadann had magic properties, no religious connotation seems to have been connected with it. The pious Muslim was only concerned whether it

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18 Another possible explanation for the high price of the leather belts mentioned by al-Mustawfi would be that the Chinese girdles were made of rhinoceros hide. This assumption is disproved, however, by a girdle in the Shōsōin which is made of moleskin (147, vol. 1, notes to pl. 20).
19 Ibn Bukhtishū'.
20 Al-Qazwini, al-Damiri.
21 Al-Damiri.
22 Al-Qazwini, al-Damiri.
23 Al-Qazwini, al-Mustawfi, al-Damiri.
24 Al-Damiri.
25 Such religious connotations are sometimes found in the descriptions of animals. For instance, al-Mustawfi says of the silkworm: "This worm is a mighty example of the manifestation of the power of the Artificer with whom none may be compared, the Creator of 'Be, and it was,' who from the slime
was permissible to eat its meat or not.\textsuperscript{26} The interpretation of dreams in which the animal occurred pointed also to its purely secular character, since according to al-Damiri the karkadann is supposed to represent a powerful, tyrannical king or to indicate war and trickery. This seems like final proof that the karkadann represents an evil force.

If one were to summarize all the main thoughts which could have been in the minds of persons who saw the picture of such an animal, one could state: The karkadann is a very rare, large, and powerful animal of India and other distant countries. It is of evil and ferocious nature and quickly angered. It does not allow any other animal in its neighborhood and pursues and kills even the mightiest of them all, the elephant. Only kings of great magic power like Sulaimān could subdue it, and only heroes and mighty hunters were able to kill it. The outstanding part of its body is the horn on its forehead with which it kills the animals. Various designs are visible in this horn which in China is used for highly prized ornaments. It serves likewise as a powerful remedy and talisman. Thus the karkadann stands for fierceness, evil physical force, and magic power.

of such an insignificant worm produces such elegant garments..." (191, p. 59, translation p. 41); or of the peacock: "In every one of its feathers are present red, yellow, green, gold, blue, and other colors such that the hand of the painter cannot portray a picture of the like. And glory be to Him! How great is His majesty, and how wide His power, and how perspicuous His proof!" (192, p. 109, translation p. 77).

\textsuperscript{26} The author of the \textit{Akhbār al-Ṣin wa'l-Hind} are the flesh and al-Mas'ūdī speaks of it as permissible food since it is a kind of buffalo (184, vol. 1, p. 386). Al-Damiri quotes al-Zamakhshari's opinion in this respect: "The evident factor which speaks for its lawfulness is that the animal eats trees and is a ruminant. Its being an enemy of man does not preclude it from being eaten because the hyena treats man as an enemy and it is eaten. But if it were proved that it is born from the horse and the elephant, it would be forbidden. And this is remote." Modern hunters have reported that the meat of the rhinoceros is quite palatable (258, p. 147).
OTHER UNICORNS IN MUSLIM LITERATURE

During the preceding discussion of the karkadann we have at various times had occasion to refer to animals which either became fused with the karkadann or split off from it and turned into new species. We therefore have to say something more about these other creatures.

Al-Jawhari, Ibn Bukhtishū, and al-Damiri state in their discussion of the karkadann that the Arabs call it ḥarīsh (actually ḥ·rysh)² or, vice versa, that the ḥarish is the karkadann.


2 with or without the article is the spelling in most manuscripts and published texts. Kraus (153, vol. 2, p. 67, footnote 15), Stephenson in his translation of al-Mustawfi (191, p. 28) and Jayakar in his translation of al-Damiri (78, vol. 1, p. 325) transliterate it as ḥarīsh, and this is also the form in 9, fol. 89b, where full vocalization is given. That the correct form of the name was doubtful in the Middle Ages is indicated by the many variants. The Ibn Bukhtishū manuscript in the Bibliothèque Nationale has al-ḥarīs, while the Morgan Manāfī writes jurīsh (with a vowel for the first consonant, but with no diacritical points for the letter yā); the two al-Qazwini manuscripts in the Beatty collection, those of Mr. Kevorkian, the Berlin Museum, and of the Freer Gallery (dated 1789) have j·rysh which is also the spelling of the Wüstenfeld edition of the Arabic text (217, vol. 1, p. 392). An al-Qazwini manuscript dated 1570 (978) in the Harvard College Library and another dated 1664 (1075) belonging to H. Kevorkian have قوس qws.

As has already been pointed out by Laufer (165, p. 124, footnote 1) harīsh may be connected with the following statement by Cosmas Indicopleustes on the rhinoceros: "The Ethiopians in their own dialect call the rhinoceros arou or harisi aspirating the alpha of the latter word, and adding risi. By arou they designate the beast as such and by arisi ploughing, giving him this name from the shape about the nostrils, and also from the use to which his hide is turned." (76, p. 358).

The Babylonian Talmud (Huillin 59b) knows of a unicorn called שִׁבֵּל which is described as "the hart of the forest Ḥlai" (69). The Aramic name might explain the enigmatic قوس قوس as a garbled form of قوس قوس which like שִׁבֵּל (69) would then be the last part of the Greek words μυόκερας and μοῦδερας. Ibn Bukhtishū (3, fol. 2B.A) states that the Syriac-speaking people call the karkadann-harīsh 姮ς 姮ς, which reproduces the Syriac rayma corresponding to the Hebrew ṛṭʾm. The Princeton University Library manuscript does not
Actually they are two quite distinct animals, although both are unicorns. The first writer to speak about the ḥarish as a separate animal is apparently al-Tawḥīdī who says: "It is a certain small animal of the size of a kid or lamb and very quiet, but it has such strength of body and swiftness of motion as to baffle a hunter. It has in the middle of its head a solid and straight horn with which it strikes all animals. Nothing can subdue it. It is necessary to use a stratagem for seizing it, namely to expose to its view a young virgin or a young girl. When it sees her, it jumps into her arms as though intending to suck her milk, which is a natural mark of affection ingrained in its nature. When it jumps into her arms it sucks her breast, though there is no milk in them, with such a gusto that it is overpowered by intoxication like the intoxication from wine. While it is in that state the hunter comes and ties it up firmly with a rope being itself motionless on account of this dodge."* The Manāfi' * overcomes the difficulty inherent in the preceding account in which the ḥarish is sucking the milkless breasts of a virgin. It introduces instead of the virgin a beautiful girl from a brothel ( دختر خانه) who tempts the animal with her breasts. The animal sucks them for about an hour and then falls asleep from the milk.

have rīmā but basrīmā. F. Rosenthal kindly suggested to me that the bā is probably a mistaken preposition taken over from some Syriac context, while the sin is just a misinterpretation of an overlong space between the bā and the rā in the Arabic script.

The Arabic translation of the Physiologus refers to the name of the animal which has all the characteristic features of the ḥarish as دریا (دايیا). As F. Rosenthal suggests, this may be merely a corruption of ریما. 

* The passage is quoted by al-Damiri (77, vol. 1, p. 285; 78, vol. 1, p. 525). F. Rosenthal informs me that it is taken from al-Tawḥīdī (255, vol. 1, p. 184) as was also recognized by Kraus (153, vol. 2 p. 67, footnote 15). Ahmad Ṭūnī likewise tells the story of the hunt with the help of a virgin. The animal in this case is, however, the karkadānu (134, p. 77, footnote 1). Zeki Validi Togan translates كنیر کی دوره in the account of the strategem as "Säugling weiblichen Geschlechts," but, judging from the parallel texts, it probably means "a virgin girl." Ahmad Ṭūnī gives a variant of the account by stating that when the rhinoceros smells the girl, it faints and so do all the other karkadānu in the steppe.

* g. fol. 54a.
The story ends with the exclamation “Allah knows best,” thus expressing a certain incredulity about the story. It is probably for this reason that al-Qazwini leaves out the story of the temptress; he contributes, however, to the lore of the animal when he states that it is found in the swamps of Sistan and the land of the Bulgars and he finishes up with giving the medicinal properties of its body, thus exchanging the folkloristic tale for a scientific myth. The story of the girl and the Ħarîsh is given by Ibn Bukhtishu and also by ‘Awfi (as quoted by al-Mustawfi) who calls the animal qaṭā (قَطَّا). ‘Awfi’s passage and also the Manâfi’ dissent from the usual belief in the single horn by stating that the animal has two horns on its forehead. It is for this reason that we see a small kidlike animal with two horns sucking the breasts of a young woman in the miniature illustrating the chapter of the Ħarîsh in the Morgan Manâfi’ manuscript (pl. 40, lower). No other representation of the peculiar hunt of the Ħarîsh has so far turned up. The usual iconographic type of the animal is the isolated figure of a goat- or antelope-like creature with one horn on its forehead such as those found in the fifteenth- and sixteenth-century al-Qazwini manuscripts in the Kevorkian and Beatty collections (pl. 41, middle right and lower). A more monsterlike Ħarîsh is included in the Berlin

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5 217, vol. I, p. 392. Jacob (141, pp. 166-167) identifies the fleet-footed animal with the saiga antelope of southern Russia the adult specimens of which cannot be overtaken by horses or greyhounds.

6 “When a man suffering from quinsy drinks its blood with hot water, his obstruction will come up at once. Its meat cooked with the centaury plant, when eaten by a man suffering from colic, will cure him at once. When his ankle-bone is burnt and its ashes with its fat are placed on the bleeding artery, the pain stops . . .” This medical lore is repeated by al-Mustawfi (191, p. 41, translation p. 29) and al-Damiri.

7 Under the heading إلكركند.

8 191, pp. 48-49, translation pp. 33-34. The vocalization of the animal’s name is uncertain.

9 In the table of contents of ‘Awfi’s Jawāmi’ al-Hikayât, by Muḥammad Niṣâmu’ d-din (198, p. 257), a goatlike animal is mentioned which is hunted with the help of a girl whose breast it sucks. It is obviously the same animal, but in contradiction to the information given by al-Mustawfi the text says that it has a single horn.
manuscript (pl. 41, middle left), where it is shown walking on its hind legs; this follows the al-Qazwini text which states that the animal does most of its running on two feet. In the Sarre manuscript the ḥarish resembles the painting of the wolf (pl. 41, upper). If this is not a mere coincidence, the choice of the bodily form may have been conditioned by the wolf monsters in the Shāh-nāmah. Another, more clearly defined influence from a different iconographic source is to be found in the al-Qazwini manuscript of the Princeton University Library. Here the miniature of two snakes, one climbing up a tree and devouring young birds and the other coming out of a rock, in no way follows the text about the harish it purports to illustrate (pl. 40, upper). This can, however, be explained by one of al-Jawhari’s two identifications of the animal which are quoted in al-Damiri’s text. While the second describes the ḥarish as a karkadann with the claws of a lion, the first regards it as “a certain speckled species of serpent.” The painter of the Princeton manuscript, or rather the originator of the iconographic type which he copied, must have preferred this dissenting opinion of al-Jawhari and the illustration to go with it. In any event, we have here—just as in the case of the sharav of the Berlin al-Qazwini manuscript which claimed to be a karkadann—the substitution of a different animal from another text for the usual iconographic type.

Another animal which becomes separated from the karkadann to lead an existence of its own is the sinād. As we have pointed out before (pp. 15 f.), it shares with the karkadann the peculiar feature that the young one puts its head out of its mother’s womb before it is born to find outside nourishment (pl. 16, lower). Al-Jāḥiẓ in his account of the karkadann is the first to report this yarn on Indian authority.

10 Disregarding the horn, the ḥarish and the wolf in the “Sarre al-Qazwini manuscript” differ mainly in color, the ḥarish being reddish brown, while the wolf is dark gray.
11 The Turkish al-Qazwini manuscript in the Walters Art Gallery dated 1709 (1121) likewise shows the influence of another text. The ḥarish is shown as a two-horned goat, which indicates that the iconography goes back to such versions as the Mānāf-i ḥayaqdn or the Nuzhat al-Qulūb of al-Mustawfi.
I. The Unicorn—Ettinghausen

al-Birūnī—as quoted in al-Qazwini's chapter on the sinād—applies it to an unnamed Indian animal.\textsuperscript{13} Al-Birūnī tells us, too, that the birth takes place only after the young one is strong enough to run away from its mother because the very rough tongue of the dam would separate the flesh from the bones of the calf when licked after the birth.\textsuperscript{14} This story is then repeated by al-Qazwini, al-Mustawfi,\textsuperscript{15} and al-Damiri \textsuperscript{16} in their chapters on the sinād. Marvazi, however, mentions the licking episode also in the case of the karkadann after he has expressed his doubts about a story in which he alleges that the karkadann devours its offspring. But he states that the licking scene is true and adds that the tongue of the mother is sharper than a file.\textsuperscript{17} Al-Gharnāṭi even speaks of a big thorn on the tongue.\textsuperscript{18} The prenatal activity of the foetus and the peculiar character of the tongue are therefore associated both with the karkadann and the sinād.\textsuperscript{19} Although al-Qazwini and his followers, al-Mustawfi and al-Damiri, stated that the sinād is shaped like an elephant (see p. 16 and pl. 16, lower), the knowledge that its peculiarities are also those of the karkadann induced the illustrator of the Princeton al-Qazwini manuscript to give to the sinād the traditional features of the karkadann (pl. 42, center). First of all, this particular sinād is not elephantine, but has the bovine shape usually given to the karkadann. On the nose

\textsuperscript{13} 217, vol. i, p. 396.
\textsuperscript{14} Al-Jāḥiz tells only that the karkadann can run fast after its birth and is thus able to fend for itself; there is in this connection no reference to the danger of its being licked by its mother.
\textsuperscript{15} 191, p. 26, translation p. 18.
\textsuperscript{17} 5, fol. 134b; 7, fol. 88b.
\textsuperscript{18} This account is copied by al-Damiri. Al-Gharnāṭi (again followed by al-Damiri) informs us also that the kings of China torture people by having them licked by the karkadann, which separates the flesh from the bone.
\textsuperscript{19} The belief that the young rhinoceros runs away from its mother right after its birth is just the opposite of the actual condition. The calf of the white rhinoceros accompanies its dam until it is practically full-grown, that is, until the birth of the next calf (243, vol. 1, p. 434; 162, p. 88). Hunters have reported that the calf remains with its dead mother up to 2 days (25, p. 306). Photographs of a female rhinoceros followed by her calf have been repeatedly published (38, pp. 143 and 147; 97, p. 174).
of the dam are placed the horn of a rhinoceros as in the Princeton karkadann miniature (pl. 15, right) and the additional long, straight horn on the forehead (but without the grooves of the narwhal tusk); and finally, since some authors point out that the horn, teeth, and hoofs of the karkadann grow while the embryo is in the mother’s womb, these parts of the body were likewise given to the young sinād. The scene itself shows the mother reclining on the ground after having given birth and the young calf running away with great speed. A similar spectacle has so far not been found in the iconography of the karkadann, although the literary sources would make it theoretically possible.

Another type of unicorn is called شاهدوار shādahāvār 21 or آراس āras 22 which, according to al-Qazwini is to be found in the remotest regions of Rūm. On its single horn are said to be 42 hollow branches. They form a kind of Aeolian flute because the wind produces cheerful or plaintive sounds when

20 Stated in the Manāfī‘-i ḥayavān and by al-Ibshihi and al-Damiri. This has been confirmed by contemporary zoologists as far as hoofs are concerned (53, vol. 12, p. 616), but the newly born animal has no teeth and there is only a smooth, rounded hard boss for the base of the horn (59, p. 433).

21 This is the spelling in the “Sarre al-Qazwini manuscript.” شاهدوئار shādāvār, as given in the Wüstenfeld edition (217, vol. 1, p. 398), is also to be found in the fifteenth-century al-Qazwini manuscript of the Berlin Museum, and the two Beatty manuscripts. However, the al-Damiri text has شاهور shāhōr (77, vol. 2, p. 48) and Jayakar transcribes it therefore as shād-hawār (78, vol. 2, p. 97). The form سادوار sadāvār is to be found in the Kevorkian manuscript (fifteenth century) and the Princeton University manuscript.

22 The name occurs first in the early tenth century in the works attributed to Jābir b. Ḥayyān, the alchemist (153, vol. 3, p. 67). Kraus transliterates it as āras and assumes it to be derived from Greek ἄρας oryx, which according to Aristotle was single-horned (27, book 2, chapter 1, p. 499b, line 19). The Wüstenfeld edition of al-Qazwini has آراس āras (217, vol. 1, p. 398). The fifteenth-century al-Qazwini manuscript of Mr. Kevorkian has آرس āres. We follow the transliteration of Kraus.

Without wanting to stress the point (since it may be a mere coincidence) it can be pointed out that the name of the Angolan or black-faced impala antelope in Bushman is āras (243, vol. 2, p. 557).

An early treatise on the properties of the horn of the āras attributed to Jābir b. Ḥayyān is, unfortunately, lost (153, vol. 1, p. 154, No. 1994).
passing through them. These are so pleasant that other animals are attracted by it. This yarn is first found in the writings attributed to Jābir b. Haiyān about 900 A.D.\textsuperscript{24} Al-Damirī increases the number of ramifications on the horn from 42 to 72 and al-Mustawfī makes the animal into a fierce carnivore which chooses its prey amongst the animals which gather around it.\textsuperscript{25} Al-Mustawfī may not have invented this fiendish trait of the shādhahvār, since he could have transferred it from the sirānīs which has 12 orifices in its snout and produces a flutelike sound when drawing in its breath. In this case, too, animals gather around the monster eagerly listening to its sound before they are captured and eaten.\textsuperscript{26} As noticed before, the transfer of a curious feature from one fabulous animal to another is quite common in animal lore.

The earliest illustration of this “unicorn” that has come to my knowledge is in the “Sarre al-Qazwini manuscript.” It represents an antelopelike animal with a tremendous horn from which jut out 14 short branches projecting in alternate directions (pl. 42, upper). Just as al-Damirī increases the number of ramifications of the horn given earlier by al-Qazwini, so does the painter who copied the “Sarre manuscript” and produced the volume which is now in the Beatty collection. In his miniature the horn has grown so long that

\textsuperscript{24} These writings state also that Plato was supposed to have captured the āras, a feature not reported in the Greek sources (153, vol. 2, p. 68).

\textsuperscript{25} 191, pp. 44-45, translation p. 31. Here the text of the ‘Ajīb al-makhlūqāt is, however, interpreted to mean that the animal has 2 horns, each carrying 21 hollow branches.

\textsuperscript{26} 191, p. 44, translation p. 31, which gives the erroneous form سیوانس siwānis. The correct spelling can be inferred from the fact that the story is taken over from al-Qazwini (217, vol. 1, pp. 397-398) where the animal is called سیرانس sirānīs. Furthermore, G. Jacob (141, p. 167) has shown that the sirānīs is the Greek siren; he also followed G. Hoffmann in pointing to the connection between sirānīs and the sirānās in the Syriac Physiologus (see 207, p. 51, No. 38, footnote 1). The sirānās is described as a sea animal with seven openings in its mouth into which it places the seven toes of its feet when it wants to sing. Then all the other animals gather to listen. A long beak with many holes from which different notes emanate is also to be found in the lore of the ققنس qaqnus, “phoenix” (191, p. 119, translation p. 86), an Indian bird whose name comes from Greek κύκνος “swan” (F. Rosenthal).
at 17 points short branches come out in opposite directions. The horn of the animals in the al-Qazwīnī manuscripts in the collection of Mr. Kevorkian and the Harvard College Library show no branches, only a great many holes (pl. 42, lower left). The Berlin copy of the same text shows an animal in whose horn neither branches nor holes are indicated, thus demonstrating in one more instance how in this manuscript the iconographic exactitude has become weakened (pl. 42, lower right). The first painting to show the shādahāhvār surrounded by intently listening animals is in the al-Qazwīnī manuscript of 1545 (952) in the Beatty collection (pl. 43, lower). In this case the antelope-like animal carries an enormous horn, now curved, which has both hollow branches and holes. The Princeton al-Qazwīnī manuscript illustrates the same scene, but gives up the traditional antelope-like appearance of the shādahāhvār; instead one finds a fantastic leonine animal derived from the Chinese hsieh-chai (pl. 42, upper).

A fifth quadruped unicorn mentioned by Muslim writers is much smaller than the others so far mentioned, being a yellow hare with a single black horn on its head. Its name is al-miʿrāj. According to al-Qazwīnī it was given to Iskandar by the inhabitants of the Sea-Serpent Island (Jazirat al-Tinnin) in the Indian Ocean after he had killed the serpent. In spite of its small size even the miʿrāj has, apart from its single horn, an important feature in common with the karkadān, namely, that every wild animal runs away from it when it sees it. Ferociousness seems altogether the foremost feature shared by all the Muslim unicorns. The "Sarre al-Qazwīnī manuscript" contains a miniature of the animal which closely follows the details given in the text (pl. 44, lower). In contrast to it the often not-too-specific Berlin manuscript shows

27 It will be recalled that it was this manuscript which substituted the sharav for the karkadān.

28 The hsieh-chai is a white lionlike monster with a single horn. It should be distinguished from the ch'i-lin and the pai-tse (68, p. 108 and figs. 4 a-c).

a hybrid animal which looks more like a fierce hound than a hare (pl. 44, upper).  

The "minor unicorns" described in this chapter have so far been found only in purely scientific texts. Since their folkloristic and literary interest was apparently limited, they did not pass on into the larger stage of belles-lettres and they never gained wider popular appeal. The unicorns in Muslim art can therefore be assumed to represent, in practically all cases, the various versions of the karkadann. The validity of this last assertion will, of course, become much more obvious if it can be shown that a medieval Muslim readily identified a representation of a unicorn as that of a karkadann. Fortunately we can adduce such proof. When in the beginning of the twelfth century Ibn al-Balkhi gives, in his treatise on Fars, an account of the remains of the palace of Persepolis known as the "Throne of Jamshid" (Takht-i Jamshid), he speaks also of the various well-known reliefs showing a king (or mythical hero) fighting wild beasts. This author describes an encounter with one of these animals, a horned monster combining the features of lion, scorpion, and griffin (pl. 31, right) in the following way: "Jamshid is represented . . . taking a karkadann by the horn while in his hand he holds a hunting knife which he has plunged into its belly."  

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30 One further unicorn, the bulān لابل، which is restricted to Turkestan has probably no iconographic significance, since it is unlikely that it was ever illustrated. According to the eleventh-century Mahmūd al-Kāshgārī this animal lives in the country of the Kipchak. At the tip of its horn is said to be a deep hole in which snow and rain accumulate. When the male animal is thirsty the female kneels down and lets him drink, and he does the same for his mate (173, vol. i, p. 346, lines 11-14; 58, p. 120).

31 In earlier investigations Sarre and Herzfeld called the animal-killer a king (232, pp. 134 ff.; 228, p. 13, pls. 16 and 17). More recently Professor Herzfeld has taken exception to this and has called the figure the ancient mythical hero Kršāspī (122, p. 257).

32 132, p. 127; 131, p. 27. Ibn al-Balkhi speaks in his account of a lion, a wild ass (گور) and a karkadann, all killed by Jamshid. Three such royal animal fights occur in the Palace of Darius, the tachara, where a lion, a bull (the "wild ass" of Ibn al-Balkhi), and a lion-scorpion-griffon with a long single horn, obviously the karkadann, are killed by the king. (232, p. 134; 228, pl. 16.) For various reasons these three reliefs seem to fit the description of Ibn al-Balkhi better than the four of the Palace of Hundred Columns which includes also
though this particular animal has not the slightest resemblance to a rhinoceros and is even totally different from the usual representations of a karkadann as we have analyzed them in earlier pages of this investigation, the fact that it is a quadruped monster with what appears to Ibn al-Balkhi to be a single horn on the forehead is proof enough to suggest a karkadann. Judging from this experience one can assume that Ibn al-Balkhi would have likewise identified other unicorns on medieval Muslim objects or buildings as representations of the karkadann.

At this point, when our survey of the authentic Muslim unicorns has come to an end, some comments are appropriate on what one might call the "apocryphal" unicorns. There are first those which do not seem to occur as regular illustrations to the classic Muslim texts. The outstanding examples of this category are of Far Eastern inspiration. The most common type is derived from the Chinese ch'i-lin, a composite beast with a dragon's head, the body of a stag often covered with scales, and a bushy tail; they are to be found in the decorative arts of the Timurid and Safavid periods, particularly in the illuminations, bookbindings, and carpets. It is not impossible that they are sometimes meant to represent the karkadann, especially as the iconographic setting in a frontispiece of an al-Qazwini manuscript (pl. 17) allows such an interpretation. The fact remains, however, that none of the Timurid or Safavid copies of the 'Ajā'ib al-makhlūqāt so far found use the ch'i-lin as illustrations for the chapters on the karkadann or for any of the other unicorns. Since the Persian late sixteenth- or seventeenth-century Cosmography of the Walters Art Gallery uses a ch'i-lin-like animal in the water to represent the "sea ox" or "water bull," it would appear that the Chinese creature does not seem to have a fixed counterpart in Islamic zoology.

Nevertheless the ch'i-lin was, together with other Chinese

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a scene with a lion-bird-griffon (238, pp. 135-138; 228 pl. 17). Plate 31, right, illustrates the relief in the south doorway of the west wall in Darius's palace. I owe the photograph to the kindness of Dr. Erich F. Schmidt.

38 1, fol. 182b.
monsters, rather common in the Islamic repertory. In certain instances one can even see why the artist chose it for a specific setting. To quote two examples: the scene, frequently found in sixteenth-century art, of a lion attacking a bull or stag, derives from the motif of a lion killing a bull which may be found in the staircase reliefs of Persepolis.\textsuperscript{34} In the Achaemenian representations the victim is given in strict profile so that only one horn shows. This feature must have struck the imagination of a Turkish artist specializing in black and white line drawings. Since he employed this technique in imitation of Chinese ink paintings and used as the left part of his composition a Chinese dragon (lung) it was only natural that he substituted a Chinese unicorn for what looks like a unicorn in the traditional Persian design (pl. 45).\textsuperscript{35} This change was possible because this artist was mainly interested in beauty of line and of design as such, and not in literal rendition of a subject.

Our second example is the fight between the ch'i-lin and the fêng-huang (phoenix), occurring in more or less stylized form in the art of Persian books of the sixteenth century\textsuperscript{36} and on some Caucasian dragon rugs of the following century.\textsuperscript{37} In trying to explain this scene one could point to the Manâfi‘i hayavân which states that the karkadann is one of the victims of the giant bird simurgh.\textsuperscript{38} This text is, however, rare and the myth is so uncommon that it can hardly be taken as the source for the motif of a bird descending on a unicorn. Neither does Chinese art help us to find the proper interpretation. There the fêng-huang and ch'i-lin are not regarded as mutually antagonistic and they are only rarely placed together in a design. Furthermore, the earliest example—a dish of the K'ang Hsi period (1662-1722)\textsuperscript{39}—in which I found the bird swooping down on the fabulous quadruped is later than the

\textsuperscript{34} 228, pl. 21.
\textsuperscript{35} Freer Gallery of Art, No. 48.17.
\textsuperscript{36} 16, fig. 11.
\textsuperscript{37} 265, vol. 2, pl. 3; 257, No. 4, fig. 2.
\textsuperscript{38} 5, fol. 55b.
\textsuperscript{39} 224, pl. 44, fig. 3. The two animals appear already on the opposite sides of a blue and white vase of about 1400, but no obvious connection between the two seems to exist (158, pl. 27).
earliest known Persian examples. It seems therefore not very likely (though not impossible) that the prototype of the Muslim scene is Chinese, although the animals themselves are of Far Eastern origin. There is, however, another explanation possible. In the art of Iran and her bordering countries during the fifteenth and sixteenth centuries fabulous animals of Chinese derivation were often placed in landscapes or in a decorative setting. The lung and the fêng-huang are the most common of these, and they are usually shown as being engaged in combat.40 The ch‘i-lin is also rather frequently found. The easiest explanation would be to assume that the dragon was replaced by the ch‘i-lin, which to a Persian artist was just another fierce-looking monster. There are, however, certain settings of the Chinese animals that admit also another explanation. Sometimes the ch‘i-lin is placed in the space between the fêng-huang darting down on the rearing dragon.41 To certain artists copying such a design the nature of the main motif was not known, or it did not seem significant enough to preserve it. Thus, at times, an artist chose only a section of the scene with the result that now the fêng-huang combatted the ch‘i-lin. Be that as it may, the new combination is first found in the Persian art of the sixteenth century, but since a bookbinding of about A.D. 1430 shows a fêng-huang battling a winged griffon,42 a fêng-huang fighting a ch‘i-lin might also be possible in this century. There seems little doubt that the Caucasian carpet weavers borrowed the chinoiserie motif from a Persian model; these rugs show many such inspirations and the weavers were in any case more interested in color and pattern than in realistic and meaningful scenes. All this leads one to assume that the combination of the two Chinese animals is accidental and the scene devoid of a special meaning.

A second group of unicorns are actually spurious; they look like unicorns but are really two-horned animals. Their picture should in most cases be interpreted as showing the horns in

40 I intend to deal with this motif in another paper.
41 212, vol. 6, pl. 1123.
42 16, fig. 9.
strict profile so that they cover each other and appear as one.

A case in question is the early fourteenth-century miniature of a yaḥmūr in the Freer Gallery of Art which originally belonged to a now scattered Manāfīʿ-ʾi ḥayavān manuscript (pl. 46).48 Here the horn is clearly set on the brow of the head and thus looks like a single horn. Another miniature portraying two cervine animals from the same manuscript, in the Minneapolis Institute of Art, shows clearly that the artist could draw two antlers or horns in proper perspective if he wanted to do so.49 There is nothing in the nature of the yaḥmūr which would oblige the artist to depict it with a single horn. The modern dictionaries designate it as a wild ass or onager, without an allusion to horn or horns.50 The text of the Manāfīʿ itself, although it does not describe the physical aspect of the animal, states at least that “its nature does not differ from that of the deer ḥārā.” And finally the late thirteenth-century Manāfīʿ manuscript in the Morgan Library portrays the yaḥmūr with two horns. There is therefore no reason to count the yaḥmūr as another unicorn. Whether the artist of the Freer miniature regarded it either as a unicorn or was under the influence of the unicorn iconography and thus represented it as such, or whether he only wanted to represent it in strict profile, all these are unanswered questions and will probably remain so. Still the case of the yaḥmūr is significant because it proves that an animal does not have to be a unicorn even if it looks like one.

Another instance is a little scene on a carved Fatimid ivory box in the Berlin Museum.46 Here a lion is seen attacking an antelope which is shown with only one horn on its brow. The iconographic setting makes it impossible to regard this animal as a unicorn, as was suggested in recent publications.47 It can-

48 No. 382.
49 245, figure on p. 45. The miniature represents the “mountain ox and cow” گاو کوهی which sheds its antlers every year.
50 There is perhaps a confusion with the two-horned yaḥmūr یامور which al-Qazwīnī compares with the wild ox (217, vol. 1, p. 405).
51 On the left side of the cover in 155, vol. 3, pl. 254.
52 64, p. 430; 55, p. 276.
not be the mighty karkadann, which overpowers all animals; and as to the kidlike ḥarīsh, which seems to be the most likely identification, we find that Ibn Bukhtishūʾ states: “. . . it is stronger and runs faster than the lion.” The ivory box shows, therefore, a two-horned antelope in strict profile.

This poses now the question whether we have not been too rash in regarding the noncaptioned animals as unicorns, or especially as rhinoceroses. However, our conscience can be put at ease for two reasons. First, the scenes of a unicorn chasing an elephant can refer only to a karkadann. Second, the single-horned animals in the captioned illustrations of zoological and Shāh-nāmah manuscripts form such a large and varied body of rhinoceroses that they easily identify or at least provide the raison d'être for the comparatively few undesignated specimens on buildings and works of art. There may be one or two examples which may eventually be proved not to be a karkadann, but the rest will undoubtedly stand up under further scrutiny and remain in this category.
THE Lore OF THE UNICORN IN THE MUSLIM WORLD
COMPARRED WITH THAT OF OTHER CivilIZATIONS

For the sake of clarifying the complex lore of the unicorn the preceding pages were restricted to a study of the physical character and iconographic setting of various one-horned animals in the world of Islam and to the associations which people there had formed about them. The Muslim East is not, however, the only region which has concerned itself with the unicorn. This animal is universal with wide ramifications through the ages and in various cultures, most of which antedate the birth and rise of Muslim civilization. With this fact in mind one can assume that since the Islamic world has always been ready to accept and integrate ideas which conform to its concepts, an interrelationship must have existed between the beliefs held by Islamic writers and those of other civilizations. This is all the more the case because the lands of the caliphate occupied a strategic position between India and China to the east and the lands of the classical heritage and the medieval civilizations to the west, all of which have fostered myths about the unicorns. By investigating a possible interchange our understanding of the prehistory and the significance of the unicorn pictures will obviously be deepened. In view of the complexity of this ramified and widespread material, many of our explanations can be nothing but hypotheses; but at least in a few instances a new and fairly well-documented insight into the growth of the myth seems to have been gained.

A. THE ANCIENT ORIENT

There is nothing in the Muslim texts which would indicate that any particular idea about the karkadann was taken over from one of the pre-Muslim civilizations of the Near East. It seems, however, possible that the ancient arts might perhaps be responsible for the equine type of karkadann.

1 On this subject see 242, pp. 26-48.
The Mosul jar in the Berlin Museum on which this particular type occurs for the first time belongs to an archaic class of pottery the ornamentation of which often shows iconographic survivals from the Babylonian period (pl. 31, left). As we pointed out in an earlier passage the scene represented might very well have been inspired by an early seal. It is irrelevant whether or not the ancient model actually represents unicorns. Ibn al-Balkhi's interpretation of the Persepolis sculpture shows that the medieval Persian was ready to see a karkadann in any animal which looked as if it were represented with only one horn. Likewise, it does not matter that the old prototype may not have been a horse at all, but a bull of equine appearance. Ibn al-Balkhi shows again how loose the medieval reinterpretation of an old motif could be, since in another Persepolis relief he mistook a bull for a wild ass. The Mosul jar follows the old oriental motif rather closely. It might be surmised that later on and in other regions the equine unicorn was recognized as a karkadann, especially since it was popularly believed, as shown by the Muslim texts, that the karkadann had some connection with a horse. It was then detached from the traditional iconographic setting and adapted to purely Muslim ones.

B. THE CLASSICAL WORLD

A few Muslim writers have acknowledged their acquaintance with classical texts dealing with one-horned animals. Al-Jahiz states that Aristotle speaks of the one-horned "Indian ass" in his Historia animalium. Later on Marvazi quotes two Greek authors for his transcription of πτωκερος and

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* The dependence of the artists of the Seljuk period on the arts of pre-Muslim periods has been noted in the discussion of textiles (237, pp. 84-90), pottery, and metal, but so far no systematic discussion has appeared. The influence comes mostly from Sasanian prototypes; the unglazed pottery of Mesopotamia follows, however, Babylonian models.

* Herzfeld (143, teil 1, p. 116 and fig. 29) stresses that the shape of the bull of this period "ist mehr die eines pferdes"; see also 270, p. 201, No. 580, and p. 202.


* 27, book 2, chapter 1, p. 499b, lines 15 ff.; 28, pp. 218-221.
for the meaning of this word in Arabic. The same author presents, in addition, several other excerpts or references to classical writers, nearly all of whom he mentions by name. In doing so he distinguishes himself from other Muslims dealing with the subject who only rarely use Greek sources. Marvazi refers to Ptolemy’s Geography in connection with the habitat of the animal, and he paraphrases Aristotle’s theory that a single horn goes with a solid hoof and that this horn is placed in the middle of the head. In another passage he gives a general description of the karkadann according to a certain طموس. Here he is apparently reproducing the section on the rhinoceros from the Libr de animalibus of Timothy of Gaza.

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6 In the manuscript of the India Office Library the transliterated term is rendered as وروفرس which is translated as ذو النرن علي افده “he with a horn on the nose.” This shows that the original Greek word must have been πνικερος. Marvazi quotes “Ali b. Zain” (according to 6, fol. 134b) or “Ali b. Din” (according to 7, fol. 88b) as his source for the statements of a Yemeni and also a certain طموس. The Ali b. Zain (or Din) is, as Franz Rosenthal informs me, probably Ali b. Rabban al-Tabari. This ninth-century writer was born in Merv in 808 (192) as the son of a Christian scholar of Syrian origin and with Syriac as his mother tongue. Only late in his life and after having finished his Firdaws al-hikma in 850 (235) did he become a Muslim convert. Marvazi’s great admiration for the Greeks has already been noted by Minorsky (183, p. 2; cf. 57, vol. 1, p. 231, suppl. vol. 1, pp. 414-415).

7 6, fol. 135a-135b; 7, fol. 89b. For the view of Aristotle see 28, pp. 218-221.

8 For comparison we are juxtaposing the texts of Marvazi and Timothy of Gaza:

Marvazi

“Its size is that of a horse and its habitat is on the Nile and the surroundings of bahr al-asamm (?). On its nose it has a single horn, like a sharp sword, with which it can split rocks by hitting it. Sometimes it attacks an elephant with its horn and kills it. The whole of the species consists of males; there are no females and no one knows how they come into existence and how they are born” (6, fol. 134b-135a; 7, fol. 88b-89a).

Timothy of Gaza

“In size the rhinoceros is about the same as the river-horse (hippopotamus). Coming from the ocean, he dwells by the side of the Nile. He has on his nose a horn like a sword with which he is able to bore through even a rock, and with this he often kills elephants. All rhinoceri are male and how they generate, no one knows...” (259, vol. 3, pp. 297-298, paragraph 45).

Marvazi follows Timothy very closely, although the details of expression are slightly different. Steier (248, columns 1339-1341) has, however, pointed out
It also happens that a reference to a specific classical writer turns out to be incorrect. Thus Ibn Bukhtishūʻ thought that the stories about the harish (which he equated with the karkadann) went back to Aristotle. Actually they derive from the Physiologus. Although Ibn Bukhtishūʻ was wrong, his error indicates, at least, that he felt he was dealing with a classical story now incorporated in Islamic literature.

Two classical motifs are to be found both in al-Birūnī and Marväzi. These authors tell us that the frontal horn of the rhinoceros becomes erect when it charges and wants to strike with it and that the animal sharpens its horn against rocks so that it can cut and pierce.

The reference to a movable horn occurs in Pliny's Historia naturalis where this feature is attributed to the yale (a mythical animal) and to the forest bull in Ethiopia. Cosmas Indicopleustes attributes it, however, to the Indian rhinoceros. This myth has been explained by the late Sir Arthur Shipley in "the practice of some African tribes who trained the horns of their cattle to point, one forward and the other backwards. In the imagination of travelers these developed into movable horns which the beast could point forward and backward at will." As the hunting accounts of the Swede Andersson show, the myth was still current in Southwest Africa in the middle of the nineteenth century. It probably persists to the present time.

The horn-sharpening feature is recorded for the first time, in the first century B.C. by Diodorus Siculus, and is then

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that the manuscript which served as basis of Haupt's edition is rather poor. The better manuscript which Lambros followed for his edition unfortunately does not contain the chapter on the rhinoceros. The text of Timothy goes indirectly back to Oppian's Cynegistica (see the passage in 202, pp. 102-105; for Timothy's sources see 248, column 1340). Timothy lived at the time of the Emperor Anastasius I (491-518).

10 76, p. 353.
11 40, p. 40. For the history of the yale in classical medieval times and its heraldic use in the West, see 89, pp. 173-199.
12 "It is believed by many ... that it can, at will, turn the posterior horn, the other horn meanwhile remaining firm and erect" (25, p. 304).
repeated by Pliny, Aelian, and Solinus. In classical texts the rhinoceros sharpens its horn prior to its fight with the elephant. Al-Birūnī does not speak of this preparatory step in connection with the fight between the two animals because he himself had witnessed in India such an encounter in which this sharpening of the horn did not take place. He—like Marvazi—gives it only in the hearsay account of a traveler in Africa. Thus this myth, like that of the movable horn, probably reached the Muslim world from the Dark Continent. Whether it represents the direct influence of indigenous folklore or its classical version is a question that cannot be investigated in this paper. It can, however, at least be stated that the horn-sharpening motif probably originated from the fact that the biggest horns of the species which was known to the classical world (the white or square-lipped rhinoceros) are usually worn flat at the front of the tip, because the horn drags on the ground when the animal grazes. In some cases captive animals have reduced their horns to small stumps or the horns have altogether disappeared, due to constant whetting. Although this seems to be the right interpretation of the old idea, classical sources replaced the correct explanation by another which is based on the belief (expressed by Agatharchides, Diodorus, and Aelian) that the horn of

16 Quoted by 74, p. 16 (Solinus lived in the second half of the third century).
17 There is so far no indication that Muslim authors believed in or at least reported another African myth, namely, that “the horns are soft and pliable when the animal is at rest, and that they at once become hard and solid when on the move.” (25, p. 504).
19 53, vol. 12, p. 617; 97, p. 182. The notion of the classical writers may have been further strengthened by the observation how the rhinoceros uses its horn to get the bark off trees, makes wallowing pits (128, pp. 3, 6, and 14), digs under small trees or bushes to loosen their roots (53, vol. 12, p. 611), or “noses” with its horn and muzzle in ant-hills (see the exhibit in the U.S. National Museum, Washington).
20 This writer of the second century B.C. is quoted by Photius (206, columns 55-56).
22 14, vol. 1, p. 432: book 17, chapter 44.
the rhinoceros is much like iron in strength and hardness. Starting from this assumption, the ancients concluded that the horn can be sharpened with a kind of natural whetstone. However this may be, in Islamic literature the motif remains a rare feature.

The next question to be discussed is whether or not the fairly common accounts of the fight between the rhinoceros and the elephant found in classical literature since Agatharchides and Artemidorus (second century B.C.) are the prototype for this motif in the writings of Islamic authors. The Muslim accounts are either stereotyped or very fanciful and thus in neither case based on actual observation. They must be derivative and the question is only from which source—classical or otherwise.

When one compares the Islamic accounts, especially the earlier ones, with those of the classical writers, one notices that the two differ in certain aspects. They do not have the specific classical motivation, the fight for watering places and pastures; they do not explain why the karkadann tries to hit the belly of the elephant, which in classical literature is described as the softest part of the elephant; and, moreover, they do not mention that if the rhinoceros is unable to strike the elephant’s paunch, the elephant in turn kills it later on with its tusks and the sheer weight of its body. For

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28 For a short survey of the literary references see 247, columns 1785-1786. A fresco with a two-horned rhinoceros following an elephant was found in a Sidonian tomb-chamber of Ptolemaic times at Marissa (Moresheth) in Palestine (204, p. 26, pl. 10; 220, p. 67 and pl. 5, fig. 13). Since the elephant carries a saddlecloth and is apparently guided by a Negro, the fresco can hardly be assumed to reproduce the proverbial fight between the two animals; only their combination in the painting could have been suggested by the classical references.

24 Agatharchides (second century B.C.) as quoted by Photius (206, columns 55-56); Artemidorus (about 100 B.C.) as quoted by Strabo (253, vol. 7, pp. 334-335); see also Diodorus Siculus (86, vol. 2, book 3, pp. 180-181); and Aelian (14, vol. 1, p. 432: book 17, chapter 44). All these passages speak of the rhinoceros.


26 Agatharchides as quoted in Photius (206, columns 55-56); Diodorus Siculus (86, vol. 2, book 9, pp. 180-181); Aelian (14, vol. 1, p. 432: book 17, chapter 44); Artemidorus as quoted in Strabo mentions, at least, that the ele-
Islamic writers, the sole motive for the fight is the ferocity of the karkadann which prevents any animal from grazing in its very extensive territory. There is never an allusion in Islamic literature to the possibility that the rhinoceros might not be victorious. Since the time of al-Qazwini, however, they have given more detailed descriptions of the manner in which the karkadann attacks the elephant and of the ensuing death of the attacker as a consequence of his victory. As has already been pointed out, the Islamic accounts lack also the common classical feature of the sharpening of the horn on a rock prior to the assault of the rhinoceros. All these differences seem to point to the fact that the Muslim stories are not directly dependent on classical literature. If this is the case, how can it be explained that both civilizations have the same motif but with such divergencies?

It is natural to assume that the story of the fight between elephant and rhinoceros came from regions where the two animals are at home, that is, either Africa or India. No Muslim references pointing to an African origin of the motif have so far turned up. It is not mentioned in the African part of al-Biruní’s report, though it is otherwise permeated with fanciful stories. The account of the Egyptian al-Nuwairi, which contains both Indian and African lore, speaks of the attack on the elephant as taking place in India. Furthermore, nearly all Muslim authors speak of the single-horned karkadann when they mention the combat; only al-Dimashqí speaks in this connection of the two-horned species of Sumatra, while al-Gharnáti followed by al-Damirí refers to a three-horned variety, which again excludes the two African species which are bicorned. Finally, various reports about the relationship of the African animals directly contradict the Muslim myth of a rampant and ever-victorious rhinoceros. Thus it has been said that “even the ponderous and quarrelsome black rhinoceros (which is more aggressive than the white species) will... invariably make off (when elephants approach), usually giving vent to his fear or ire by one of his vicious and peculiar

phant can prevent the belly-slicing attack of the rhinoceros by the use of his trunk and tusk (253, vol. 7, pp. 334-335).
snorts." 27 Another authority states that when the two animals visit the same water hole, the black rhinoceros at all times gives way to the elephant. 28 Big-game hunters in Kenya, British East Africa, insist that the rhinoceros will never remain in the presence of an elephant, since the two are deadly foes and the latter always emerges victorious from any conflict. 29 This belief has recently been challenged by an American zoologist who "on several occasions saw both animals drinking from the same watering place, with neither paying the slightest attention to the other," 30 which, at least, indicates that the African rhinoceros is not eager to combat the elephant.

All these data speak against an African origin of the Muslim myth. This does not, however, preclude the fact that accounts of deadly encounters are unknown on this continent. Andersson reports in the book on his hunting experiences in Southwest Africa, published in 1857, that "furious battles are said to take place occasionally between rhinoceros and elephant; and though, of course, strength in the elephant is infinitely superior to the rhinoceros, the latter, on account of his swiftness and his sudden movements, is by no means a despicable antagonist. Indeed instances are known where they have perished together. At Omanbondé we were told that a combat of this kind occurred not long before our arrival. A rhinoceros, having encountered an elephant, made a furious dash at him, striking his long sharp horn into the belly of his antagonist with such force as to be unable to extricate himself, and in his fall, the elephant crushed the assailant to death." 31 Two details of this report, viz, the attack of the rhinoceros against the belly of the elephant and his being crushed to death by the weight of the collapsing elephant, recall at once the similar account of Aelian who wrote more

27 25, p. 325, footnote 1.
28 243, vol. 1, p. 417. There is no reference to any combat; likewise Lang in his account of the white rhinoceros in the Belgian Congo does not list the elephant as an enemy (162, pp. 37-82).
29 252, p. 3.
30 252, pp. 3-4.
31 25, p. 124. Ken Stott, Jr., informed me that he too found that the African natives regard the two animals as deadly enemies.
than 1,600 years before the Swedish explorer.\textsuperscript{32} This might suggest that the latter’s version and perhaps also the references of classical writers to the superior strength and power of the elephant as the decisive element in the combat are of African origin.

The fact that we are inclined to exclude Africa as the source of the Muslim myth leaves us now with India as the other alternative. Only two Indian texts dealing with the motif have come to my notice. They are unfortunately late\textsuperscript{33} and not specific enough to clarify the issue, but being the only indications of a possible Indian origin of the story, they deserve a short discussion at this point.

Bābur stated in his memoirs that in certain regions it was thought that the rhinoceros could lift an elephant on its horn, a belief not shared by the emperor himself.\textsuperscript{34} Unfortunately he did not give any further details and we therefore do not know which geographical area he had in mind. The editor of the memoirs assumed that he was referring to Tramontana.\textsuperscript{35} If this localization of the story is correct, it still remains undecided whether it is the usual tale found in Muslim literature or represents a local “Tramontanan version.” In the latter case it could very well be a reverberation of tales from the not too distant Indian jungle country where the animals are at home. There is, however, still the possibility that the emperor may have referred to India after all. While the exact region referred to remains uncertain, the remarks of the Mughal emperor show at least the state of mind from which the myth arose. In one place in his memoirs he muses: “I have often wondered how a rhinoceros and an elephant would behave if brought face to face.”\textsuperscript{36} He leaves this question open, yet in another passage he states: “... the rhinoceros is more ferocious than the elephant, and cannot be made

\textsuperscript{32} 14, vol. 1, p. 432: book 17, chapter 44; see also 74, p. 15.
\textsuperscript{33} As Professor Geiger has kindly informed me, there is no reference to the rhinoceros-elephant fight in classical Indian literature.
\textsuperscript{34} 32, vol. 2, p. 489.
\textsuperscript{35} The region between the Hindu Kush and the Oxus River.
\textsuperscript{36} 32, vol. 2, p. 452.
obedient and submissive." Starting from such an attitude it is natural that a simple-minded, less critical person would soon come to the logical conclusion about the outcome of a fight. Thus a native hunter, who with simple arms had been exposed to the headlong attacks of the angered rhinoceros, and also knew of the greater docility of the elephant, could easily come to a belief in the bitter rhinoceros-elephant fight which ends fatally for the latter. And even if the hunter did not tell such a yarn, it would naturally suggest itself to people to whom the dangers of the jungle are vividly described. The final steps in the development of the story are further exaggerations and the diffusion of the accounts by traders, itinerant craftsmen, soldiers, and sailors. Naturally, such stories would find an eager ear in the greater safety of regions removed from, but still in relative proximity to, the jungle, such as Tramontana. And of course, once the notion about the ferocity of the animal became associated with the observation of its solitary life, another myth resulted, namely, that the rhinoceros does not let any other animal graze in its territory within a radius of 100 parsangs.

The second reference to the fight between rhinoceros and elephant is of fairly recent date. When, after a stay of 20 years in Bengal, Capt. Thomas Williamson wrote his Oriental Field Sports in 1819 he repeated in his chapter on the rhinoceros most of the features known to Muslim writers about this animal including its fierce enmity for the elephant. Williamson writes that he is "compelled to rely much on the report of those residing in situations frequented by the rhinoceros," and although he discredits the accounts of the natives who professed to have been present while the rhinoceros and the elephant were fighting, he nevertheless seems to be under the influence of the local beliefs of such deadly encounters.

38 53, vol. 21, p. 612; 128, p. 5.
39 278, pp. 165-177.
40 278, pp. 164-166 and 174-175. The scene with "a rhinoceros charging elephants" published by Coomaraswamy (75, vol. 2, pl. 22) is after a design of Captain Williamson drawn by Samuel Howitt (278, vol. 1, pl. 11). This picture shows at the right a large elephant whose belly has been ripped open by the rhinoceros in such a way that the blood-stained intestines show.
These two sources (in the absence of earlier and more specific accounts which, it is hoped, will eventually turn up) lead one to assume that the Muslim belief in the elephant-rhinoceros fight belongs possibly to Indian folklore. Such an assumption is, to a certain degree, corroborated by the fact that the account of the fight occurs in the “Voyages of Sindbad” which are strongly permeated by Indian popular stories. Here we find, furthermore, a clear statement of how the yarn was disseminated. In the second “Voyage” it is said that “... the sailors, travellers, and persons in the habit of journeying about in the mountains and lands have told us that this wild beast which is named the rhinoceros lifteth the great elephant upon its horn ...” Thus it seems most likely that Muslim sailors

![Image of Indian seal](image)

Fig. 2.—Indian seal found in Tell Asmar. Middle of third millennium B.C.
(After 104A, fig. 108.)

and travelers picked up the tale in India and brought it home with them.

As far as this writer knows, no early Indian figural rendering of the elephant-rhinoceros fight seems to have come to light. It is true an Indian seal, with a well-defined rhinoceros behind an elephant, was found in a house of the middle of the third millennium B.C. in Tell Asmar (the old Eshnunna) in Iraq, where it must have been brought by ancient trade (fig. 2). The fact that there is a crocodile-like gharial above the rhinoceros, however, would seem to invalidate the assumption that this is an early representation of the elephant-rhinoceros fight;

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61 The rukh stories likewise reveal Indian influence. A third Indian motif is found in the seventh “Voyage,” where we learn of the burial place to which the elephant repairs when it feels the approach of death (29, vol. 3, p. 177). The Singhalese parallel was pointed out by the British zoologist Sir J. Emerson Tennent more than 80 years ago (236, pp. 181-182).
it would be wrong to assume a relationship between the two animals without considering the third, in this combination. An even more forceful argument is presented by a seal impression found in Mohenjo-daro on which is a procession of four wild animals, the elephant following the rhinoceros, and the latter preceded by two beasts which Sir John Marshall defines as a tiger or leopard and another catlike animal. Compared with the Tell Asmar seal, the position of the two animals in which we are here interested is reversed. All we can say, therefore, is that on seals of the Indus civilization the elephant and the rhinoceros occur together with other animals, without any fixed position and without indication of a fight.\footnote{For the Tell Asmar seal see \textit{lo4a}, pp. 305-306 and fig. 108, a reference kindly pointed out to me by D. S. Rice. For the Mohenjo-daro seal impression see \textit{179}, vol. 2, p. 395; vol. 3, pl. 116, No. 14.}

The “unicorn”-elephant fight is one of the most widely spread motifs within the whole myth. Not only is it a standard feature of many classical and Islamic authors, but it is also to be found in the books of great Christian writers such as Isidore of Seville\footnote{\textit{138}, p. 455, paragraph 53.12.} and Timothy of Gaza.\footnote{\textit{259}, vol. 3, p. 297, paragraph 45.} Through the French-Norman poem of Guillaume le Clerc it was introduced in the medieval bestiaries and their series of miniatures,\footnote{\textit{271}, pp. 33 and 35, pl. 156; \textit{74}, p. 17. The text of Guillaume le Clerc (written in 1210) goes back to the Latin prose work \textit{Liber de bestiis . . .} of Hugh de St. Victoire. Guillaume regards the unicorn as “si combatanz e si hardie, qu' as olifanz prent aile,” but in its fight with the elephant it uses its claws and hoofs to rip the belly of its adversary (\textit{176}, pp. 102 and 282-283).} and it is to be found in the lore of the Renaissance as, e.g., shown by the poetry of Joshua Sylvester,\footnote{\textit{242}, pp. 217-218.} by some tapestries,\footnote{\textit{110}, vol. 2, fig. 148 (Flemish-German, ca. 1540); \textit{13}, fig. 2 (Paris, mid-sixteenth century).} and by the inscription on Dürer's woodcut of the rhinoceros.\footnote{\textit{87}, pp. 46 ff.} Through the Jesuit Ferdinand Verbiest it was in the second half of the seventeenth century even introduced into Chinese literature.\footnote{\textit{165}, pp. 78-79.} It seems therefore appropriate to investigate
what the relationship between these two animals actually is. In doing so this writer has to admit that he never witnessed an encounter between the two animals. Therefore he is in a not much better position to judge this problem than Cosmas Indicopleustes, whose account is partly based on stuffed animals, or al-Jahiz, who merely evaluated literary reports without having seen the animal. A modern writer has, of course, a larger amount of first-hand evidence at his disposal, including that of modern zoologists trained in the observation of animals. However, it is astounding how even these well-trained observers can come to different conclusions.

The best zoological opinion seems to be that the rhinoceros is "as a rule a quiet, inoffensive animal." Its senses of hearing and smell are extraordinarily acute, but its eyesight is so poor that it is of little use. Owing to this condition the animal depends mainly on its auditory and olfactory senses to warn it of potential danger. It is constantly on the alert and a sudden sound or scent can send it into uncontrolled panic. When the animal "gets one's wind ... it will immediately go off at full speed in any direction ... if facing you it is liable to run in your direction." This dash is actually more of a flight than an attack and the animal seems to be unaware of what it is heading for. To the untrained or frightened observer this looks, of course, like a wanton and ferocious at-

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50 48, p. 473. Blanford adds to this statement the following very significant passage: "the stories of its ferocity and its deadly enmity to the elephant that were copied from the not very veracious pages of Captain Williamson's Oriental Field Sports into European works on natural history, being fables." (See also 240, vol. 5, p. 160.) Brehm (53, vol. x2, p. 608) states that "das indische Nashorn ist . . . ausserordentlich bösartig," but he explains in another passage that every rhinoceros is good-natured ("gutmütig") when it first comes across man and is not irritated, only to become vicious when aroused or when it has had bad experiences. The same Brehm mentions at another place that Indian rhinoceroses are "überaus gutmütig und harmlos" (p. 614).

51 252, p. 3.

52 128, p. 11. Brehm mentions how a rhinoceros ran away from a single dog, or as soon as it got the scent of a man (53, vol. x2, pp. 613-614). There is also historical proof for the reluctance of the rhinoceros to accept a challenge. Bâbur mentions in his memoirs that during a hunt the animal would not attack either man or horse and fled for 2 miles into the plains before it could be killed (32, vol. 2, p. 451).
tack and just like the destructive disposition attributed to the animal by popular belief. The impression of an attack is further strengthened by the fact that the rhinoceros can trot and gallop in contrast to the elephant which can only walk or shuffle. "Only when wounded and driven about, the rhinoceros will sometimes charge home, though this is an exception." It will then tackle anything it can dimly see and against which it rushes on in a straight line. His targets can thus be trees, rocks, locomotives, trucks, the elephant mount of a hunter, and so on. When it attacks, it "is said to use its sharp lower incisors (or as some think, lower canines), much as a hog does." On the other hand when the animal is not frightened it can be easily tamed.

The elephant, being on the whole a rather timid, inoffensive animal, tries to avoid the great Indian rhinoceros which, at times, it seems to fear and from which it runs away. This is said to apply equally to the wild elephants of Bengal and the trained hunting animals, although there is, as we shall presently see, other proof of the courage of the elephants. There is no reason to assume that there is a deadly fight for pasturage between them, as the classical writers believed.

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53 128, p. 15.
55 48, p. 473.
57 148, p. 233; 240, p. 160.
58 Blanford (48, pp. 473-474). To this zoologist was "shown in Cooch Behar, a straight horizontal scar on one of the Maharaja's elephants just between the feet . . . such a wound could not have been produced by the horn of the rhinoceros." Cf. also 128, p. 3; 240, p. 160.
59 165, pp. 80-81, footnote 2; 252, p. 3.
60 48, p. 466.
61 38, pp. 14, 54, 91, 145; 240, p. 160. Shebbeare states about the great Indian rhinoceros: "Wild elephants, though only too plentiful in the surrounding forest, give the rhino and its haunts a wide berth" (241, p. 1229). The relationship between the two animals in India seems to be the opposite from what it is in Africa (see above, pp. 79-80).
62 This is also the opinion of Steier (247, column 1786) and Wellmann (274, column 2251).

There even exists a report of the peaceful encounter of a Sumatran rhinoceros
The attitude of the rhinoceros to smaller animals is quite unpredictable. To quote a recent observer of the African species: "... sometimes he feeds or drinks amidst a herd of mixed species, apparently oblivious to their presence. On other occasions he obviously wants the area all to himself, and makes no bones about it." The same author tells that he watched "a rhino charge into a herd of buffalo scattering them in all directions, and on another time a female rhino and calf sent a group of ten giant forest hogs scrambling away from the waterhole. The rhinos were not content to drink until the forest hogs had entirely abandoned the forest clearance in which the muddy pool was located." This attitude is exactly the one which impressed itself so much on the Muslim mind and which has found such frequent expression in the figural arts.

The belief in the myth of the elephant-rhinoceros combat was so strong that at certain times the animals were set against each other. Thus when King Emmanuel of Portugal received, in May 1515, an Indian rhinoceros as a gift of Muṣṣaffar, King of Cambay, the first specimen to reach Europe since Roman times, he matched it against an elephant. The fight took place in Lisbon, on June third, 1515. As described in a letter by Valentin Ferdinand of Moravia, it proved to be a disappointing affair, since as soon as the elephant noticed the rhinoceros, it turned tail and with every sign of fear tried to get away; it finally broke some iron bars of a window and managed to escape.

and an elephant which recalls the one given by Stott of his experience with an African rhinoceros (see above, p. 80). Since I have not been able to find such a report on the Indian species, I am quoting, at least the passage about the episode at a water hole in Burma:

"I crept to the pool along an elephant path, and sure enough saw, not only a double-horned Sumatran rhinoceros with a fine posterior horn, but also a very fine bull elephant with a very good pair of tusks. The latter was throwing mud and water backwards over his body and between his forelegs. To cool himself and to drive away the gadflies, the rhinoceros was standing alongside the pool within ten yards of the elephant which seemed to take absolutely no notice of its presence. A cock silver pheasant was also standing between the two animals" (258, p. 149).

68 252, p. 4; 243, pp. 421-422.
64 104, pp. 33-41; 87, p. 50.
Even at the court of Lucknow, where the king arranged all kinds of animal fights, the contest between a rhinoceros and an elephant was not very exciting and altogether not easy to effect since the two animals would attack each other only when both were must. The account given to us by Knighton in his *Private Life of an Eastern King* discredits the unhappy end in certain classical and all Muslim stories. At the same time, it contradicts the medieval Muslim representation of the fight according to which the karkadann approaches the elephant from behind since it is assumed that the elephant is fleeing from its enemy. Knighton’s report states: “The elephant approaches as usual with his trunk thrown up into the air and head protruded; the rhinoceros either standing upon his guard, or also advancing with lowered snout. The tusks of the elephant sometimes pass on each side of the rhinoceros harmlessly, while the huge head shoves the lighter animal backwards. If the elephant’s tusks trip up the rhinoceros, as is sometimes the case, they are then plunged into him without mercy; but more frequently the contest ends to the disadvantage of the elephant, by the rhinoceros inserting his snout between his antagonist’s forelegs and partially ripping him up; the elephant belaboring all the time with his trunk, to a certain extent uselessly, however. Prevented by his tusks, the rhinoceros cannot get his snout far under the elephant’s body, so that the wound he inflicts is not generally a very severe one.”

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65 This pathological condition results either in peculiar paroxysms of excitement or in melancholy; it has often been described in the case of the elephant, but its causes are still little known. The usual explanation on a sexual basis is, at least to a certain degree, questioned by many Western writers on the subject. (See the comments on the most important literature in Edgerton’s edition of the *Mātanga-līlā*, 197, pp. 29-38).

Al-Jahiz was the first Muslim writer to point out the importance of the must condition, because he states that an elephant in heat is fiercer than a karkadann (145, vol. 7, p. 24); Al-Mas’ūdī describes how the elephant attacks its mahouts and guards and is then in such a wild state that even the karkadann flees from it (184, vol. 3, pp. 57-58). This is, however, contradicted by al-Nuwayrí, who states that the karkadann attacks an elephant in heat, although no other animal can withstand it at that time; the elephant draws back in fear and his lust subsides (207, vol. 9, p. 316).

66 151, pp. 164-165. This book, first published in 1855, is based on information
The staging of such fights at the court of the kings of Oudh suggests yet another possible origin of the myth of the elephant-rhinoceros battle. In countries where people enjoy the spectacle of animal combats, all possible combinations are either actually set to test against each other or, at least, thought of as possible rivals. In India both elephants and rhinoceroses were available and there were affluent courts staffed with the necessary men to arrange such fights. Although deductions from the behavior of the rhinoceros during hunting expeditions are probably of basic importance in the formulation of the myth, actually staged (or just fancied) combats may have given further substantiation to it.

In addition to these staged fights, the animals also encountered each other in the hunting field, when the elephant served as a mount. Thus in 1525 Bābur had the mahouts drive their charges toward a roused rhinoceros which had broken cover right in front of the elephants; the rhinoceros did not face the challenge, but ran off in another direction. This must have been a real disappointment for the Mughal emperor, since he was interested in determining the outcome of an encounter between the two monsters.

Another document demonstrating the elephant’s bravery is a miniature of the hunting Jahāngīr in the Sohn-Rethel collection (pl. 33); it shows clearly that it would stand its ground in face of a fierce attack and not run away.

What amounted to a fight took place during a viceregal hunt in Assam in 1909. At that time the elephant was brought to his knees while the rhinoceros rolled on the ground whence it rose to its feet and disappeared into the jungle.

The only dissenting opinion is voiced by Bengt Berg who reports that “it occurred several times on big hunting expeditions in India that the belly of big hunting elephants was slit open by the weapon of the aroused rhinoceros and the wounded

given to the author by an anonymous European courtier of King Nāṣir al-din of Oudh (1827-1837). I owe this reference to Prof. K. A. C. Creswell.

67 “Beast fights of various sorts have been held in India from time immemorial” (47, p. 451).


elephant fell on the battle field." To Berg's statement is apparently not based on personal observation, and he may very well have become a victim of the old myth.

There is finally one more report, the earliest of them all, which, however, does not indicate whether it was a staged fight or an episode during a hunt. According to the version translated by Sachau, al-Birūnī speaks of a young rhinoceros which attacked an elephant, apparently frontally, because "the rhinoceros wounded with its horn the forefoot of the elephant and threw it down on its face." Whatever the conditions may have been under which the encounter took place, the mode of attack as given by al-Birūnī is quite different from various versions of the alleged fights as described by later Muslim writers and then represented by the artists.

The conclusions to be drawn from these observations are that certain elephants fear the rhinoceros and run away from it, but this is by no means always the case. The rhinoceros, on the other hand, does not seem to be afraid of the elephant, but rather tries to avoid it. However, when disturbed, especially by men, it will make a headlong dash which looks like a charge; this may actually be a flight, though at times it is a real attack. Only under special conditions, when the rhinoceros and the elephant are must or infuriated are they ready to fight. The outcome of these encounters is differently reported. It seems that the frontal attack on the elephant is not fatal. If the deaths claimed in the report by Berg have actually occurred, an attack from the rear, i.e., on a fleeing elephant, might be assumed. As to the origin of the Muslim combat myth, it has not been possible to assemble conclusive evidence, but the data so far gathered seem to point to India.

38, pp. 91-92.

The text of a more extensive rendering of this encounter found in Mavazi is unfortunately not well preserved in the two London manuscripts. According to this version the encounter was staged for Sultan Mahmūd of Ghazna (6, fol. 135b; 7, fol. 89a).

According to Hubback "nothing except human scent seems to worry the rhinoceros" (128, p. 7).
There are a number of other features for which the Muslim authors give the same kind of information as the writers of the classical period. Usually, however, it is difficult to prove whether there is an actual case of borrowing at hand. Pliny and Solinus, for instance, speak of the three-horned oxen of India. This recalls al-Gharnāṭi’s words (repeated by al-Damirī) which state that the rhinoceros has three horns, one between its eyes and two above its ears. Another undecided issue is the position of the horn on the forehead of the animal. Aristotle, Pliny, and Aelian speak of this feature; however, when it occurs in Arab writings it may also be a deduction from the position of the antlers and ordinary horns. As to the equine features of the karkadann in Muslim representations, it is unlikely that these can be accounted for by an author like Aelian who speaks of a single-horned horse, since in Muslim literature no such description is given. But there is at least one feature in Muslim texts which may possibly have been conditioned by classical authors. We are referring to the belief in different unicorns which were accepted by even the outstanding writers of antiquity. This conception may have lingered on in Muslim times although the categories of the Arab authors are different.

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74 The Chinese dictionary Erh-ya with commentary by Kuo P’o (276-324) also defines the hai rhinoceros as having three horns, one on the head, one on the forehead, and the third on the nose (95 in 165, pp. 94 and 104). For a three-horned animal, somewhat resembling a rhinoceros, although not quite fulfilling the requirements of the Erh-ya, see the Six Dynasties figure in the Eumorfopoulos collection (96, vol. 1, p. 17, No. 128, and pl. 17).

75 28, pp. 220-222 (speaking of the single-horned oryx and “Indian ass”).


79 242, p. 34: “Aristotle knew of only two unicorns, but Aelian and Pliny between them must have seven: the rhinoceros, the Indian ass, the oryx, the Indian ox, the Indian horse, the bison, and the unicorn proper.”
C. BIBLICAL AND EARLY CHRISTIAN WRITINGS

Biblical and early Christian influence on the lore of the mythical unicorn is very limited. Al-Jāḥīz knew that the Psalter mentions the unicorn and quotes these Biblical references as a confirmation of the existence of the karkadann. 80 The most important contribution of the early Christian period is the characterization of the ḫārīṣ and the story of its capture with the help of a young woman. The Muslim lore derives obviously from that very influential and widespread collection of allegorizing animal stories, called the Physiologus, a work now thought to have been composed about A.D. 370 in Caesarea, Palestine. 81 If one compares the Greek version published by Sbordone 82 with the earliest known Arabic ones, by al-Tawḥīdī (see p. 60) one finds that the Physiologus text is much shorter, although it is identical in the main features. But one of the Syriac versions 83 is fairly close to that of al-Tawḥīdī and it seems therefore that the influence came from this direction. 84 However, the Muslim accounts do not use the story for allegorical purposes as the Christian versions usually do, by likening the unicorn with Christ, by interpreting

81 275, pp. 11 and 13.
82 206, pp. 78-80: "It is a small beast like a kid, but very fierce. A hunter cannot approach it because of its great strength. It has one horn in the middle of its head. How then is it caught? They send out a pure and richly attired virgin before it and it jumps into her lap and the virgin gives the beast her breast and takes him up to the palace to the king." See also 163, pp. 229 ff. (quoted by 238, p. 181).
83 207, p. 43. According to Lauchert (163, p. 86) this is a "later" Syriac version. Wellmann attributes it to the seventh century (275, pp. 11-12), while Ahrens stresses its importance for the understanding of the original Physiologus (207, p. 9).
84 This Syriac version is closer to that of al-Tawḥīdī than the Christian-Arabic version of the Physiologus published by Land (26, vol. 4, pp. 146-147). This particular Arabic version lacks references to the size of the kid, its quietness and swiftness, its aggressiveness against animals, its "natural affection," the lack of milk in the breast of the virgin, the intoxication induced by the sucking which is like that from wine, the tying with a rope and the motionless behavior of the animal; all these features are in al-Tawḥīdī and nearly all of them in the Syriac text. Al-Tawḥīdī did not use a Syriac text directly, but an Arabic translation entitled Nawzār al-ḥayawān (153, vol. 2, pp. 67 ff., footnote 1).
the single horn with the unity of Father and Son, and so on, thus giving every actor and feature in the story a symbolical meaning. In Islam the passages about the ḫarish are just fanciful stories about a strange animal.

There is an early Christian feature of the unicorn story which has its parallel in Islamic literature; however, it does not represent a case of borrowing from a Christian source. Cosmas Indicopleustes tells us that when the unicorn "finds itself pursued by many hunters and on the point of being caught, it springs up to the top of some precipice, whence it throws itself down and in the descent turns a somersault so that the horn sustains all the shock of the fall and it escapes unhurt." Although it has been noticed by a modern zoologist that the rhinoceros can jump down a sheer drop of 20 feet, the idea that it could break its fall with the help of its horn is a mere tale. This feat has, however, been observed in the case of the Persian wild goat (Capra aegagrus) which can save itself after having made a false step by falling on its horn. This very incident is represented in the Manāsi' manuscript of the Morgan Library in the chapter on the mountain goat (buz-i kūhi) and illustrates the reference to this feature in the text. There seems little doubt that in this case it is Cosmas who borrowed this trait from an account of the Persian wild goat or of an antelope which can perform the same feat.

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85 For this see 242, p. 48; 238, pp. 181 and 186; see also the allegorical interpretation in the Christian-Arabic version of the story published by Land (26, vol. 4, pp. 146-147).
86 76, p. 361.
87 128, p. 6.
88 48, p. 503. McCrindle, the translator of Cosmas, tells us that the oryx is said to have the same facility (76, p. 361, footnote 3), while Shepard mentions also the ibex and the Rocky Mountain goat (242, p. 193).
89 182, vol. 2, pl. 25C. The text, fol. 37b, states: "One of the wonderful traits of the mountain goat is that it throws itself down from places that are about one-hundred spears high and stands on its horns." The same iconographic feature occurs in Western Bestiary manuscripts as, for instance, The Pierpont Morgan Library ms. 81, fol. 33 (ca. 1170). See also 40, fol. 9a (twelfth century) and 41, fol. 190b (ca. 1310).
D. INDIAN INFLUENCES

It is evident that India, the homeland of the great Indian rhinoceros, must have provided many features of the lore of the Muslim unicorn. This is at once borne out by the fact that the common names of the animal such as karkadann, kARG 268, al-bishân,21 and ganda, 22 and also sharav are all of Sanskrit origin. Since at least one of these words from the

268 vol. 2, p. 820. Prof. B. Geiger (referring to Vullers' dictionary and to Lagarde) confirms the old etymology which derives modern Persian kARG from Sanskrit khâdga (1) sword, (2) horn of a rhinoceros, (3) rhinoceros; and kARKADAnna, Arabic kARKADAnna, from khâdga-dhenu, female rhinoceros (lit. rhinoceros-cow). He does not accept the etymology presented by Ferrand (98, vol. 2, p. 675) according to which kARKADAnna derives from khâdga-danta "having sword-(like) teeth." His nonapproval of this etymology is based on a number of reasons, especially on the fact that khâdga means besides sword, also rhinoceros (thus used in Vedic and classical Sanskrit texts) and according to lexicographers also "the horn of the rhinoceros," and that, furthermore, the characteristic feature of the animal is its horn and not its teeth.

Since the early days of Assyriology the Akkadian word kURKIZANNU has been connected with karkadann and therefore has been translated as rhinoceros. Dr. A. Leo Oppenheim informs me, however, that "the context (of kURKIZANNU) clearly indicates the meaning 'young pig' and the correctness of this translation has been borne out recently by such occurrence as e.g. 'one pig and its ten kURKIZANNU.' The karkadann in Arabic, Syriac, Ethiopian (here: karkaned) etc. can therefore not be connected with kURKIZANNU."

Dr. Cammann informs me that in Sung times the "Western" name of the rhinoceros was known as ker-ka (second half of the eleventh century); this is obviously a Chinese rendition of kARG.

21 Thus in the Akhbar al-Sin wa'l-Hind, but there are also misread versions like al-nUSHân or al-nUSHân (184, vol. 1, p. 385, and vol. 3, p. 58), al-mUSHân (Ibrâhim b. Waṣīf-Shâh), and al-shan al-bishan al-fustân in various manuscripts of al-Nâdim's Fihrist (192, vol. 2, p. 184). Reinaud already connected the word with Sanskrit viṣâṇa "horn." Al-Nâdim (192, vol. 1, p. 349, and 98, vol. 1, p. 130) and al-Jâhâni as quoted by Marvâzi (6, fol. 135b; 7, fol. 89b) still call the horn of the rhinoceros (or a piece from it) by the name of al-bishân although al-Nâdim could have applied it also to the girdle decorated with the horn pieces. Even when the term is given to the animal itself, such a designation as al-bishân al-mu'lam "the marked bishân" (Akhbar al-Sin wa'l-Hind and al-Mas'udi) seems to refer to the designs in the horn. Marvâzi states also that the Chinese call it bishân, which is borne out by pî-ṣa-na, the Chinese name for the horn; and in a Chinese Cham vocabulary it is given as basan. (For a discussion of the nomenclature see 98, vol. 2, p. 675; and 183, p. 82.)

22 or from Sanskrit ganda only given by al-Birûnî and Marvâzi.
Sanskrit—karkadann or karg—seems to have been current in Iran during the late Sasanian period (see below, p. 150) we can assume that Indian stories about the animal could have been known in that country about that time.

It is, however, difficult to establish actual parallels by quoting pertinent Indian passages since the rhinoceros, though occurring as early as in the seals of the Indus valley civilization\(^\text{93}\) and in Buddhist texts\(^\text{94}\) "hardly plays any role in the cultural life, folklore or mythology of India. The allusions to it in literary records are exceedingly sparse."\(^\text{95}\) Still quite a number of Muslim borrowings from India can be established.

One such influence is only indirect, but it had great repercussions on the Muslim lore; it came from the legend in the Mahābhārata about the young hermit Ṛṣyaśṛṅga.\(^\text{96}\) He was the son of the Ṛṣi Vīhāṇḍaka and a gazelle and on his forehead thus grew a single horn. This caused him to be called Ṛṣyaśṛṅga, "gazelle-horn," or according to certain Buddhist versions of the legend, Ekaśṛṅga, "unicorn."\(^\text{97}\) When a

\(^{93}\) 179, vol. 3, pl. 111, Nos. 341-347, pl. 116, Nos. 10-13; see also copper tablets on pl. 117, No. 3. The clay figurines of the animal (pl. 97, Nos. 8-11) made by children indicate the popularity with and even the familiarity with the rhinoceros in the Mohenjo-daro civilization (179, vol. 1, p. 348; vol. 2, p. 387).

\(^{94}\) The animal occurs also in Harappa (137, vol. 2, pl. 79, Nos. 74-79, pl. 91, Nos. 252-253) and Chanhu-daro (171, pl. 56, No. 8). For the inclusion of both rhinoceroses and elephant in the same figurative representation, see above, pp. 83-84.

\(^{95}\) See the Khaggavisāṇasutta in 254, pp. 6-11. Prof. W. Norman Brown does not translate the famous refrain as "but live—as lives the rhinoceros—alone"; his rendition is "let him live alone, like the rhinoceros' horn" (60, p. 218).

\(^{96}\) 165, p. 112, footnote 2. Professor Geiger informs me that khadga, sword, horn of rhinoceros, rhinoceros, and khadgin, rhinoceros, literally "having a horn," do not occur often in the literature of India. In Sanskrit works are some passages where the rhinoceros is mentioned in enumerations of wild animals or as having been killed by the arrows of a hero, while the law books state that its meat is lawful for eating. Briggs (55, pp. 280-282) has gathered references, nearly all of them modern, which illustrate the sacred position of the rhinoceros in India. See also 118, p. 378.

\(^{97}\) The relationship to the Indian legend was first treated by Beal (11, p. 124, footnote 2) and then further established by Lüders (169, year 1897, pp. 114-115). See also 165, pp. 110-112; and 238, pp. 181-182). The various versions of the story are discussed in 169.

\(^{97}\) 169, year 1897, p. 114.
drought struck the kingdom of Aṅga, the Brahmins advised the guilty King Lomapāda to bring the chaste Rṣyaśāṅga into the country. The hermit is therefore visited by Śāntā, the daughter of the king (or by courtesans, according to other versions) whom the pious man imagines to be a penitent disciple. She arouses the hermit’s love and then lures him to her cell on a disguised float which is at once released to bring them to Aṅga. Rain falls and the hermit marries the king’s daughter. This seems to be the ultimate prototype for the Physiologus story of the capture of the unicorn with the help of a young woman which, as we have seen, occurs again in the accounts of the ḥarīsh.

The legend of Rṣyaśāṅga is also the raison d’être of the cervine type of unicorn. The genesis of its development is quite clear. The first stage took place when the Indian legend (or a derivative) was adapted for the purposes of the Physiologus. The Christian version reappears then in the accounts of the ḥarīsh the earliest version of which so far traced is to be found in al-Tawḥīdi (died after 1010). The ḥarīsh apparently soon became confused with the karkadann, since both animals have a single horn. As far as can be seen the wrong identification appears for the first time in the Sīhāḥ of al-Jawhari (died between 1003 and 1010) which states that the ḥarīsh is the karkadann. Ibn Bukhtishū’, too, who wrote only slightly later (he died after 1058) opens his account of the karkadann with the remark that the Arabs call it ḥarīsh and then speaks of the ruse involving a maiden with which the animal can be caught, a feature not quoted by al-Mustawfi as being part of the account of the animal in the Sīhāḥ. The only remaining question is just how the kidlike animal of the Physiologus and of the Muslim texts came to resemble an antelope or stag in the figural representations. In this connec-

88 Laufer (165, p. 115) points out that the Sanskrit word vārdhrāpana means both a rhinoceros and an old white goat-buck, so that the confusion might have been reinforced by semantic conditions, if they did not produce it entirely.

89 The account is reproduced in al-Mustawfi (191, pp. 40-41, translation, p. 29). The eleventh-century dictionary of Asadi also states that the karkadann has the shape of a goat (30, p. 105).
tion it is well to remember that the prototype of the ḫārisḥ, the hermit of the Indian legend, was the son of a gazelle and was originally called “gazelle-horned” (Ṛṣyaśṛṅga) and that there was a general folkloristic belief in cervine unicorns in the classical and postclassical periods,\(^1\) which possibly may go back to Indian concepts.\(^2\) The myth of this type of animal found figural expression also outside the Muslim world. This fact was established by Laufer who referred to an illustration of a cervine unicorn in the Chinese Chéng lei pên ts‘ao, dated 1208.\(^3\) It therefore seems that the iconographic type goes back to an earlier literary or figural model which was based on the Ṛṣyaśṛṅga story or on general folkloristic notions about a cervine animal. As stated before (p. 18) the analogy to antelopes, the usual horn-bearing hunted animals, possibly influenced the development of the type.\(^4\)

In other cases Muslim authors have specifically acknowledged India as a source of the information they give in their books. To this category belongs the story first told by al-Jāḥiẓ that the karkadann prevents other animals from grazing in its domain. The same applies to the yarn of the foetus sticking its head out of the dam’s womb prior to its birth, for which both al-Jāḥiẓ and al-Birūnī claim Indian origin. Al-Qazwīnī gives an account of a caravan traveler who miracu-

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\(^{1}\) Thus, e.g., Aristotle speaks of a unicorn gazelle (oryx). In the Cyranides, a Greek work written between A.D. 227 and 400, it is said that the rhinoceros is a quadruped resembling the stag, having a very large horn on its nose (165, p. 110).

\(^{2}\) This is assumed for the Cyranides by Laufer (165, p. 115).

\(^{3}\) 165, p. 109. There is also a Chinese bronze figure of a cervine unicorn in the A. Schoenlicht collection, which Visser attributes to the Sung period or earlier (266, pp. 218-219); it is difficult to give a specific date to this piece which might possibly be later than Sung.

\(^{4}\) The iconographic history of the shararv falls outside the scope of this paper since it is not a unicorn, although in Islam its lore became connected with that of the rhinoceros. Being the product of Indian imagination it can be surmised that there are Indian pictures which could have influenced the miniature of the shararv in the Berlin al-Qazwīnī manuscript (pl. 13, upper left). That such animals exist in Indian art is shown by a seventeenth-century Goanese bedspread in the Brooklyn Museum on which we find a bovine animal with the characteristic four excrescences on the back (fig. 3; cf. 187, p. 130, speaking of “strange spiny-backed creatures”).
lously saved his companions from highway robbers by throwing powdered rhinoceros horn mixed with dust on the brigands. Since the man was an Indian, it can be assumed that the belief in this quality of the horn was current in India. It may very well be that some other alleged uses of the rhinoceros horn come from the same country. This seems to be implied in the statement of al-Qazwini and others about the effects of the protuberance of the rhinoceros horn which is “only to be found in the possession of the kings of India.” At first sight this statement looks, of course, suspect, since a branch of the rhinoceros horn can be nothing but a fanciful fabrication of the mind. If one wants to attach any significance to al-Qazwini’s

![Image of Sharav (sarahha)](image1)

Fig. 3.—Sharav (sarahha). Detail from an embroidered Indo-Portuguese bedspread. Goa, seventeenth century. Brooklyn Museum. (After 187, fig. 9.)

passage one would first have to explain how the notion of such a branch could have arisen.

One possible solution of the riddle might be the psychological effect of seeing the famous horn for the first time. It could very well be imagined that the Muslims must have been amazed at its insignificant dimensions. Its small size was contrary to the traditional ideas about the horn so clearly demonstrated by the pictures and it also fared very poorly when compared with the tusks of the elephant. Since the horn was in high repute it must have been difficult to imagine that this was the whole of it and therefore the myth might have arisen that this particular object in royal possession—perhaps a cup like the ones still kept in the Shōsōin—was just a very power-

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5 147, vol. 1, pl. 31; vol. 7, pl. 8. See also 246, p. 55.
ful branch of the main horn. This interpretation was all the more natural because everybody was acquainted with branched antlers of a stag with which it had been sometimes compared. All this sounds reasonable enough to take the branch of the horn out of the range of myths and into that of reality. Once this has been established there seems no reason to doubt that the effects of the "branch" in the possession of the kings of India reflect Indian beliefs in the extraordinary qualities of the horn itself.⁶

It is a classical reference which points to India as the country of origin of a yarn first told in the Islamic period in the *Akhbār al-Ṣin wa’l-Hind* and then elaborated by al-Mas‘ūdi, namely that the karkadann has no articulation in its legs and feet and therefore has to sleep erect, leaning against a tree. Aelian suggests an Indian origin of this story by telling us that the Indian unicorn called *καρτάζωνος* kartažōnos (which corresponds to Sanskrit khaḍga-dhenu and Arabic karkadān) has no joints in its feet.⁷ This motif seems to have spread to the East, as far as China. In the T’ang period rhinoceroses were said to have been captured with the help of

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⁶ This high repute of the horn in India first attested by classical writers such as Ctesias, Philostratus (205, vol. i, p. 234), and Aelian (14, vol. i, p. 76: book 3, chapter 41, and p. 104: book 4, chapter 52) lasted throughout the centuries. In the sixteenth century the Portuguese physician Amatus Lusitanus writes:

"The men of our Portuguese nation who have penetrated the interior of India... say that its horn (i.e., of the unicorn) is greatly prized by the Indian kings, and also those who have practiced medicine for some time in that country and have then returned home say that in India there is no stronger or more dependable antidote against poison than the horn of the unicorn" (242, p. 143).

Lately A. H. Godbey has suggested that the antidotal power of the rhinoceros horn may not have been in Ctesias' original account, since neither Aristotle nor Pliny mention this feature, though both were familiar with his text and used it in their writings. It would thus appear to be a later interpolation of the text which is preserved only through quotations in other authors. If this plausible assumption should prove to be correct (and the lack of any reference to it in the early Indian literature supports it), the belief in the magical virtue of the horn during Roman times would probably go back to Chinese superstitions which were imparted to the Western world when Roman traders exported the horn for the Far Eastern market (109a, pp. 262-263, 277-278).

posts built of rotten timber which gave way as soon as the animal leaned against them, leaving the jointless monsters helpless on the ground. Such an alleged hunting custom is also described in the West, but here it is the jointless elephant which comes to grief by resting against a partly sawed tree. In the Physiologus the story of the elephant without joints in his legs is again connected with India, but Strabo speaks about it in connection with the African species. It remains, of course, a puzzle how such a myth could be connected with the elephant whose habits were familiar to so many Indians. It could perhaps be imagined—as Laufer has thought—that the story was first connected with the little-known rhinoceros, since it is found in classical, Muslim, and Chinese sources. Later on the myth possibly was transferred to the elephant in regions and by people unfamiliar with the elephant, just as Caesar attributed the jointless legs to the elk and Pliny to the aehlis.

There are, however, certain points which speak against Laufer’s theory. Thus, it seems to be a fact that the elephant sleeps standing up, sometimes leaning against a support. He assumes this position “not from any difficulty in lying at length on the ground, but rather from the coincidence that

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9 154, year 1913, pp. 361-362; 165, p. 146. In the Chinese accounts no direct reference to India is made, only to “maritime people” living in a mountainous country.

9 This myth goes back to Ctesias, just like that of the unicorn (274, column 2249). It was opposed by Aristotle who denied that the elephant sleeps standing and stated that it bends its legs and settles down (27, book 2, chapter 1: p. 498a, lines 8-13. Cf. 275, p. 30).

10 208, p. 130. The passage is quoted in 164, year 1913, p. 362. The motif in the Physiologus has been traced back to Ctesias (277, p. 30).

11 252, vol. 7, pp. 324-325. Many classical, medieval, and renaissance references to this elephant myth are given by Tennent (256, pp. 32-38). We quote one from Troilus and Cressida: “. . . the elephant hath joints, but none for course: his legs are legs for necessity, not flexure” (act II, scene 3).

12 154, year 1913, p. 363.

13 See above, p. 99.

14 The jointless elephant occurs also in Muslim literature, e.g., in al-Mas‘üdi (184, vol. 3, p. 8) and al-Mustawfi (191, pp. 32-33, translation, pp. 23-24).

15 66, pp. 352-353.

16 209, vol. 3, book 8, pp. 30-31. Rackham thinks that the aehlis is perhaps the moose or reindeer and presumably a vernacular name.
the structure of his legs affords such support in a standing position that reclining scarcely adds to his enjoyment of repose. Elephants in captivity have been known for months together to sleep without lying down." On the other hand the rhinoceros lies down on its side to sleep and it sits up with its legs doubled under it or it rests on its haunches. This is significant, although the animal has also been observed to rest and sleep while standing. All this points to the conclusion that we do not necessarily have to accept Laufer's theory of a priority of the rhinoceros myth which was later on transferred to the elephant and other animals. This is one of the many cases where we still stumble in darkness and have yet to bring definite proof to show from where and how the myth was disseminated. Certain data speak for India but they are not conclusive enough.

E. CHINESE INFLUENCES

It is unusual to find Chinese ideas incorporated in a Muslim concept but the case of the rhinoceros was exceptionally favorable for such a process. The Arabs were among the chief exporters of rhinoceros horn to China. The Chinese interest in horns with special designs must have been known to the traders who were anxious to get the best possible prices. They in turn told of the queer Chinese ideas when they were back home and thus Chinese concepts found an echo in Muslim writing. It is significant that it was a book revealing mercantile relations with the East, the Akhbār al-Ṣin wa'l-Hind, which apparently was the first to speak of the various patterns on the horn. As has been shown by Laufer, writers of the T'ang period already speak of the "likenesses to all things" in high-grade rhinoceros horn, although the Chinese sources speak more conservatively about grain or flower pattern, impressions of beans, etc., when they mention specific motifs.
However, Wang Pi-chih, a Chinese writer of the end of the eleventh century, gives an elaborate repertory of these designs which include not only plants and animals but also parts of the dress, deities, scenery, buildings and so on, so that it is obvious that a rich lore had developed once the horn had been used not only for official girdles, but also for cups, knife handles, scepters, footrules, and other implements during the T'ang period. On the other hand, the lack of specific descriptions of grain pattern in other natural products indicates that the whole concept in Muslim literature is obviously borrowed. Since the idea is foreign to the unicorn lore of

21 165, p. 149 (footnote 7 of preceding page). The Chinese author seems to speak of natural pattern in the horn, but he indicates that these designs are made more easily discernible by the work of craftsmen. He says: "When the horn is completed into a carving, as if it were a veritable picture, it is highly esteemed by the people."

22 The earliest reference to the horn of the rhinoceros (hsi) in China so far found is from the year 311 B.C., that is, from the end of the Chou dynasty. At that time it was already regarded as an object of value and together with 500 boats, 500,000 arrows, and elephant tusks was sent as a gift by the King of Yüeh to the State of Wei. In a slightly later text it is indicated that objects were made of rhinoceros horn and ivory (46, p. 328).

23 On the use of rhinoceros horn for the Chinese costume, see Laufer (165, pp. 142 ff., footnote 4). The horn used for girdles had to be of special quality, owing to their official use, while that used for vessels could be of lower standard. "If the specks are deep in color, the horn is suitable to be made into plaques for girdle ornaments; if the specks are scattered here and there, and light in color, the horn can be made only into bowls and dishes" (165, p. 141, footnote 7, and pp. 143-144. See also above, p. 54, footnote 8).

24 Such objects are illustrated in 147, vol. 1, pls. 21, 24, and 31; vol. 3, pl. 8; vol. 6, pls. 18, 19, 20-23, 25-31, and 37; vol. 7, pls. 8, 51, 56, 58, and 59; vol. 10, pl. 22; and vol. 11, pls. 46, 49-51, 54, and 55.

25 As far as I am aware the descriptions are rather general and nonspecific like that of Aḥmad Tūsī who at the end of the twelfth century states that the bark of the khadhink tree (خَذَنْكِ) "shows pattern ... as if worked by a Chinese painter," adding soon afterward that "it shows patternlike damascening in steel" (134, p. 213). It seems characteristic that according to al-Birūnī the term خَلْنِج khalanj does not only mean onyx, but also "all things which show colored lines and figures such as cats, foxes, civet cats (?), giraffes, and especially a certain wood of which, in the lands of the Turks, tables, cups, drinking vessels, and similar objects are made" (134, p. 214).

26 It may, however, be possible that the alleged designs on the horn of the rhinoceros induced Muslim artists to carve the outside of the much more common elephant tusks with various animals. This custom is first traceable in the
the classical world and, from all we know, apparently also to
that of ancient India, the borrowing probably comes from
China, although Muslim writers, in some instances, may have
exaggerated Chinese ideas of the designs.27

In a few other cases, it is not quite certain that ideas which
the Muslims thought to be of Chinese origin derived actually,
or at least exclusively, from that source. To this group be-
longs the lurid account of al-Gharnāṭi (repeated by al-Damīrī)
of how the kings of China tortured a person by having him
licked by the karkadann, a treatment which separated the
flesh from the bones. (The idea of a thorny tongue is—as
we have seen—also to be found in the story of the flight of
the sinād calf from its mother). It is true that a Sung pub-
lication speaks of the prickly surface of the tongue of the
rhinoceros,28 but so does the Venetian Marco Polo who tells
of the spikes on the tongue of the Sumatran rhinoceros which
it uses when attacking a person.29 The feature is even to be
found in Pliny.30 On the other hand the Emperor Humāyūn
is said to have told this story about wild yak.31 The story of
the prickly tongue32 may therefore have come to the Islamic
world from quarters closer than China.

In the report of al-Gharnāṭi (repeated by al-Damīrī) the
inlays of rhinoceros horn on thrones are not specifically called
a Chinese custom. Since they are mentioned together with the
alleged designs on the horn and the Chinese girdles, it is, how-
ever, not impossible that the Muslim writers had a Chinese

28 Su Sung, author of the T'u ching pên ti'ao (165, fig. p. 140).
30 211, p. 340, footnote 1. I have not been able to trace the passage in Pliny
to which the editors of the Marco Polo edition refer.
31 210, vol. 1, p. 277, footnote 3. For a reference to the prickly tongue of wild
oxen of India see 99, p. 283, footnote to p. 267.
32 Laufer explains the fable of the prickly tongue of the rhinoceros in the
following manner: “The animal mainly feeds on herbage and the alleged or
real observation of its inclination for brambles led to the conclusion that its
tongue must be thornproof and prickly” (165, pp. 140 ff., footnote 7, reference
on p. 141).
origin in mind. I have not been able to find a reference to such a Chinese custom in the Sung literature, but there was a court atelier during the Yüan period which amongst other things turned out couches inlaid with rhinoceros horn and ivory.\footnote{165, p. 142, footnote 4 (reference on p. 143): The official in charge of this atelier was appointed in 1263, and there were 150 workmen active in it. In view of the relationship between the rhinoceros horn and maritime ivory (which will be discussed in the following section) it should be pointed out that narwhal and walrus tusks were likewise used in the making of thrones. Old Russian stories speak of precious chairs made of this material, there called “fish teeth” (164, year 1013, p. 338, quoting von Buer, 34, p. 10). The best known example is, however, the Danish throne built of narwhal tusks, which was made in 1662-1665 (238, pp. 240-245, figs. 250 and 251).}

China, however, influenced the Near East not only in the conception of the karkadann and its horn, but also its iconography. In spite of the distance between the centers of the two civilizations, Chinese representations of unicorns had probably greater influence on the minds of Near Eastern artists than those from any other country. In certain cases the Far Eastern influence is obvious. There is first of all the karkadann on the title page of the al-Qazwini manuscript in the Metropolitan Museum (pl. 17). It has the characteristic shape of the ch'i-lin of the Ming dynasty with its split hoofs, scales, and bushy tail. The only difference from the contemporary Ming examples would be the wings instead of the flames, and, what is more important, the single horn instead of two as we find them, for instance, on the Ming mandarin squares.\footnote{68, fig. 4b.} However, the literary references in the Chinese encyclopedias of that period follow the older translations and speak of a single horn,\footnote{Kind information of Dr. Cammann.} so that an illustration following a literary source or a pre-Ming model might have influenced the illuminator of the Persian title page.

A Chinese model is also the source for the miniature of the shādhahvâr in the al-Qazwini manuscript in the Princeton University Library (pl. 43, upper). Its lionlike body, tail, and paws together with the use of a single horn seem to indicate that the animal is derived from representations of the hsieh-
The main difference between the two animals is the color, which in the Persian miniature is red instead of white. If this change is not due to the fact that the Persian artist arbitrarily changed the color, it might be surmised that the ultimate prototype was a Chinese woodcut which showed the animal only in black and white.

Far Eastern influence may also be assumed in the two Shāh-nāmah miniatures of the Mongol period in the Myers collection (pl. 24). The basis for this supposition is the fact that the Chinese knew of a lionlike creature with a single horn (fig. 4), and as we have seen in our discussion of Indian influences, China also knew from the early thirteenth century on, at least, the iconographic type of a single-horned cervine rhinoceros. Thus there is a certain possibility that the prototypes of these monsters came from the Far East. This is made more likely by the fact that these animals show flames above their front legs, a typical Chinese feature which occurs on dragons and on some other animals in the pre-Ming period. But while there is no doubt about the Far Eastern origin of

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68, fig. 4a.

The Freer Gallery of Art has a T'ang mirror with a large dragon with flames emanating from above the front legs (No. 38.8) and another from the same period showing two horses, one apparently even horned, with flames above the front legs (No. 44.5; pl. 48, upper). Other mirrors from the Sui and T'ang periods with such flame-endowed horses in 267, part 2, vol. 2, pls. 117 and 129. Dragons of the Sung period commonly show flames.
this flame motif, both the shape of a lion and of an antelope for a karg could be explained by certain details given in the Shāh-nāmah and other Muslim texts.

The ch'i-lin, the hsieh-chai, and the flame motif should be regarded as "chinoiserie" in Muslim art. Fairly common as these and some other Chinese mythical creatures are in certain periods, they still represent an unassimilated foreign element. There is, however, one Chinese animal which became thoroughly integrated into Muslim art, namely that of the buffalo or oxlike type of karkadann. Such a statement might seem surprising as the many references in Muslim texts would seem to point toward an indigenous concept of this sort. However, a confrontation of the oldest example, that in the Manāfī' manuscript of the Morgan Library, with a Chinese painting will quickly dispel any doubts about the Far Eastern origin of the type.

For comparison we have selected a Buddhist painting in the Freer Gallery, showing "Lohans moving through forests and sea" (pl. 12). It dates from the Ming period, and is thus centuries later than the Mongol Manāfī' miniature, but its rhinoceros corresponds to the descriptions in T'ang and Sung literature and may thus be regarded as representative for the earlier periods. The first figure on this scroll is a lohan riding on a buffalolike animal carrying on its forehead a single large horn bent forward. There is no doubt that this bovine animal is the one-horned variety of the hsi rhinoceros of the Chinese which is described in the fourth-century edi-

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38 Freer Gallery of Art, No. 29.274. Sirén attributes the scroll to the late Sung period and to Fan-lung (a priest) (244, pp. 75-78, pl. 93). A. G. Wenley attributes the painting, however, to the late Ming period; he thinks that the painting could only be a very free copy of Fan-lung's work.

39 That a rhinoceros with a forward-turned horn goes back to a much earlier period, is demonstrated by the figures on a kettle attributed to the Shang period (165, fig. 18).

40 There is also proof that the hsi-rhinoceros and the ox came to be regarded as identical animals so that in legends the names of the two were exchanged (90, pp. 328-329). In this connection it is also significant that although from post-Han times down to the present both ssū and hsi mean rhinoceros, the first-named animal was originally a wild bovine of large size and formidable nature, probably the gaur, while hsi stood always for rhinoceros (46, pp. 322-330).
tion of the Erh-ya Dictionary in the following terms: "... the hsi resembles a water buffalo with a pig's head, has a large stomach and short legs. Its legs have three hoofs. Its color is black. It has three horns, but there is also a one-horned type." When one now compares this Chinese animal with the Persian karkadann, one finds the same large penetrating eyes, long ears, wide nose, the hump, and the feet. How slavishly the Persian artist followed the Chinese prototype is particularly shown by the painting of the horn with its peculiar curve. The artist first placed it farther down on the head, with the curve going backward, thus coming close to the actual position of the horn of which he seems to have had some idea. But another look at his painted model of Chinese inspiration must have shown him his "mistake," which he hurried to make good, although traces of his first endeavor are still noticeable under the leaves of the surrounding shrubbery. The Chinese painting even explains a peculiar feature in the Near Eastern miniature, namely the zebralike stripes between the front legs and the head. They are the misunderstood skin folds of the neck which, like the folds in the hides of the famous "elephants" in the same manuscript,43 were turned into a pattern by the artist; and since the painting from which he worked apparently showed the ribs of the animals, he converted these, too, into stripes. All these features reveal an integrated recreation after a foreign model.44

It may very well be that the Chinese model not only influenced the painters, but also the writer of the Persian version of the Manāfī. He states that the karkadann closely resembles a buffalo, that its neck is strong and long, that the single

41 The translation was kindly supplied by Dr. Cammann.

42 Laufer (165, p. 39) had already pointed to the similarity of the Morgan miniature to a woodcut illustrating the Erh-ya. Since he compared it also with the representation of a bovine animal on an Assyrian obelisk (which had erroneously been associated with a rhinoceros), he diminished the importance of his discovery.

43 154, vol. 5, pl. 320A.

44 Until recently it was generally believed that the group of miniatures in the first section of the Manāfī-i hayavān to which the karkadann belongs was painted in pure Abbasid style and thus devoid of any Far Eastern influence.
horn on the forehead is crooked and near the eye and that the tail and hoofs are similar to those of a buffalo. All these details are very specific and since they tally better with pictures of the bovine type of Far Eastern extraction than with the real animal, it could be assumed that such pictorial records are reflected in the text.

In several representations the Near Eastern artists did not give the horn on the forehead of the bovine rhinoceros the forward curve which we found in the Manāfī' miniature and in the Ming scroll of the Freer Gallery. They replaced it by a long straight horn. This was due to another outside influence of which we shall have to speak in the next chapter.

What has been said regarding the origin of the iconography of the single-horned bovine karkadann in Muslim painting may also apply to the double-horned variety which shows, as we have seen, a horn on the nose and a longer one on the forehead of the animal (pl. 15, right). The same type of rhinoceros is found on a Chinese mirror said to be of the T'ang period (fig. 5). The type persisted throughout the centuries, as demonstrated by a Ming mandarin square, formerly in the collection of Mrs. Krenz, which shows the same spotted bovine rhinoceros with two horns which we find in the Princeton miniatures of the karkadann and the šinād. In spite of this close parallel between the double-horned rhinoceroses in Far and Near Eastern representations, a case for a different explanation of the Muslim version can also be put forth. The double-horned variety seems to appear in the Near East only after the correct position and the proper shape of the horn in the single-horned variety has become known and has been applied on the nose of the animal in a number of miniatures. Even at this progressive stage the artist followed, however, traditional patterns of thought and design as we noticed, for instance, in the case of the antelope-karg in the Shāh-nāmah of 1605-1608 (1014-1016) in the

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45 Figure 5 is after 72, chapter 40, p. 56A; see also 261, part 2, vol. 2, pl. 148.
Kind information of Dr. Cammann.

46 Dr. Cammann kindly informed me about this textile, the present whereabouts of which is unknown.
Metropolitan Museum. Could it not be assumed, therefore, that the double-horned variety is nothing but the traditional bovine animal with the straight horn on its forehead now supplemented by an additional nasal horn? In this case we would not have to assume a Chinese prototype for the two-horned version of the karkadann.

Fig. 5.—Chinese mirror. T‘ang period (618-907). (After 72, chap. 40, p. 56.)

F. THE LATE MEDIEVAL WORLD

After having surveyed the pertinent classical and Oriental sources, there remains now the sole task of exploring a possible interrelation between Muslim and medieval European writings on the unicorn. Such an investigation is important because in the West it is generally assumed that the extraordinary reputation of the horn of the unicorn as a detector of poison was due to the influence of Arab doctors.47 Their writ-

47 242, pp. 140-142; 238, pp. 189 and 200.
ings are supposed to have caused the rise of the new belief, of which there is no trace in the medieval world before the thirteenth century.48

When one wants to investigate this Arab influence one naturally starts with the karkadann which is the unicorn par excellence in the Muslim world. In investigating a possible relationship one is, at first sight, permitted to disregard the great difference in physical appearance between the short, curved rhinoceros horn and the long, straight tusk of the narwhal which, to the late medieval mind in the West, was the true horn of the unicorn.49 After all, the representations from various Islamic countries seem to indicate that the Muslim usually regarded the horn of the rhinoceros as long and straight. There is, however, the surprising fact that with the exception of al-Qazwini in the thirteenth century, his somewhat later follower, al-Mustawfī, and the latter’s contemporary, Ibn al-Wardī, no other Muslim author consulted here speaks of poison in connection with the horn of the karkadann. In the eleventh century, Ibn Bukhtīshū’ deals with the medicinal uses of the animal but he does not mention the horn or, for that matter, any other part of the body, as an antidote against poison; nor does the late thirteenth-century Persian zoological pharmacopoeia, the Maṇāṣī’, speak of it. Al-

48 Hildegar of Bingen (1098-1179), though speaking of the medicinal qualities of various parts of the unicorn, does not mention the alleged virtues of the horn. Albertus Magnus (1206-1280) “makes little of the horn’s magical virtues and thinks they should be investigated further.” Pietro d’Abano (ca. 1250-1318) however, “during his exploration of Arabic lore acquired a firm faith in the alicorn . . . and indeed if one were asked to name a single writer to whom the European belief might be attributed with least exaggeration, one could not do better than to choose this Peter” (242, pp. 130-131).

49 Even in the European mind the rhinoceros horn often took the place of the true “alicorn” or narwhal tusk. (Alicorn from Italian alicorno and French licorne is used by Shepard to avoid cacophonous [242, p. 101, footnote 1, and pp. 141-142] and it seems a good term to use.) The tip of a rhinoceros horn, presented by the prior and the brothers of the Monastery of St. Mary of Guadalupe, Spain, to Pope Gregory XIV, in 1590, is said to have been used in powdered form, as medication in the pontiff’s last illness. The horn with its fine case (of which I learned through the kindness of G. Schoenberger) is now in the American Museum of Natural History, New York (168, p. 532). Other such horns are mentioned by Shepard (242, p. 133).
Nuwairî mentions the poisonous quality of the horn only as an explanation for the death of the gored elephant without saying anything about the possibility that it could be used as an antidote for other poisonous substances, especially in human food. Even al-Damîrî, the most extensive writer on the subject, gives no information on this point. Furthermore, al-Qazwînî does not seem to stress the antidotal property; he merely mentions it—after having told his readers that knife handles are made from the horn and without alluding to a possible connection between the two uses. Finally, neither al-Qazwînî nor al-Mustawfî mention the “sweating” of the horn, which in the case of the alicorn is supposed to have indicated the presence of poison. Thus the earliest Muslim source for the antidotal quality of the karkadann horn is almost contemporary with similar references to the alicorn in European literature, and it lacks a feature of possible importance, the sweating. This makes it imperative to find out first how al-Qazwînî came to speak of the horn’s antidotal effect and then whether it is actually the karkadann which could have given rise to the late medieval myth of the alicorn’s medicinal quality.

One might be tempted to assume, on first thought, that the sudden rise of the belief in the antidotal qualities of the karkadann horn was due to Indian or Chinese influence, which in other instances proved so important. When one examines the al-Qazwînî text closely one notices, however, that its power to nullify poison applies to the horn as a whole and not to the more effective “protuberance in the possession of the kings of India.” Hence, in the Arabic text this specific virtue is not connected with beliefs which can be traced back to India. Since relevant passages in Sanskrit literature seem also to be lacking, the sources for an Indian origin of the horn’s antidotal

242, p. 119. The history of the “sweating” of the alicorn is, as far as I know, not yet explored, so that I am unable to state how early this feature occurs in the West.

Pelliot suggested that the antitoxic quality of the rhinoceros horn in India may be due to a popular etymology which connected viṣāṇa “horn” with viṣā “poison” (98, vol. 2, p. 675). If this should prove to be correct, it may be
nature are the classical accounts of Ctesias, Philostratus, and Aelian in which the miraculous virtue is associated with cups made of the horn. Drinking vessels made of the horn are hardly ever mentioned in Muslim texts, nor have medieval cups—to my knowledge—turned up in Muslim collections. The same objection applies to the assumption of a Chinese influence, since the Chinese likewise stressed the use of cups. Indigenous sources, however, leave no doubt that from early times on the Chinese attributed an antidotal virtue to the horn. Arabic and Persian texts give as little indication of a

regarded as the reason why the belief seems to have existed for a very long time without having found expression in the higher form of Sanskrit literature.

I have come across only two cases from past centuries: The royal vessels made of rhinoceros horn of which Ibn Faḍlān speaks are called  طیفوریات (134, p. 34), a term which Zeki Validi translates as "grosse Präsentierteller" (134, p. 77). In view of the shape of the horn, this can hardly be the proper interpretation of the Arabic word. Dozy renders it, however, as "plat creux et profond" (86, vol. 2, p. 48) which together with other dictionary definitions seems to establish "deep vessel" as its basic meaning. This term could thus very well have been applied to a drinking cup made of rhinoceros horn.

The second reference is to be found in Bābur's memoirs. He mentions a boat-shaped drinking vessel made of the horn, but he does not speak of its antidotal property (32, vol. 2, p. 389). In modern times Reinhart speaks of a bowl of rhinoceros horn made in India which had the alleged antidotal quality (219). Brehm (53, vol. 12, p. 623) also speaks of such drinking vessels. Meyerhof mentions a cup, a bowl, and a bottle offered to him in Cairo; of these only the last-named object seems to have been regarded as active in detecting poison (98, vol. 2, p. 680).

245, p. 55. The horn was also used for stirring food, since, owing to this action, poisoned food started to foam: "The horn is a safe guide to tell the presence of poison: when poisonous medicines of liquid form are stirred with a horn, a white foam will bubble up, and no other test is necessary; when non-poisonous substances are stirred with it, no foam will rise." (165, p. 138, quoting Li Shih-chên, a fourth-century authority.)

As to the origin of the belief Laufer has this to say: "The Taoist adept and writer Ko Hung (died in A.D. 330 at the age of eighty-one) is apparently the first Chinese to speak of the poison detecting quality of the horn, which on contact causes liquid poison to foam. This property is accounted for by the fact that the animal while alive feeds particularly on poisonous plants and trees provided with thorns and brambles." This poisonous food is then thought to affect the horn and according to the principle that poison cures poison the horn becomes an efficient antidote (164, 1915, p. 325; 165, pp. 75, 128-139, and 154, footnote).
Chinese source for this particular belief as they do of an Indian one.

When all these facts are considered one can only say that Indian or Chinese conceptions could have affected the Muslim mind. On the other hand, it seems unlikely that such influences and such influences alone suddenly caused al-Qazwīnī to include the information about the antidotal quality of the horn in his chapter on the karkadann. One is, therefore, forced to a more plausible solution of the riddle.

One might be inclined to think that classical literature could qualify as a possible source for the myth, because from the time of Ctesias the horn of the rhinoceros (or whatever the animal might have been called) had the reputation of protecting against poison. Yet if classical writing were to be held responsible for this myth, traces of it would have been found at earlier times (for instance in the text of Marvazi) when the influence of classical authors was stronger than in the time of al-Qazwīnī. It seems, therefore, that the solution of the whole question does not lie in this direction. We have to look for it elsewhere and with other methods.

In the course of this investigation, it has been found at times that in an ancient source two different animals were thought to be identical or were at least confused in the minds of the people. This was usually the case when these animals belonged to little-known species and had one or more characteristic traits in common. This not infrequent occurrence might give us the required clue. We therefore have to investigate whether or not there is a rare animal sharing certain features with the rhinoceros which possesses a horn or horns endowed with antidotal virtues. From such an inquiry we find that a substance often thought to be a horn does exist, although the animal from which it derives is mysterious and not properly identified.

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84 The classical writers besides Ctesias are Philostratus (Apollonius of Tyana) and Aelian (see 74, pp. 8-11, and 248, pp. 27, 35, and 39). As pointed out above, the passage in Ctesias may, however, be a later interpolation based on Chinese beliefs which trade brought to the West (see p. 99, footnote 6).

85 Karkadann and sharav; karkadann and harish; karkadann and sinād. There are many such cases.
Al-Biruni tells us that the khutū (ختو) or khutūw (ختو) is highly treasured, especially by the Chinese and the Turks of the East, because it is believed that this animal substance like the bezoar sweats when it approaches poison. About three centuries later—in 1339—al-Mustawfi speaks of the same miraculous properties but no longer restricts the belief to the Chinese and states that poison has no effect on anyone who carries it since he can see it sweating and be warned. Two other authors, al-Akfāni (died in 1348/749) and al-Ghaffārī (wrote in 1511/917), likewise testified to the same quality, al-Akfāni furthermore adding that the khutū was a favorite with the Turks and Chinese. This particular horn, however, did not always have a reputation for possessing antidotal properties, because the Hudūd al-ʿĀlam written in 982 (372) and thus our earliest source mentions only that knife handles were made of this material. This earlier use as knife handles which may have continued when the antidotal

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56 The spelling khutū is found in the Hudūd al-ʿĀlam (129, pp. 62, 84, 92, 94, 96, and 97), Marvazi (183, p. 5, line 10, and p. 11, line 7) and al-Mustawfi (191, Persian text, p. 20) and thus seems to be the Persian version. Khutūw is the form chosen by M. J. de Goeje in his editions of al-Ṭabarī (139, p. 289, line 1) and Ibn Hawqal (135, p. 337, line 14; see also 111, p. 222), and it is also used by E. Wiedemann for his translation of the pertinent passages from al-Biruni (277, p. 353); it apparently represents the Arabic form.

57 Al-Biruni’s Kitāb al-jamāḥir fī maʿrifat al-jawāhir was not available to E. Wiedemann when he translated the passage from this text (277, pp. 346-347). He had to use al-Khūzī’s Kitāb mīzān al-hikma, written in 1131 (315), which preserves a section of al-Biruni’s work (277, pp. 353-355, also quoted in 164, 1913, pp. 315-316).

After this manuscript had been finished, F. Rosenthal kindly referred me to the original passage which is now available in the Hyderabad edition of 1355 H. (458, pp. 208-210). The two texts are not identical; they vary a great deal, even in subject matter. An account of the special features of al-Biruni’s original text is given on pp. 138 ff.


60 277, pp. 357-358 quoting G. Jacob; the passage is reproduced by 164, 1913, p. 317. The original texts of al-Akfāni and al-Ghaffārī were not available to me.

61 129, pp. 84 and 96. On p. 94 the khutū is called a horn; al-Mustawfi refers to it as the animal itself.
virtues became more widespread, links it with the horn of the karkadann which, according to al-Birüni, Marvazi, al-Qazwini, the Manafi', and al-Mustawfi was also used for this purpose. Both horns were also greatly in demand and therefore sold at high prices. Even as late as the sixteenth century the khutü horn had a great reputation since al-Ghaflari tells us that the pādishāh, apparently the Sultan of Turkey, bought it at a high price and that its fame reached as far as China and the Maghreb.

Additional remarks in the Muslim sources throw further light on the physical character of the horn without giving any obvious clues to its identification. The color is said to range from white, yellow, green, and red to gray and black. The curved specimens are the highest in price (al-Birüni). The price for a young horn is higher than for an old one (al-Mustawfi) because the young ones are fresh and firm while later on they become dark-colored and soft (al-Ghaflari).

There is no doubt that the animal from which the khutü horns came is even more mysterious than the karkadann. I have not found a single writer who states that he had ever seen the animal or quoted someone else who was more fortunate than he in this respect. It is therefore not astonishing that even the zoological class to which the animal bearing these horns belonged is uncertain. Al-Birüni quoted anonymous authorities to the effect that it was the bone from the head of a bull; Tusi thought it to be a snake bone, and al-Akfani attributed it to a bird. The most important of these identifications is that given by al-Birüni, as it is the oldest.

82 The use of rhinoceros horn for the hilts of Egyptian swords is reported as late as the early nineteenth century by J. L. Burckhardt (98, vol. 2, p. 690). Since the material has very fine coloring and can be beautifully polished, it is well fitted for the purpose quite apart from other intrinsic values. About the use of khutü horn for knife handles see below, pp. 117, 121 ff., 726-727.

83 Al-Birüni states: "Its best quality is the one passing from yellow into green, next comes one like camphor, then the white one, the one colored like the sun, then one passing into gray." Al-Mustawfi says that it is yellow in color. Al-Akfani quotes the Ikhwän al-Râziyân, the two Razi brothers, that it "changes from yellow into red. Then comes the apricot-colored one, then that passing into a dust color and down to black." According to al-Ghaflari its "color is yellow and the yellow inclines to red."
and therefore probably closest to the early forms of the myth. Here we notice again how the lore of the khutū and that of the karkadann could become intermingled, since in either case the horn is said to belong to a bovine animal. The two other identifications given above are due to later importations of Asiatic myths from farther east;⁶⁴ they do not seem to be of any consequences for the growth of the main conceptions of the khutū horn and reveal only the general mystification about its true origin.

The information about the countries from which the horn is supposed to come is more specific than that on the animal itself, but this does not help to make up for the general uncertainty. The Ḥudūd al-ʿĀlam lists the following regions as exporting the horns: The Tūlas mountains southwest of Lake Balkhash,⁶⁵ China,⁶⁶ Tibet,⁶⁷ the Turkish Toghuuzghuz country in eastern T'ien-shan,⁶⁸ and finally the Kirghiz country which supplied large quantities.⁶⁹ According to al-Iṣṭakhrī the horn

⁶⁴ Laufer (164, 1916, pp. 382-384; also 166, p. 566) has shown that the khutū horn, said to come from the forehead of a large bird, is actually the enormous bill of the bucero or hornbill which is carved by the Chinese and Borneans. According to Malayan beliefs shavings from it become blood-red when placed in a poison dish. There is also the bird al-khathaq (الخثاق) of “China, Babylon, and the lands of the Turks.” Al-Damīrī says of it that it dies in the presence of poison and that people make knife handles from its bones since it sweats in the presence of poison (77, vol. 1, p. 251; 78, vol. 1, p. 667, quoted in 164, 1916, p. 383, footnote 1). References to the swooning or dying of birds are a regular feature in Indian literature (70). Disregarding discritical points, khathaq is written in the same way as chatuq, of which we have to say more later on (see pp. 122 ff.).

There are altogether seven different zoological definitions for khutū in Vullers, Lexicon (268, vol. 1, p. 659). One of them states that it is a thousand-year-old snake, an explanation which goes back to the Liao Annals (166, p. 566).

⁶⁵ 129, p. 62.
⁶⁶ 129, p. 34.
⁶⁷ 129, p. 92.
⁶⁸ 129, p. 94.
⁶⁹ 129, pp. 96 and 97. The Kirghiz country is also quoted by al-Birūnī though with certain doubts. The Ḥudūd (129, p. 97) mentions, however, that a certain clan of the Kirghiz hunts not only for furs and musk, but also for the khutū horns. The importance of the Kirghiz region as a major source of the khutū is corroborated by a Chinese source. According to the T'ang Annals the ku-tu is mentioned as one of the wild animals of the country of the Kie-kia-se; i.e., Kirghiz (Laufer, 164, 1916, pp. 370-371).
is exported from Ṣaghāniyān (the region north of Tirmidh on the Oxus),\(^{70}\) while al-Ghaṣfārī mentions the lands of the Berbers and Turkestan as the habitat of the animal.

It is not surprising when, in this nebulous land of uncertainty, yet another horn appears to add further confusion. Al-Birūnī speaks, in connection with the regular khutū, of the tooth of a fish 1 cubit long which the Volga Bulgars bring from the northern seas.\(^{72}\) In Mecca, where it is imported, it is regarded as “white khutū.” The tooth is so much in demand that the Egyptians “who crave it” paid two hundred times its value. Al-Birūnī does not give the reason for this extraordinary popularity. When he states that white knife handles are sawed out of the tooth he obviously does not tell the whole story. Since it is called the “white khutū” it must share another more specific and rare quality with the colored khutū, not just the prosaic function of serving as a material for knife handles. The most obvious connection, and the one which would easily explain the high price for both varieties, is that the tooth has the same poison-detecting faculty as the ordinary khutū. It will be our task to substantiate this assumption.

Unfortunately the description of the physical character of the “white khutū” is very meager. There is, for instance, no indication whether the tooth is straight or curved. In other respects, al-Birūnī’s report is more specific but even so not very clear. According to him one is able to distinguish the “white khutū” from ivory, since he points out that the various designs displayed on it give the appearance of wriggling.\(^{73}\)

There remains now only the question of what the khutū horn actually is; and it is here that we run into great if not

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\(^{70}\) Al-Iṣṭakhri (139, vol. 1, p. 289, line 1); Ibn Hawqal (135, p. 337, line 14). If Pelliot’s emendation of a passage of Abū Dulaf Mis‘ār b. Muḥāhil (of about 940 [329]) is correct, still another place of origin would be among the Chigil; in this text it is described as a cow (98, vol. 1, p. 211; vol. 2, p. 679). About the Chigil see Minorsky’s comments in 129, pp. 297-300 and maps V and VI.

\(^{71}\) 277, p. 354; 260, p. 50.

\(^{72}\) The German translation of Wiedemann uses the word “durcheinanderkriechen.” Al-Ghaṣfārī states that “designs are displayed in the khutū as in damascening.”
insurmountable difficulties. This is not the first time that a scientific searchlight has been focused on these mysterious horns. Just before and after World War I they were discussed by a number of Orientalists, who proposed rhinoceros horn, mammoth ivory, walrus tusks, and narwhal teeth as possible solutions. Rhinoceros horn, as suggested by several German scholars, seems to be out of the question as the original meaning because al-Birūnī would probably have recognized it as such and he would have spoken of its antidotal qualities in his account of the rhinoceros. The Ḥudūd al-ʿĀlam, too, distinguishes between the countries which supply rhinoceros horns and those which export khutū horns. Furthermore, it should be recalled that al-Birūnī states that the curved khutū demands the highest price, which presupposes that there is also a straight variety. This obviously does not apply to the horn of the rhinoceros. Finally, it seems most unlikely that the Egyptians, who were familiar with the horn of the African rhinoceros, would have paid exorbitant prices for it under the name of “white khutū,” quite apart from the fact that rhinoceros horn is not white. The possibility of walrus tusk—with which to a certain extent the rarer narwhal tooth is tied up because both come from the same northern regions—was suggested by B. Laufer in the most extensive and learned studies on the subject. Strong as his case seemed to be in 1913 and 1916, especially for the Chinese variety, the ku-tu-hai, it is now somewhat weakened by the information provided by the Ḥudūd al-ʿĀlam that khutū horns were exported from specific central Asian mountain countries, including Tibet. It seems rather difficult to imagine, as Laufer did in the case of the Kirghiz country, that the well-defined regions mentioned in the Ḥudūd al-ʿĀlam were only the intermediary

78 Le., Wiedemann (164, 1916, p. 380), Reinhart (219, p. 184), Rueska (222, p. 163). A. Zeki Validi Togan has lately expressed the same opinion (134, p. 216).

74 164, 1916, p. 381.

76 This point was made by 164, 1913, p. 354.

76 164, 1913 and 1916.

77 In the writings of Dr. Laufer, ku-tu-hai was transliterated as ku-tu-si.
exchange posts for the walrus tusks on their way from the North to the Muslim world. Thus the newly gained information makes the issue even more complex instead of clarifying it. To settle this question of animal geography and commercial history, with the limited amount of information at hand, seems still an impossible task.

Some observations can be supplied, however, which may provide at least a partial solution of the problem. First, it seems that one should not treat the ordinary colored khūtū and the white variety as one and the same material as was done in earlier investigations. It is true that the two types of horn have certain features in common and have thus, in the mind of the medieval Muslim, been connected with each other, even fused to a certain degree; yet they were originally not identical. In the case of the two types of khūtū, as we have shown above, the text of al-Bīrūnī distinguishes between the animals from which they came, the different material qualities of the horns, the countries from which they were imported, and the people who imported them. Considering all possible solutions, it seems most likely that the white khūtū, the fish tooth from the northern sea, is either the tusk of the walrus or that of the narwhal.

The identification of the colored khūtū is a much more complicated question. Our oldest and best authority, al-Bīrūnī, makes it clear that the material does not look at first sight like horn or teeth. He states twice that the khūtū is “the bone from the forehead of a bull,” and he concludes only later on, after the discussion of the fish tooth called white khūtū, that “judging from its appearance” this regular khūtū is “likewise . . . the main portion of a tooth or horn.” Therefore one has to visualize this khūtū as something odd looking and perhaps fragmentary. The mountainous regions mentioned in the Ḥudūd al-ʿĀlam as the sources of supply seem to point to a land animal. Thus the possibility of an identification with mammoth bones, a suggestion first made by Wiedemann ⁷⁸ but

⁷⁸ 277, p. 354, footnote 2. Later on Wiedemann thought khūtū to be rhinoceros horn (164, 1916, p. 380). About mammoth teeth in the Muslim world, see 143, p. 18, and 177, p. 329.
later rejected by Laufer,\textsuperscript{19} poses itself again. In view of the vagueness of the original sources and the confusion and wrong identifications in the Middle Ages it seems, however, not very fruitful to speculate about a solution of this riddle, especially as it is of no immediate significance for this study.

Let us now turn back to our main thesis, namely, that one variety of the khutū is the tusk of the walrus or that of the narwhal. That we speak here in the same breath of two teeth of such different form and character does not have to worry us unduly, since the medieval zoologist was, as we have seen, notoriously unconcerned about such matters. As long as the animals or their horns had some identical basic features they were easily fused, even in the mind of the scholar. The narwhal tusk was probably quite rare in comparison with that of the walrus. Furthermore, it can be assumed that the teeth came into the trade as broken or cut pieces, so that only the traders and the artisans knew the difference.

The various arguments for our assumed identification of the "white khutū" are individually perhaps too limited to be conclusive, but when put together they all point in the same direction.

There is first the Chinese ku-tu-hsi, which eminent orientalists like Laufer, Pelliot, and Ferrand have identified with the walrus and narwhal tusks, so that at least the nature of the khutū's Chinese counterpart is clearly established.\textsuperscript{80} More significant, however, is the evidence relating to the use of fish teeth in the Near East.

Let us begin with the rarer narwhal tusk. There is first as a most important piece of evidence the tusk in the treasury of San Marco which reached Venice in 1488 (pl. 47, upper and middle).\textsuperscript{81} It must have come from the Muslim East because

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\textsuperscript{19} 164, 1913, pp. 329 and 354; 164, 1916, pp. 372-373 (though in 164, 1913, p. 356, Laufer holds a confusion with mammoth ivory as a possibility).

\textsuperscript{80} 164, 1913 and 1916; 98, vol. 2, p. 679. The first to connect khutū with ku-tu-hsi was G. Jacob (143, pp. 82-83; 144, p. 9).

\textsuperscript{81} 138, pp. 198-200, figs. 210-211. Schoenberger gives a detailed description and history of the tooth. Its surface has been scraped smooth; the scrapings were probably used for medicinal purposes.
naskhi inscriptions are engraved on its silver mountings. In turning to literary references, one can point to Philip II of Spain who is said to have received 12 narwhal tusks or “alicorns” from the Sultan of Turkey.\(^{82}\) In 1623, according to Pietro della Valle, European merchants still regarded Turkey as a likely place to sell such a tusk.\(^{83}\) Muslims, too, must have participated in this trade because in the sixteenth century the French traveler André Thevet reports that on an island in the Red Sea and on the mainland nearby, he saw men who artificially straightened the horns of elephants and walruses and sold them as true alicorns.\(^{84}\) Manipulations of such a nature presuppose a knowledge of the real narwal tusk.

As to walrus ivory, historical and archeological evidence shows that it appears fairly early in the Muslim world and was then continuously used. Al-Birūnī’s statement that the white khutū was brought by the Bulgars from the northern seas and then made into knife handles\(^{85}\) is actually not the earliest reference to it. A passage in ‘Awfi (which according to J. Markwart goes back to a geographer of the first half of the tenth century) tells us that in the Arctic Ocean “a fish rises from whose teeth handles of knives and swords are made.”\(^{86}\) Not quite so specific, but apparently still referring to the walrus, is a passage in al-Maqdisi (end of the tenth cen-

\(^{82}\) 242, p. 112, quoting Immanuel Menteranus, Historia Belgica Nostri, year 1599.

\(^{83}\) The passage is quoted verbatim in 166, pp. 367 f., footnote 3.

\(^{84}\) 242, pp. 172-173.

\(^{85}\) This use is also attested for the ku-tu-hsi, 164, 1912, p. 318, which demonstrates the Far Eastern usage for the first half of the twelfth century (see also pp. 359 and 366); p. 358 gives a reference for the year 1320.

\(^{86}\) 177, pp. 265 (lines 1 and 2), 310, and 312, where the passage is interpreted as referring to the “Bartenwal” (i.e., Greenland whale) and its baleen, since the author cannot imagine that one would have called the walrus a fish. This paper has amply proven that zoological opinions of rare animals were very vague in medieval Muslim society so that it does not seem astonishing that a walrus should have been called a fish. Furthermore the baleen of the whale is quite unsuitable for sword handles. Al-Birūnī’s statement that “white hafts of knives are sawed from the fish tooth” also point clearly to maritime ivory. As we shall presently see, Muslim swords with handles made of walrus tusks are extant in large numbers. Hennig (122, p. 243) likewise thought this passage referred to walruses and not to whales.
tury A.D.) according to which fish teeth together with other northern products such as amber and sable and ermine pelts were again imported by the Bulgars. The early twelfth-century Marvazi, in his chapter on the northern seas, speaks also of a fish "whose tooth is used in setting knives." Unlike al-Biruni, none of these sources employs the term khutu. There is only one other author who provides a name. It is a different designation, but details in this passage corroborate and supplement al-Biruni's text and thus indicate that we are still dealing with the same material. This refers to a definition of chatuq حَقَّ, which in 1073 (466) Maḥmūd al-Kāshgharī included in his Turkish-Arabic dictionary Dīwān lughat al-Turk, and which, on account of its importance, deserves to be quoted in full: "Horn of a sea fish imported from China. It is (also) said that it is the root of a tree. It is used for knife handles. The presence of poison in food is put to test by it because when broth or other dishes in the bowl are stirred with it the food cooks without fire (if poison is present in it), or if the horn is placed on a bowl it (the horn) sweats without steam." There seems little doubt that this refers to the tusk of the walrus or the narwhal. As in the case of al-Biruni

87 175, p. 325, line 2 (the Arabic term used is إسنان التمك). The passage is reproduced and translated in 143, p. 4.
88 183, chapter 15, §3, quoted by Minorsky, p. 83. Professor Minorsky was kind enough to refer me to this text.
89 173, vol. 3, p. x64, lines 9-12. In this edition حَقَّ is written with a ㄏm, but Brockelmann who used this text transliterates it as chatuq, as if it had a ㄔm (58, p. 112). We are following Brockelmann's rendering of the word in this investigation.
90 Maḥmūd's secondary explanation of chatuq as the root of a tree seems to be based on the Chinese term ku-tu-hši or at least on its first two syllables. Although Laufer did not know Maḥmūd's passage, he came across the relationship to a tree in some other context, so it seems best to quote him:

In the "peculiar Khitan writing of the word ku-tu 柿楪 (ku-tu-hši is apparently of Khitan origin) the classifier 'tree' appears in either element . . . The tradition of ku-tu being in structure or appearance like wood seems to have originated in the Liao period (907-1125) and . . . was perpetuated down to the age of the Mongols . . . Under the word ku 柿 the Dictionary of K'ang-hši cites the T'ou k'ing pen ts'ao of the Sung period to the effect that this word refers to the trunk of a tree which is white like a bone, and hence receives its name, and that the southerners make from it very fine utensils. Ku-tu does
(who had stated that the khutū was preserved in the treasuries of China), Mahmūd links "the horn" with the Far East, and he describes even more vividly the manner in which the poison is detected, which is remarkably close to the accounts which we find later in European literature. The inclusion of chatuq in a Turkish dictionary confirms also the information supplied by other authors; namely, that the Turks played a decisive role in the history of the khutū. As to the difference in names, Brockelmann regarded chatuq as the right form and assumed khutū and khartūt to be corruptions.  

not relate to any specific tree, but denotes the burls or knotty excrescences on the trunks of the various trees which in diverse parts of the world, owing to their fine veneer, are chosen with a predilection for carvings, particularly of bowls. . . . The most clever artists in burl-carved work known to me are the Tibetans . . . These bowls have two peculiar features in common with ku-tu-si: many of them are white and yellow, and with their peculiar veins, offer somewhat ivory-like appearance; and some of them are believed by the Tibetans to be capable of detecting poison" (164, 1916, pp. 359-360).

In view of the fact that Mahmūd had stated that the chatuq came from China it is thus not at all surprising to find this Far Eastern thought reflected in its definition. The contradiction between the reference to a root as we find it in the Muslim source and the knotty excrescence used in China can be easily accounted for, since the two are not too different, at least in the eye of the nonexpert. More important is that the appearance and the faculty of detecting poison relate the wooden vessels to maritime ivory, and that Tibet, from which the finest bowls came, was one of the regions which supplied the khutū to the Muslim world (129, p. 92).

The identification of ku-tu-hai with parts of a tree was, however, not only a Far Eastern way of thinking. A certain wood found in Turkish regions possessed so many of the features of the khutū that the two invited comparison and, possibly, confusion in the minds of some people. Al-Bīrūnī gives us the following information about this wood:

"The particular use of the word khalanj is . . . for a certain wood (showing figures and colored lines) of which, in the lands of the Turks, tables, beakers, drinking vessels, and similar objects are made. Sometimes these patterns are so fine that they resemble those of the khutū. When the markings are as fine as this, knife and dagger handles are made of this wood which the Bulgars import into Khwārizm or Khurāsān." (134, p. 214, al-Bīrūnī quotes Ḥamza al-īsfahānī, who died between A.D. 961 and 971.) Here not only the close relationship between the horn and the wood in appearance and special use becomes apparent, but the text tells us also that both were imported by the same people, the Bulgars. To this may be added that the khalanj wood occurred also in the Kirghiz country, which likewise supplied large quantities of the khutū horn which was there fashioned into knife handles (129, p. 96).
On the other hand, one should keep in mind that the Chinese ku-tu-hsi points to an Islamic term more like khūṭū. Be that as it may, in view of the comparative rarity of maritime ivory it is good to recall the many variants for bishān ("rhinoceros horn") and to realize that it is not surprising that the tradition about the correct Arabic or Turkish name should have been rather weak. It may very well be that khūṭū and chatuq are but two readings of the same word, since the first two letters are identical in Arabic and differ only in their diacritics, while the final letters are close enough to make it possible for their written forms to be mistaken for one another, especially when the qāf has no diacritical points.

The use of maritime ivory for the making of knife and dagger handles is also attested for later periods and by non-Muslim writers. Thus in 1518, according to the Annals of the Ming Dynasty, a Muslim ruler sent knives made of fish teeth, together with horses and camels, as tribute to the Chinese court. Several Western authors of the sixteenth and seventeenth centuries likewise mention that daggers with skillfully fashioned handles of walrus tusk (often called fish teeth) were very popular in Turkey at that time. The Jesuit Father

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92 See above, p. 94.
93 The uncertainty of the correct spelling of the word is also demonstrated by a single page in Yāqūt's Geographical Dictionary which contains first the word لحقو (281, vol. 3, p. 447, lines 5 and 21). Both words do not make sense and have thus been emended to stand for al-khūṭū, the first change having been suggested by P. Pelliot (98, vol. 2, p. 679) and the second by Wüstenfeld (281, vol. 5, p. 290). حقو reflects the spelling حقو as given in Maḥmūd al-Kāshghari’s dictionary, since only the diacritical points of the first two letters are different.
95 These passages are to be found in 164, 1916, pp. 361-365, quoting von Herberstein (1517 and 1526), Belon (1539), and Avril (second half of the seventeenth century). Laufer (164, 1916, pp. 365-366) points also to a passage in Jahānqīr’s memoirs which speaks of a Persian dagger with a fish-tooth hilt spotted with black. This was sent to the Emperor as a gift of Shah ‘Abbās of Persia (144, vol. 2, p. 94). The curious piebald look of the "fish tooth" induced the editors of the memoirs to assume that the material was probably tortoise shell. There are however, fossil walrus teeth which have just this spotted appearance. The memoirs go on to tell how the emperor tried to get another piece like the fish tooth of the presented dagger, how it was finally found and then made into two dagger hilts and a thumb stall (144, pp. 96-98).
Avril, for instance, states that "the Persians and Turks who buy up the tusks of the walrus put a high value on them and prefer a scimitar or a dagger haft of this precious ivory to a handle of massy gold or silver . . ." 66 Although the sources are usually specific in speaking of walrus tusks in connection with these weapons, in one case the description could possibly refer to a narwhal: "When the Turkish merchants buy the knives they give them to the workers so that they put a point on them, which is usually the tooth of the walrus of which there are two sorts. One is straight, white and compact, resembling the alicorn; . . . the other is curved like that of a boar . . ." 67

As a final reference we should like to quote a passage from Of the Russe Common Wealth by Giles Fletcher, published in London in 1591, which seems to bind together all the various aspects of the problems: "Besides these (commodities) they have . . . the fishe tooth . . . which is used both among themselves and the Persians and Bougharians, that fetcht it from thence for beads, knives, and sword hafts of noblemen and gentlemen, and for divers other uses. Some use the powder of it against poison, as the unicornes horne. The fish that weareth it is called a morse, and is caught about Pecora. These fishe teeth, some of them are almost two foote of length, and weigh eleven or twelve pound apiece." 68 Here we first have the identification of "fish teeth" with the tusk of the walrus or morse, and then the confirmation of its use for knife handles and sword hafts; in addition the Bulgarians are mentioned as intermediaries in the commerce; then comes the important allusion to the antidotal property which we have all along assumed for the fish tooth, owing to its connection with the colored khutū which is now proved, and finally we find the mouth of the river Pecora mentioned as a hunting ground for the walruses; this river was the goal of many trading missions, since the region between it and the Ural mountains supplied the Muslim world in the Middle Ages.

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68 50, p. 13; also quoted in 156, p. 567; 242, p. 133.
with the most coveted furs and it is evident that it was also the natural highway for the trade in walrus tusks.

In view of all these references in Oriental and Western sources it seemed imperative to examine knives and swords of various types from Muslim countries, especially Turkey and Iran, to find out whether walrus (or narwhal) ivory was used for their handles. About 50 swords, daggers, and knives with ivory handles in the Walters Art Gallery, Baltimore, the Metropolitan Museum, New York, the Peabody Museum, Salem, and the United States National Museum, Washington, D. C., were therefore investigated. It soon became evident that most handles were fashioned from the tusk of the walrus, whose tooth structure, with its characteristic osteodentine core, makes it easy to identify. For instance, all the 17 swords, daggers, and knives from Turkey and Iran, dating from the sixteenth to the nineteenth centuries, in the Walters Art Gallery have handles made of the tusks of the walrus (pl. 47, lower). There seems, therefore, little doubt that the hilts and handles of many other swords and knives are made.

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99 Excellent analytical descriptions and illustrations of the various aspects of the elephant, hippopotamus, walrus, and narwhal ivory are given by Schoenberger (238, pp. 171-174 with figs. 190-192). They clearly indicate that the material of the handles is derived from the walrus.

It has been suggested that some of these handles might have been made from the teeth of the sperm whale which lives in the warm parts of all oceans. I am greatly indebted to Mrs. W. E. Schevill, of the Museum of Comparative Zoology of Harvard University, for having been kind enough to make sections of the tooth of this whale and of the tusk of the walrus so that this question could be settled. They showed clearly that the dentine and osteodentine structure of the whale tooth is quite different from that in the material used for the handles. Although the osteodentine section in the latter seemed often unusually wide, there seems little doubt that the material comes from the tusk of the walrus.

1 In the collection of Henri Moser-Charlottenfels were many knives and swords of various shapes with hilts made of walrus ivory. These arms came from Iran, Afghanistan, Turkey, Bukhara, and Khiva, and dated from the seventeenth till the nineteenth century. The collection contained also two powder priming flasks of that material. The excellent plates of the catalog, especially those printed in color, make it quite easy to recognize the walrus ivory (189, pls. 8-10, 12, 17, and 40, in color 11, 18, and 19).
of the same material. Since the literary evidence has been so fully proved for the later centuries, it can readily be assumed that the medieval armorer likewise used walrus tusks for his swords and knives. So far no medieval Muslim knives, daggers, or swords with ivory handles have come to my notice.

The Muslim swords and knives in our museums corroborate still another point of the literary sources. Al-Biruni states that the middle portion of a fish tooth, sawed into pieces, is distributed among the various hafts so that every piece is shared by them. These sections are said to indicate that the haft is made of the tooth and not of ivory or from chips from the edges, because they display various designs which have the appearance of "wriggling." Al-Ghaffari deals with the same aspect of the material (which according to him is yellow to red) and speaks of damascening designs. These authors are obviously referring to the inner part of the walrus tusk with its characteristic osteodentine core showing a densely veined pattern in a slightly browner or more reddish color. On examination of the swords and knives it at once becomes evident that the sections of the tooth are so applied that the finely patterned osteodentine part shows prominently. It is therefore easy—just as al-Biruni said—to recognize a haft made of walrus tooth and to distinguish its material from elephant ivory, which lacks this particular design.

It is called dandân-i māhi or shir-māhi or shir-i māhi in Persian.

Stone (251, p. 561, s.v. shirmani [sic]), referring to the use of walrus tusks for hilts in the Near East, states that the reason for this custom is that this material is less likely to split than elephant ivory. Since Stone does not give his source it was not possible to check on this information. Another explanation is given by Father Avril who states that the tusk has the property of staunching blood (164, 1916, p. 364).

K. E. von Baer has shown that the use of maritime ivory for sword hilts is referred to as early as the first half of the third century A.D. At that time Solinus reported that the inhabitants of ancient Ireland used the teeth of maritime animals for that purpose (34, pp. 126-130; see also 164, 1973, pp. 333-334).

Wiedemann (277, p. 354), in his translation, speaks of the "mittlere Teil (des Zahnes)"; he obviously refers to the core of the tooth which alone shows the characteristic pattern.
The fact that in the Middle Ages walrus ivory was available in the Muslim East in large enough quantities to be used in the manufacture of such ordinary implements as knives and daggers raises the question of how this material reached the Near East. Al-Birūnī tells us only that it was the (Volga-) Bulgars who imported the fish tooth from the northern seas. From other sources we learn more about their transactions—for instance, that their merchants brought unpolished swords from Azerbaijan to the heathen Wisū (or Īsū), one of the northernmost people known to the Muslims, to be traded there for beaver pelts and other furs. The Wisū, in turn, bartered the swords for sable furs in the lands farther north, in the regions along the Arctic Ocean where the blades were used as harpoons in the hunting of whales. It can be assumed that the walrus ivory reached the Muslim world via the fur-trade routes.

Trade in walrus ivory on the north coast of Russia (where

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4 The capital of the Bulgars was about 72 miles (115 kilometers) south of Kazan (see 129, p. 461, and map 12 on p. 435; 35, vol. 1, p. 788).

5 Usually identified with the Finnish Ves' (129, p. 309; 134, p. 55, footnote 3). Henning thought that they lived in the Perm region, the center of which was Cherdyń (121, pp. 254-255). Zeki Validi Yogan rejects this identification and proposes Kottas (134, p. 172). According to Ibn Faḍlān the Wisū lived a distance of 3 months from the Bulgars (134, p. 55; 177, p. 282). This applied to the water route during the summer months; in winter it took only 20 days to cover this distance with sleighs (134, p. 171).

6 177, p. 300; 134, p. 67.

7 (143, pp. 76-77; 177, p. 300; 99, p. 24). The people to the north of the Wisū probably lived even beyond the Yūra or Yūghra (177, p. 301), identified with the Ugrian Ostiaks and Voguls (129, p. 309).

The location of the various far-northern tribes referred to by Muslim writers is still a matter of conjecture. The same applies to the possible routes which the traders used during the summer and winter expeditions (Yogan, 134, pp. 171-173, objects to Henning, 121, p. 251). But the existence of the trade is well established, as are many details of the way in which it functioned.

8 Another proof of the existence of this fur trade is the praise which Ibn Sa'd bestowed about 1260 on the furs of the polar bears which were brought to Egypt (121, p. 249). In the fourteenth century Arab traders occasionally managed to reach the Far North, since we have reports about their trips to the northern Ural Mountains (121, pp. 259-260) and they even penetrated as far as the regions of the fur hunters along the shores of the Arctic Ocean (121, p. 263).
both the walrus and the narwhal live)\textsuperscript{10} is even older than the earliest references to it in Muslim literature. In the second half of the ninth century A.D. the Norseman Othhere sailed around the North Cape to “Birmania” (the region from the White Sea to the Ural) to obtain “horshvael which have in their teeth bones of great price and excellencie.”\textsuperscript{11} This may have started (or stimulated) commercial activities in this commodity with Europe.

As to the Muslim trade with the tribes of the Far North we need not rely only on literary sources, since it is also attested by archeological finds. Two silver vessels with Kūfic inscriptions of the eleventh to twelfth century were found below the Arctic Circle in northwest Siberia, one in the District of Berezov, and the other in a fortified camp on the river Sosva.\textsuperscript{12} In addition there have come to light in the same general region three other silver vessels whose more barbaric style indicated that they came from Muslim borderlands.\textsuperscript{13} All these objects, like the swords from Azerbaijan, must have been exchanged for the goods of the northern regions, that is, the much-coveted furs and the maritime ivory.\textsuperscript{14}

While literary references and actual objects make it certain that walrus tusks and, to a lesser degree, also narwhal teeth were known in the Islamic East and that they are obvi-

\textsuperscript{10} One species of the walrus, *Odobenus rosmarus* L., lives in the Arctic Ocean in an area stretching from the mouth of the Yenisei, around Novaya Zemlya, Spitsbergen, and Greenland as far as Hudson Bay. It has a shorter and more curved tusk than the North Pacific species, *Odobenus rosmarus* Ill., which lives along the coasts of northeast Asia and northwest America (53, vol. 12, p. 629). The narwhal, *Monodon monoceros*, lives usually between the 70th and 80th degrees northern latitude and is to be found among other places around Novaya Zemlya and the waters north of Siberia (53, vol. 12, p. 476).

\textsuperscript{11} 34, pp. 7-8 and 116-125; 164, 1913, pp. 337-338.

\textsuperscript{12} 223, pl. 82, No. 147, and pl. 83, No. 148, which date from the twelfth century (sixth century) (262, pp. 406-407). The sites are indicated on map 1 in Smirnoff’s introduction (243). Another silver vessel of slightly earlier date was found farther south in northwest Siberia, near Surgut (223, pl. 80, No. 245).

\textsuperscript{13} 223, pl. 58, No. 92; pl. 85, No. 155; pl. 87, No. 156.

\textsuperscript{14} Walrus ivory also reached Europe, as shown, for instance, by two twelfth-century German walrus carvings in the Walters Art Gallery, one a chess piece (173, vol. 4, No. 284), the other part of a larger composition, probably a corner of a portable altar (221, fig. on p. 243).
ously the “white khatūt” or fish teeth of the ancient sources, it still has to be demonstrated that the medieval Muslim actually confused the khatūt horn with that of the rhinoceros. This final link is necessary to explain how in Islam the antedotal virtue of the khatūt became suddenly attached to the horn of the karkadann.

There is literary proof that this identification of the khatūt with the rhinoceros horn happened at least as early as the beginning of the twelfth century. About 1120 the Persian geographer Marvazi states in two places that the khatūt is the horn of the rhinoceros and, vice versa, that the rhinoceros horn is called khatūt. To make his assertion even more specific he mentions, too, that the Chinese make high-priced girdles from this khatūt; ¹⁵ this was, as we have seen, universally and specifically stated about the horn of the karkadann.

Marvazi does not stand alone with his identification. About 200 years later al-Akfāni states that the khartūt خرتوت is also called khatūt. Khartūt in the form of khartit خرتيت or kharṭīt خرطيط is still the Egyptian designation for a rhinoceros.¹⁶ Thus khatūt horn and rhinoceros horn appear again as interchangeable terms.¹⁷

¹⁵ 183, Arabic pp. 5 and 11, translation p. 17 (ch. 8, paragraph 25); and p. 23 (ch. 8, paragraph 27).

The mistake in the Muslim identification is clearly demonstrated by a Chinese source which is approximately contemporary with Marvazi. Hung Hao states, about 1143, in the Sung mo chi wen: The ku-tu-hsi (the Chinese equivalent of the khatūt) is so rare that “among numerous pieces of rhinoceros horn there is not one (of this kind). It has never been worked into girdles (as in the case with rhinoceros horn)” (164, 1913, p. 359; about the date see 164, 1913, p. 366). Marvazi’s identification shows that Laufer’s statement “No Arabic author has ever used the word khatū with reference to the rhinoceros” (164, 1916, p. 381, footnote 3) can no longer be maintained.

¹⁶ 164, 1916, p. 380, quoting Wiedemann; see also 88, vol. 1, p. 363 خرطيط ; 98, vol. 2, pp. 679-680; 92, p. 182 خرتيت ; 59, vol. 12, pp. 605 and 607. It will be recalled that Brockelmann assumed both khartūt and khatūt to be garbled versions of chatuq (see p. 123).

¹⁷ This opinion is exactly the opposite of that of Laufer who states that “if anything is quite certain, it is that rhinoceros horn is not understood by chutww (khutā) (164, 1913, p. 354). Laufer assumed also that “the Arabs . . . have merely transferred to the walrus-tusks certain popular beliefs entertained regarding rhinoceros horn,” while my deduction is that the influence ran in
Once the equation between the two materials was made, it was natural that the special quality of detecting poison was sooner or later transferred from the khutū to the karkadann. There is as yet no indication of this transfer in Marvazi's long chapter on the rhinoceros, perhaps because the identification was made only shortly before this writer's time. To our knowledge the first reference to poison appears in the report of al-Qazwīnī, where the new virtue of the rhinoceros horn is significantly mentioned after it has been stated that it is good for knife handles.\textsuperscript{18} Al-Qazwīnī (and after him al-Mustawfi) seem to have regarded it as an antidote since he stated that "... when it is near poisoned food or drink it breaks the strength of the poison." There is not yet any reference to the poison-detecting properties which distinguish the khutū.

The final stage in the development was reached when the khutū's agitation or sweating in the presence of poison was attributed to the horn of the rhinoceros. This point was reached about 1446 (850) in the \textit{Kharidat al-ājā'ib wa-faridat al-gharā'ib}, the cosmography of Ibn al-Wardī.\textsuperscript{19} In this work one learns that "one utilizes the horn of the rhinoceros by using it for the handles of the royal table knives. When poisoned dishes are placed before the king the handles become moist and agitated."\textsuperscript{20} Here then are all the elements

\textsuperscript{18} Besides the poison-detecting qualities there is yet another medicinal property which was transferred from the khutū to the karkadann. Al-Akfānī reports "that it has been established by experience that together with the vapors of perfume, the khutū has an excellent effect in the case of hemorrhoids." This is precisely the effect ascribed to it in India where for this reason rhinoceros horn is used in the form of plates for food, finger-and-toe-rings, cane handles, and so on (219, p. 184), although the earlier accounts of the karkadann never mention this particular use of the horn.

\textsuperscript{19} Ibn al-Wardī is not an original writer: his book is only a transcription, often word for word, of the \textit{Ja'mī' al-funūn} of the Ḥanbalite geographer Najm al-dīn Aḥmad b. Ḥamdān al-Harrānī, who was in Egypt in 2332 (732) (see 98, vol. 2 p. 472; 57, vol. 1, pp. 150-152 and suppl., vol. 2, pp. 161-163). Ibn al-Wardī's passage might therefore go back to al-Harrānī.

\textsuperscript{20} At the beginning of his statement about the rhinoceros Ibn al-Wardī quotes
of the myth in the proper setting: the problem of detecting poison on the royal table, the knife handles made of a special horn, and, finally, the revealing symptoms of sweating and agitation. While in the case of al-Qazwini one is still left in the dark about a possible connection between knife handles and the poison-detecting quality of the horn, their mutual relationship is now established, and the entire legend is presented in a logical and well-integrated fashion. The whole reads now like an account of the alicorn's magic power, written in the West, except that Ibn al-Wardi concludes his report with the usual Muslim story of the Chinese girdles made of the horn and their great monetary value.

From this time on the horn of the rhinoceros seems to have been endowed with the mythical antidotal property, though the decline of great writers in the Muslim world makes it more difficult to establish evidence for this; but even so there are occasional references especially in Western sources. For instance, James Lancaster, while lying in the Straight of Malacca in 1592, tried to barter for the horn, "which is highly esteemed of all the Moores in these parts as a most soveraigne remedie against poysion." 21 Even in our times vessels made of the horn are said in Egypt, India, and Turkey to possess the antidotal quality. 22

al-Jahiani as his source for the information that the karkadann in the shape of a donkey (see pl. 20) is to be found in Sumatra. Since al-Jahiani's work, written between 892 and 907 (279 and 293), is now lost, it is not possible to check on whether any of Ibn al-Wardi's additional remarks go back to this early source. It can, however, be assumed that since antitoxic reactions of knives are absent in all earlier reports, al-Jahiani can hardly have given this information.

21 242, p. 218.

22 For Egypt see the report of M. Meyerhof in Cairo (98, vol. 2, p. 680), and for India those of Reinhart in Delhi (219, p. 184) and of Shebbeare quoted in 118, p. 377. Andersson reported in the middle of the last century that cups made of horns of reddish tints were also "esteemed" in Turkey on account of their poison-detecting quality (25, p. 309). The same author gives in addition two other accounts of the powers of the horn which so vividly describe the traditional Muslim beliefs that they are herewith quoted:

"The horns of the rhinoceros," says Thunberg (apparently Karl Peter Thunberg, 1743-1828, a Swedish naturalist), 'were kept by some people both in town and country, not only as rarities, but also as useful in diseases and for the
After having followed the later history of the horns of the khutū and karkadann and their relationship to poison, it might be appropriate to deviate for a moment and ask when and where this whole development started. Since both al-Birūnī and Marvazi have pointed to a connection with China, one naturally looks to Far Eastern authors for further elucidation of this question; but here we run into difficulties. Although Laufer investigated the history of the walrus and narwhal tusks in China, where they had been known since the T'ang period, he could not find anything about the ku-tu-hsi's connection with poison before the middle of the thirteenth century, that is to say nearly two centuries after the Muslim authors had spoken about it. An earlier Chinese account tells us only that it was a priceless material, veined like ivory and of yellow color, that it came from the Khitan country in the far north of China and that it was used for sword hilts and knife handles. When, about 1259, the ku-tu-hsi is finally mentioned in connection with poison it is listed as a product of the Muḥammadan countries of the West or of central Asia. Its outstanding quality is not the detection of poison due to a specific reaction, as al-Birūnī and al-Kāshgharī had indicated,

purpose of detecting poison . . . The fine shavings of the horn taken internally were supposed to cure convulsions and spasms in children. With respect to the latter it was generally believed that goblets made of these horns in a turner's lathe would discover a poisonous draught that was put into them by making the liquor ferment till it ran quite out of the goblet. Such horns as were taken from a rhinoceros calf were said to be the best and the most depended upon.

"The horn of the rhinoceros," Kolben tells us, 'will not endure the touch of poison. I have often been a witness to this. Many people of fashion of the Cape have cups turned out of the rhinoceros horn. Some have them set in silver, and some in gold. If wine is poured into one of these cups, it immediately rises and bubbles up as if it were boiling; and if there be poison in it, the cup immediately splits. If poison be put by itself into one of those cups, the cup, in an instant, flies to pieces. Though this matter is known to thousands of persons, yet some writers have affirmed that the rhinoceros horn has no such virtue. The chips made in turning one of those cups are even carefully saved, and returned to the owner of the cup; being esteemed of great benefit in convulsions, faintings, and many other illnesses." (25, p. 309.)

23 The passage occurs in a treatise which was written pursuant to a mission which took place from 1129 till 1143 (164, 1913, pp. 318-320).
but its neutralizing power. In 1366 another author interpreted this further by stating that "ku-tu-hsi is poisonous by nature and can thus counteract all poisons, for poison is treated with poison." He arrives at this opinion because, as he points out, one of the Chinese transliterations of the Khitan word ku-tu-hsi is written with three characters meaning "black magic, poison, and rhinoceros horn." The latter was regarded as an effective antidote and it is therefore natural that this important quality of the horn was transferred to the ku-tu-hsi and that they were eventually thought to be identical (in 1387). Even in the latest reports there is no word about the special poison-revealing reaction which was attributed to the khutū or the chatuq. We thus have either to assume that there was an earlier connection between the ku-tu-hsi and the horn of the rhinoceros than Laufer had been able to trace, or we have to doubt the particular statements made by al-Birūnī and al-Kāshghārī. If the second alternative should be correct—and it seems quite possible—it may very well be that the Turkish promoters of the maritime ivory used an alleged Chinese reputation to enhance the value of their merchandise.

Let us now return to the iconographic aspect of our study. Our thesis that the walrus and narwhal varieties of the khutū became fused with the horn of the rhinoceros seems to be borne out by many representations of the karkadann. Varied as the body structure of the animal in the Islamic representations is, since the time of the Aleppo plaque of 1168 and the Mosul jar in the Berlin Museum, the majority show one identical feature: the long, straight, tapering horn. Even illustrations of various iconographic types in al-Qazwīnī manuscripts sometimes show this form in spite of the fact that the text states not only that the horn is bent but goes so far as to describe its curvature. The long, straight shape seems to

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24 It occurs in the report of Chang Tê, whom the Mongol emperor Mangu sent in 1259 as a courier to his younger brother Hülägū, the founder of the Il-khan dynasty of Persia, who resided in Tabriz (164, 1913, p. 320).

25 164, 1913, p. 323.

26 164, 1913, p. 325.

27 "In it is a curve convex towards the animal's front and concave towards its back." This, by the way, is apparently the passage which has been mis-
have been regarded as so significant that it was kept even after the rhinoceros had been recognized as possessing a curved horn which the painters learned to place correctly on the nose of the animal. Thus the miniature of the karkadann in the Princeton al-Qazwini manuscript shows the fairly realistic representation of a narwhal tusk, with its spiral grooves, in combination with an ordinary rhinoceros horn (pl. 15, right). There is, therefore, a good possibility that all the other long, straight horns could be interpreted as tusks of the narwhal; the slightly curved ones, like that on the head of the karkadann in the Sarre manuscript (pl. 13, lower), can be imagined to have been inspired by walrus tusks even though the text of al-Qazwini, which called for a bent horn, might have been a contributory factor for this particular shape.

At this point in the investigation we are also justified in assuming that the horns on the heads of two animals decorating the plaque from the Aleppo madrasa (pl. 6) possibly reflect a narwhal tusk. All the characteristic features, such as the long, straight, and tapering form and the helical grooves are unmistakably reproduced. Furthermore some of the later representations of the karkadann (pls. 2, upper; 7; and 19, upper) show vertical markings which may indicate that the artists still knew that certain designs on the horn were necessary, although they had forgotten the real ones and substituted more fanciful patterns. Thus the representation on the Aleppo plaque might indeed be one of the earliest instances in which the ideas of the terrestrial karkadann and the maritime khutū are fused. The only other example in an early style so far found is the enigmatic representation on an Hispano-Moresque ivory pyxis which was formerly in the collection of the Comtesse de Béhague and is now in that of the

translated in Western books on the unicorn as follows: "... with raised striae outside and a hollow within" (242, p. 265).

28 I know this ivory box only from reproductions. It is discussed in 100, vol. 1, pp. 75-76, and illustrated on plates 28 and 129. Ferrandis thinks that the unicorns are fighting each other. Two pyxides, dated 968 (357) and 970 (359) (100, pls. 19-25), are said to be closely related. It is, however, quite impossible that the Ganay pyxis is later than these parallels; it may even be modern.
Marquis de Ganay (pl. 5, right). Here, too, each of the paired unicorns proudly carries a long, tapering horn which seems to be marked with helical grooves. These equine long-bearded animals are, however, unique. All other unicorns on Spanish ivory boxes of the same period, have a winged body and carry a horn ending in a hook-shaped curve which, in spite of the helical grooves, can have no connection with the narwhal tusk (pl. 5, left). The unicorns on the Ganay pyxis have also no close parallels among the representations of the species in the art of the Muslim East of the twelfth, thirteenth, and fourteenth centuries. On the other hand, they are much like the Western types which have appeared in Christian art since the late twelfth century. In view of the unusual character of these animals it seems wise not to draw any conclusions before other examples have been found or pertinent texts have been discovered.

After having finished this survey we can now come back to the final question which we raised at the beginning of this chapter, namely, whether it was the karkadann which instigated the medieval myth of the antedotal property of the alicorn. The complexity of the subject makes it impossible to give anything but a tentative answer. With this limitation in mind one can state that it could very well have been the horn of the karkadann endowed with the new power it received through its fusion with the khutū which was the source for the medieval myth. The dates of the first reference to the antedotal virtue of the khutū (in al-Bīrūnī) and its first identification with the horn of the rhinoceros (in Marvāzī) make this quite possible. Only if the sweating of the alicorn should prove to be an early and essential feature in the detection of

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80 See also 100, vol. 1, pls. 42, 48, 50, 56, and 59.
80 238, figs. 196-197 and 207; see also 196, pls. 2-4, 6, and 7; 195, Nos. 73-78 and pl. 6; 94, No. 290 and illustration.
81 There would be thus three interchanges between rhinoceros horn and maritime ivory. In China the antedotal virtue of the rhinoceros horn was transferred to the ku-tu-hai (164, 1933, p. 355), while in Islam the lore of the khutū created in turn the antedotal myth of the rhinoceros horn. Finally in the West it is now again the rhinoceros horn which seems to have endowed the alicorn with antedotal power.
the poison in the West (which it does not seem to be) would the source of the influence be the khutū itself, because only in the first half of the fourteenth century does the horn of the karkadann allegedly show this peculiar reaction.

The possibility of Muslim influence on Western representations cannot yet be fully gauged. It is, first of all, tied up with the unicorns on the atypical and problematic pyxis in the Marquis de Ganay’s collection. This document startles us on account of the early manifestation of the type, just as it is provocative in its historical implication. Nevertheless, its uniqueness in Hispano-Moresque and seemingly even in Muslim art does not admit any conclusions at this time. The second earliest karkadann, with a straight, tapering horn and spiral grooves, the one on the plaque of the Aleppo madrasa of 1168 (564), probably antedates by some years the earliest picture of the unicorn with a narwhal tusk in European bestiaries. The difference in time is, however, very small and the Muslim decoration, furthermore, shows only an animal head and not the whole quadruped. Whether the third earliest Muslim piece, the Mosul jar fragment in Berlin, has a chronological precedence over Western representations is already questionable. Its exact date in the late twelfth or, more likely, in the thirteenth century, is difficult to determine, because its style is archaic. Also, the long horns of its unicorns do not show the characteristic grooves. Thus, owing to the scarcity and the problematic character of the examples now available, the case for a priority of the Muslim unicorn cannot, for the time being, be postulated, although it is not impossible that in point of time the Near East might have a slight edge over Europe. Only when we know more of early Muslim representations of the karkadann, especially those on easily transportable (and exportable) works of art, can we be more precise about the possibility of a transmission from East to West. For the time being it seems fair to assume

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82 The date when in the West narwhal teeth were first thought to be the horns of unicorns and represented as such has been put at about 1200 (238, pp. 194-195).
that in medieval Europe, other and probably better circumstances must have existed in which the iconography of the unicorn bearing a narwhal tusk could have evolved.

SUPPLEMENTARY NOTE

The account of the khutū in al-Birūnī’s Mineralogy, the Kitāb al-jamāhīr fi ma‘rifat al-jawāhīr, published in Hyderabad in 1355 H. (see above, p. 114, footnote 57), contains the following data:

The khutū is a much-desired animal substance especially treasured by the Chinese and the Turks of the East. Like the bezoar stone, it is supposed to sweat when it is near poison, a belief confirmed by messengers from the Qitāy Khān, whom al-Birūnī had asked about it.

The exact nature of the substance is so uncertain that al-Birūnī gives several identifications and explanations. Some statements are accompanied by critical comments, while others reveal clearly how confused the problem remained to him. It is not surprising, therefore, when he finally states that to know what the khutū actually is appears hopeless.

As in al-Khāzīnī’s version, it is first assumed to be a bone from the forehead of an ox living in the land of the Kirghiz. Al-Birūnī gives little credence to this theory, though it is supported by older, unnamed books. According to his own observations, the khutū is too thick to be from such a bone, especially since the Turkish oxen are of small build. He prefers to think that “it would fit the horn much better.” If this should be so, he would attribute it to the antelopes of the Kirghiz. Another theory designates it the forehead of a water karkadann (كرکدن مائی), called water elephant (فیل مائی), while yet another characterizes it as a bone from the brow or the horn of a very large bird. According to the last assumption (which is the one to provoke the author’s final despair), the bird falls down on some island and the bone is taken after the flesh has decomposed. Further details in the ensuing account of the bird, such as its tremendous size (which blots out the sun), its veneration as a divinity, its
habitat in deserts behind the sea between China and Ethiopia, and finally, its feeding on elephants, make it clear that the myth refers to the rukh.

The khutū's all-important pattern is discussed after al-Bīrūnī has mentioned the water karkadann as a possible source of this substance. He likens its damascened design to the core of a fish tooth which the Bulgarians import into Khwārizm from the Northern Sea. He then mentions that the fish tooth is a little more than a cubit long and that its core, running through its whole length, is known as its substance or jewel (ٍجوهر السمّ). It is not quite clear whether in the next paragraph he still speaks of the fish tooth (obviously the walrus tusk) or the khutū, though it seems as if al-Bīrūnī again had the former in mind. It tells how a Khwārizmian came across specimens whose enamel surrounding the core was brilliantly white. He carved knife and dagger handles from its core, which was white with an admixture of yellow and like the core of a cucumber split lengthwise. He brought it to Mecca as white khutū and sold it to the Egyptians for a high price. Here our author is apparently referring to a dishonest commercial transaction.

Al-Bīrūnī stresses the khutū's connection with water in one more instance. When carved pieces fall into fire, a fishlike odor rises, and just as fumigating with fish bones is said to help hemorrhoids, so does khutū smoke.

The description of colors is fairly close to al-Khāzīnī's version. Its beginning and end, however, are different. The former is significant, since it could just as well apply to the walrus tusk: "The best is the crooked one, which is colored between yellow and red." The price of such crooked specimens is 100 dinārs (gold coins) for a hundred dirham's weight (ca. 314.8 grams), while the poorest quality of the tooth costs only one dinār with no regard to weight. The largest piece seen by al-Bīrūnī weighed 150 dirhams (ca. 472.2 grams), and its value was 200 dinārs.

Finally, al-Bīrūnī reports two peculiar uses for the khutū not otherwise mentioned in the literature. The Amīr Abū
Ja'far b. Bānū had a large chestlike box with long, broad, and thick khutū plates, while the Amir Yamīn al-dawla owned an inkwell which was a source of blessing for him but brought ill-luck to others.

The editor of the Kitāb al-jamāhir fi ma'rifat al-jawāhir adds to his text (45a, p. 208, footnote 2) the passage on the khutū in the same author’s Pharmacology, the Kitāb al-saidana. This is only a shortened version of the account in the Kitāb al-jamāhir. In parts it gives the impression of being slightly garbled, as is evident from a passage like: “the khutū . . . is the forehead of a karkadann, that is the water elephant.”

Al-Bīrūnī seems to imply that he has actually seen khutū pieces. It is therefore significant that he distinguishes between the khutū and the fish tooth, i.e., the walrus tusk. The selling of a fish tooth to Egyptians as white khutū and the long, broad, and thick plates of Abū Ja'far's box speak also for the existence of two different materials. There are close similarities, however. The khutū's core has designs and colors very much like that of the walrus tusk, while the piece carved by the Khwārizmian looked like white khutū (a substance which, contrary to my assumption based on Wiedemann's translation of al-Kāzini's text, does not exist as a separate category). The issue then is to find two animals which have “teeth” of marked similarities. In this respect, it will be recalled that I have come across a number of swords the handles of which were unusually wide for walrus tusks, although they had its osteodentine pattern.

Unfortunately, I cannot offer any satisfactory solution of the problem. It seems unlikely that al-Bīrūnī is speaking of the tooth of the sperm whale which otherwise could figuratively be called a water karkadann or water elephant (see p. 126, footnote 99). The narwhal has no core with a design. On the other hand, it is not likely that Egyptians would have paid a high price for hippopotamus teeth, which must have been fairly common in their country. Furthermore, this animal was known as “water horse” (فرس (الماء), and the structure of
its tooth differs greatly from that of the walrus. In case there is no other tooth like that of the walrus—nor a horn resembling it—the only remaining possibility would be that al-Birûnî makes a distinction between two types of walrus teeth, perhaps teeth of different sizes or in different stages of preservation; or we would have to assume that the cause of the whole confusion is of semantic nature. It could be conjectured that at a certain time the walrus was usually called a fish, but sometimes also a water karkadann, without its being understood that the two names referred to the same animal. Accepting this, it is only natural that the products of these alleged two animals look very much alike, since they come from one type animal. However, even if we have to accept that, originally, there were two different products from two different animals, it is clear that such rare and mysterious materials as khutû and walrus tusk could easily be mistaken for each other, as they seem to have been in Egypt. This makes it possible to understand how features connected with the original khutû could have been transferred to the walrus tusk. On the other hand, al-Birûnî’s identification of the khutû with an ox or a water karkadann was the starting point for the confusion with the terrestrial karkadann which was supposed to have had a bovine form. If the text of the Pharmacology is not garbled, this confusion occurred already in al-Birûnî’s own writing.

Why our author called the tusk a forehead bone remains another puzzle, especially since he himself preferred to call the khutû a horn. Possibly he became prejudiced by the intelligence given to him by the men of the Qitây Khân who designated it as such or by the reports connecting it with the rukh.

The passage in al-Birûnî shows that the bird theory explaining the nature of the khutû actually has two sources: the buceros (see p. 116) and the rukh. The association of the khutû with the rukh has its parallel in the relation of the karkadann and the rukh (see p. 33). There is, therefore, one further reason why khutû and karkadann could be confused
with each other. It is also noteworthy that al-Bīrūnī is the first to identify the khutū with the fabulous bird and that al-Akfāni repeats in his account only what he had read. We likewise find that the same fourteenth-century author copied, besides other facts, al-Bīrūnī's original statements of the khutū's popularity with the Turks, its range of colors, and its usefulness in the case of hemorrhoids. In al-Akfāni's time the price of khutū seems to have dropped, however.