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THE ZOOLOGICAL SECTION
OF THE
NUZHATU-L-QULŪB
OF
ḤAMDULLĀH AL-MUSTAUFĪ
AL-QAZWĪNĪ

EDITED, TRANSLATED, AND ANNOTATED

BY

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INTRODUCTION

THE author of the *Nuzhatu-l-Qulūb*, Ḥamdullāh b. Abī Bakr b. Ḥamd al-Mustaufī al-Qazwīnī, born about A.H. 680 (A.D. 1281–2), was a financial officer under the régime of Abu Sa‘īd the Mongol Īl Khān. He was an industrious compiler and completed the *Tārīkh-i-Guzīda* (“Select History”), a universal history, in A.H. 730; the *Zafarnāma* (“Book of Victory”), a vast rhymed chronicle of Persian history continuing Firdausī’s epic, in A.H. 735; and the *Nuzhatu-l-Qulūb* (“Hearts’ Delight”) in A.H. 740.

The latter work may be described as a scientific encyclopædia, or perhaps as a popular educator in science. An introduction deals with the spheres, heavenly bodies, and elements, the “inhabited quarter” of the earth, latitude and longitude, and the climates; the body of the work is divided into three *maqālas*, the first treating of the mineral, vegetable, and animal kingdoms; the second of man, his bodily structure, faculties and moral qualities; and the third of geography; an epilogue is devoted to wonders and curiosities—those of Īrān and the rest of the world. The zoological portion of the work, which is here presented, is the third *martaba* of the first *maqāla*. G. Le Strange has previously published (E. J. W. Gibb Memorial Series) the text and translation of the third *maqāla* and the epilogue. The rest of the work has not yet been critically edited or translated.

THE PLACE OF THE NUZHAT IN THE HISTORY OF ZOOLOGY

The scheme on which the zoological portion of the *Nuzhat* is written will be at once seen on opening the translation. Animals are classified as:—

- (i) Of the land: (a) Domestic; (b) Wild Animals; (c) Beasts of Prey; (d) Poisonous Animals and Creeping Things; (e) Animals certain of whose Members resemble Man.
- (ii) Of the sea.
- (iii) Of the air.

A separate paragraph is devoted to each animal, the paragraphs being arranged, in each of the several sections, in

the alphabetical order of the Arabic name of the animals. In the case of the larger and better known animals the Arabic is followed by the Persian name; sometimes another Arabic name is given, and often also the Turki and Mongolian equivalents; since Persia, at an earlier period under the rule of the Seljuq Turks, had when the *Nuzhat* was written passed under the domination of the Mongols. It is then stated whether the animal is allowed to be eaten; and the qualities of its flesh—hot or cold, dry or moist—are sometimes given. A short description of the animal follows, usually limited to a few selected features; and lastly there is given a list of the medical uses of the various parts or organs. Sometimes this medical part forms the larger portion of the account of the animal; occasionally the magical uses of certain organs are also given. The accounts of the smaller and less familiar animals are much shorter, sometimes hardly more than the name. The total number of animals described is 228, the numerous varieties of fish being counted together as one animal.

The work thus gives a conspectus of the zoological science of the time. It would be too much to claim any great scientific acumen for the author—he was at best an industrious compiler, and in no sense an observer. Nor does the *Nuzhat* give us a high idea of the level reached by zoology in the hands of others. There are crude mistakes, as, for example, that the elephant has no joints except at the shoulder; that the porcupine shoots out its quills; that the hyena is hermaphrodite; and a number of totally mythical animals are described. No; the value of the present section depends simply on the fact that it is one of a very few works which do allow us to see what, good or bad, high or low, actually was the state of zoological science in the Muhammadan East in medieval times.

For Arabic works on natural history were few, and Persian works non-existent, before the time of Mustaufi. There appears to be no systematic zoological treatise before the *Nuzhat* except the *Kitābu-l-Hayawān* of Jāhiz (d. A.H. 255, A.D. 869), which, however (like that of ad-Damīri later) is

for the most part of philological and literary interest, "giving more the grammatical structure and meanings of the names of animals than their descriptions" (Jayakar). It contains, as Carra de Vaux informs us, anecdotes, reflections and literary recollections suggested by the animals treated of, and also many chapters which have no concern with animals.

There were, however, also in existence a number of special treatises; the origin of one group of these is explained by Geyer (*Sitzungsber. Wien. Akad. Wiss., Phil.-Hist. Classe.* vol. cxv, 1887). The animals of the desert play a great part in ancient Arabic poetry, and many names and "epitheta ornantia" were given to them; these were zealously gathered together by the philologists, whose activity resulted in the production of works with the title *Kitāb al-Wuḥūsh* ("Book of Beasts") or *K. Asmā Al-Wuḥūsh* ("Book of the Names of Beasts"). Geyer gives a list of eleven such authors, but the book of al-Aṣmā'ī (b. 739, d. 831 A.D.) is, according to Geyer, the only one which is known to exist in Europe. The work is not a long one; it is reproduced by Geyer, and occupies 440 lines, about 22 pages of the journal. The animals treated of are the ass, ox, antelope, mountain-goat, ostrich, lion, wolf, hyena, fox, and hare; verses are given from the poets illustrating the use of the names adduced.

Another group of treatises consists of works devoted to a special animal—in particular to the horse. Al-Aṣmā'ī here again furnishes us with an example; his *Kitāb al-Khūl* has been edited and annotated by Haflner (*Sitzungsber. Wien. Akad. Wiss., Phil.-Hist. Classe.* vol. cxxxii, 1895); it occupies 468 lines, or 24 printed pages. The names given to the Horse are recounted, here again with examples of their use from the poets, and this is followed by a description of their desirable and undesirable qualities, their colours, etc. According to Jayakar, Abū 'Ubaida (b. 728, d. 825 A.D.) claimed to have composed a work in fifty volumes on the horse. Al-Aṣmā'ī wrote, besides his work on the horse, treatises on the camel and the sheep.

In view of the scarcity of zoological works existing in his day, it is obvious that Mustaufi (since he was not an original

observer) must have had other sources than these. In his preface to the *Nuzhat* as a whole he gives us a list of authorities, which, however useful they may have been for the other parts of the work, can have little to do with zoology. Again, in the zoological portion itself he not infrequently refers to his authority for certain statements; of these authorities there are nineteen; none of them are zoological works, and none are adduced more than three times (mostly they are referred to once only), except the *'Ajā'ibu-l-Makhlūqāt*, which is quoted thirty-one times, and the *Jāmi'u-l-Hikāyāt*, thirteen times. These two, therefore, demand a short consideration in their capacity of zoological sources.

The *'Ajā'ibu-l-Makhlūqāt*, a cosmography by Zakariyā b. Muḥammad b. Maḥmūd al-Kammūnī al-Qazwīnī, was written in Arabic in A.D. 1263, and a second enlarged edition was put forth in 1275. It was later translated into Persian. The Arabic text has been edited by Wustefeld, and a portion (going as far as metals, but stopping short of vegetables, animals, and man) has been translated by Fthé. The zoological part (of the Persian translation) describes 130 animals under the heads of (i) Beasts of Burden, (ii) Cattle, (iii) Beasts of Prey, (iv) Flying Animals, (v) Reptiles and Insects, as well as, shortly, some animals of strange shape, and some compound animals, made up of two different kinds. It occupies fifty-seven folios in MS. Add. 16739 (Persian) of the British Museum; the manner of the articles is similar to that of the *Nuzhat*, and the matter is not dissimilar. Mustaufī, however, refers directly to the *'Ajā'ibu-l-Makhlūqāt* principally as his source for the fabulous animals, in his section "Animals certain of whose Members resemble Man", and elsewhere, or as his authority for curious or mythical statements about more ordinary animals, and not for the general run of his matter, for which indeed he does not as a rule mention any source.

The *Jāmi'u-l-Hikāyāt wa Lawāmi'u-r-Riwāyāt* of Nūru-d-Dīn Muḥammad 'Aufī, the second great authority quoted by Mustaufī, is as Rien says a large collection of anecdotes, detached narratives, and miscellaneous notices, either culled

from historical works, or derived from oral information. It has not yet been edited or translated. The zoological portion, in the MS. Add. 16862 (Persian) of the British Museum, takes up 12½ folios, and consists of four chapters, on (i) The Temperaments of Animals, (ii) Wild Beasts, (iii) Strange Animals, (iv) Curious Birds. There is thus no attempt at any logical division of the subject; and the several articles are rather collections of stories, with accounts of the useful properties of the animals, than attempts at a systematic zoology.

A fairly long list of sources can be collected (v. sup.) from the text of the zoological portion of the *Nuzhat*; but from all of these put together except the *'Ajā'ibu-l-Makhlūqāt* and the *Jāmi'u-l-Hikāyāt*, Mustaufī can have derived very little of his matter. At the end of the zoological part, however, he says: "And in this section everything that I have not transcribed from other books is taken from the account given in the *'Ajā'ibu-l-Makhlūqāt* and the *Jāmi'u-l-Hikāyāt*."

But from the much smaller number of animals described in these two works (apart from the fact of the differences in the accounts of the same animal) there seems to be a considerable element of the zoological section still unaccounted for. This residue certainly does not depend on the author's own observations, and hence must have been gathered either from other and unacknowledged sources, or from common knowledge and oral tradition. Since Mustaufī seems to have been on the whole rather proud than otherwise of his list of authorities (after the manner of some more modern authors), we are perhaps justified in assuming that a fair proportion of his matter has the latter origin. Some of this traditional matter is, no doubt, ancient, and to be found in Greek and Roman authors. Thus the statement in the *Nuzhat*, that if the tongue of a frog be laid on the heart of a sleeping woman she will tell whatever she may have done, is found in Pliny, quoted from Democritus. But I must not now attempt to follow out the descent of the animal lore which has been handed down through the ages in this way.

Almost the only Muhammadan zoological writer after

Mustaufi is Kamālu-d-Dīn Muḥammad b. Mūsā ad-Damīrī, who finished his *Ḥayātu-l-Ḥayāwān* in A.H. 773 (A.D. 1371), thirty-three years after the completion of the *Nuzhat* by Mustaufi. It is a large work, comprising 1383 pages in the Cairo lithograph of A.H. 1330 (A.D. 1912); but the amount of zoological information contained in it is scarcely more in volume than that in the zoological section of the *Nuzhat*. The work is really philological and literary in its objects, and is composed mainly of anecdotes, grammatical disquisitions, citations of proverbs, traditions, legal decisions, the interpretation of dreams of animals, excursus of various kinds; for example, the author goes so far as to introduce, in the middle of the section on the goose, a history of the Caliphate extending to more than 100 pages. About three-quarters of the work has been translated by Jayakar (London and Bombay, 1906-8, now out of print).

Brockelmann mentions Muḥammad b. 'Abdalkarīm as-Safādī as the author of a book called *Al-Multaqat min 'Ajā'ib al-Makhlūqāt wa Ḥayāt al-Ḥaywān*, i.e. A gathering or gleanings from Qazwīnī's *'Ajā'ibu-l-Makhlūqāt* (described above) and Damīrī's work, compiled in A.H. 896 (A.D. 1490), and existing in manuscript at Constantinople.

The above short review of the zoological works of Muhammadan authors suffices to show that the zoological section of the *Nuzhatu-l-Qulūb*, slight and immature though it is, constitutes one of the very few extant zoological treatises of the Islamic East, and that it is apparently the only one whose primary object can be with any degree of truth described as scientific; the rest are essentially literary or philological or have other ends in view than the scientific.

THE NUZHATU-L-QULŪB IN RELATION TO MEDICINE

Under the heading "Properties" (خواص), or often without any special heading, there is given after the description of each animal a list of the medical (and magical) uses of its several parts. We thus have a "Materia Medica"—a list of the drugs

of animal origin used in Persia at the time of the compilation of the *Nuzhat*; the botanical and mineralogical sections similarly include the uses of the vegetable and mineral drugs. Besides a list of drugs we thus obtain the names of the diseases in which they were employed: and both lists contain much that is interesting.

A perusal of the text will show that certain diseases are mentioned with considerable frequency; and we may ask if we can base on this fact any conclusions as to the frequency of occurrence of the diseases themselves. At first sight it would seem as though we cannot; the number of times that a disease is mentioned in a *Materia Medica* such as this corresponds to the number of drugs which have been used in treating it. The more reliable any drug is found to be, the fewer rivals it will have; the commonest disease in the world, malaria, would nowadays find mention under a very small number of remedies. Frequency of mention means, therefore, inadequacy of any single remedy rather than frequency of occurrence.

Still, a larger number of remedies would naturally be tried in the commoner diseases; and it is unlikely that there would be a large armamentarium for the treatment of a really rare disease. On the whole, then, frequency of mention of a disease is probably some indication of frequency of occurrence.

Judged by this test, the following are among the commoner diseases of fourteenth century Persia: Cataract, corneal opacities, stone in the bladder, ringworm of the scalp, leprosy, quartan fever, tuberculous glands. Also mentioned fairly often are hemiplegia, diphtheria (probably including quinsy), morphoeca, chloasma.

The hair receives much attention; many substances are mentioned as destroying superfluous hair, and an equal number are recommended for causing the hair to grow. But the class of drugs that is mentioned oftener than any other is the aphrodisiac.

With regard to the statements in the text that such and such a drug is hot, dry, cold, or moist, in the first, second, third, or fourth degree, I may remind the reader that there are nine

types of complexion or temperament—the four simple, hot, cold, dry, and moist; four compound, hot and dry, hot and moist, cold and dry, and cold and moist; and the equable, in which no quality preponderates. To quote from Browne's *Arabian Medicine*: "Excluding the rare case of a perfect equilibrium, every individual will be either of the Bilious Complexion, which is hot and dry; the Atrabilious or Melancholic, which is cold and dry; the Phlegmatic, which is cold and moist; or the Sanguine, which is hot and moist. In treating a hot, cold, dry or moist disease with a food or drug of the opposite quality, regard must be paid to these idiosyncrasies. The Natural Property inherent in each food or drug exists in one of four degrees. Thus, for example, such a substance if hot in the first degree is a food; if hot in the second degree, both a food and a medicine; if hot in the third degree, a medicine, not a food; if hot in the fourth degree, a poison."

MANUSCRIPTS, ETC.

When I was in India I obtained from the bookshop of Mirzā Muḥammad Shīrāzī "Maliku-l-Kuttāb" in Bombay a copy of the lithographed edition of the *Nuzhatu-l-Qulūb* published by him A.H. 1311 (A.D. 1893-4), now apparently scarce and difficult to obtain; this I used for the first draft of my translation. It is not, however, a very good edition, as the collation of the undermentioned manuscripts has shown. In particular, towards the end of the zoological section extensive passages, in quite a different literary style, have been substituted for the terse and simple original. These substituted passages, which begin with the section on the partridge (*Qabj*), are much lengthier than those they replace, are more verbose, frequently use the locution *مر . . . را* never once found in the true text, and often replace Persian words or phrases by their Arabic equivalents (e.g. نزول ماء العين for نزول آب چشم). I have given translations of them in the notes.

The manuscripts which I have collated or compared in whole or in part with the lithograph are the following:—

A—B.M. Add. 7708, dated *Dhū-l-Ḥijjah*, A.H. 984 (A.D. 1577).

B—B.M. Add. 16736, the oldest MS. of the *Nuzhat* in the British Museum, written apparently in the sixteenth century; said in Rien's Catalogue to have been written before A.H. 969 (A.D. 1562).

C—B.M. Add. 23543, apparently written in the sixteenth century.

D—B.M. Add. 23544, apparently written in the seventeenth century.

P—Paris Bibliothèque Nationale, Ancien Fonds 139.

V—Vienna Nationalbibliothek No. 1449 (Flügel, ii, 514).

The Paris and Vienna MSS. I was able to use through photographic (rotograph) copies, which the librarians of the respective institutions very kindly caused to be prepared for me, and my thanks are due to them for their courtesy in this matter, which spared me the inconvenience of a personal visit to these capitals.

I made complete collations of B, P, and V, and began to do the same with A, but it became evident before very long that copying out the differing readings of the MS. was merely copying out errors; nevertheless, I obtained the readings of A in every place of doubt, though I think I very seldom derived any assistance from them.

C and D I also consulted throughout in every doubtful place; C's readings were not infrequently useful, D's more rarely.

Distinctly the best of the MSS. is that of Paris, which Le Strange (who edited and translated the Geographical Part) says "is older by a century than any other copy with which I am acquainted". It was originally bought by the Minister Colbert; it is dated 853 (= A.D. 1449), a little more than a century after the time when Mustaufi wrote. Le Strange adds that it became his chief authority.

Next to P must be placed B, the oldest of the British Museum MSS.—not very well written, and often defective

in the pointing, but nevertheless a very valuable text. C is also a fairly good text, but less reliable on the whole than B. D is of relatively much less value.

I was very disappointed in A; Le Strange says of it that for completeness and careful pointing it is far better than B; he used it, of course, only for the geographical part; but I came to it expecting it to be equally valuable for the zoological. It is, indeed, beautifully written, but there its excellence ends; it is full of errors, and has been practically useless to me.

V is also well written; though useful for comparison, it is not a first-rate MS. I rate it on the whole rather lower than C. Le Strange calls it "an excellent MS."

In transcribing the Turki names, if the spelling is the same as in modern Turkish I have usually given the transliteration as in Redhouse's Dictionary; if the spelling differs, I have transcribed the word according to the ordinary rules. Many of the Turki names appear to have no relations in modern Turkish; and, as evidenced by the variants in the several MSS., were often unfamiliar to the Persian copyists themselves; in these cases I cannot be certain that my reading of the name is the correct one. The case is even worse in regard to the Mughal or Mongol names; two MSS. seldom give the same reading; sometimes the readings are wildly at variance, and I have been able to do little more than take the reading of the oldest and best MS,—but even then the insertion of the vowels is merely guesswork.

Arabic passages and phrases are printed in italics. The enclosures in *square* brackets represent an amplification of the text, introduced for the sake of clearness, and are not in the original.

The "five scoundrels" or "reprobates", several times alluded to, are the rat, mad dog, serpent, kite, and crow.

The *mīthqāl* is a weight of a drachm and three-sevenths; the *dāng* is the fourth part of a drachm.

Finally, I have to acknowledge with gratitude the help I have received from Dr. T. H. Weir, Lecturer in Arabic in Glasgow University, in connection with many of the Arabic

passages: he has suggested the correct readings and translation, has in the case of quotations often given me the sources, and has explained the allusions contained in them.¹ To Sir E. Denison Ross I owe many thanks for the interest he has taken in my work, and for the encouragement which I have received from him while I have been engaged on it; as also to Professor R. A. Nicholson for hints as to readings and translations in several difficult passages of the work, and to Mr. Norman Kinnear, of the British Museum (Natural History), for the trouble he has taken in answering my queries regarding a number of the birds.

The following are the full titles of the books referred to in the foregoing paragraphs and in the notes:—

- BROCKELMANS, C., *Geschichte der Arabischen Litteratur*, vol. i, Weimar, 1898; vol. ii, Berlin, 1902.
- BROWNE, E. G., *Arabian Medicine* (being the Fitzpatrick Lectures delivered at the College of Physicians in 1919 and 1920), Cambridge, 1921.
- CARRA DE VAUX, Baron, *Les Penseurs de l'Islam*, vol. ii, Paris, 1921.
- FORSKAL, P., *Descriptiones Animalium, avium, amphibiorum, piscium, insectorum, vermium; quae in itinere orientali observavit P. F.; adjuncta est Materia Medica Kahirina atque Tabula maris rubri geographica*. Hauniae, 1775.
- JAYAKAR, A. S. G. (trans.), *Ad-Dawā'ir's Hayāt al-Hayawān* (a Zoological Lexicon), translated from the Arabic. London and Bombay, 1906-8.
- LANE, E. W., *An Arabic-English Lexicon*, 8 vols. in 4. London, 1863-93.
- LE STRANGE, G., *The Geographical Part of the Nuḥḥat al-Qulub, composed by Hamdallah Mustawfi of Qazwin in 740 (1340)* (Gibb Memorial Series). Leyden, 1915-19 (two parts).
- ROSS, E. D., "A Polyglot List of Birds in Turki, Manchu and Chinese," *Memoirs of the Asiatic Society of Bengal*, vol. ii.
- SCHLIMMER, JOH. L., *Terminologie Médico-Pharmaceutique et Anthropologique Française-Persane*. Tcheran, 1874.
- STEINGASS, F., *A Comprehensive Persian-English Dictionary*. London, n.d.
- A Survey of the Fauna of Iraq; Mammals, Birds, Reptiles, etc., made by members of the Mesopotamia Expeditionary Force "D"*, 1915-19 Bombay, 1923.

¹ It is with deep sorrow that I have to record the death, since I wrote the above, of my friend Dr. Weir, to whose great knowledge and kindness I am so much indebted.

Sammūr [the Sable]¹ is well known. In Turkish it is called *kışk*, and the Mongols call it *balghān*. Its skin is worn, and is the most expensive of furs. It is allowable to eat its flesh; and in its properties it resembles the *dalaq*.

Sinād [the Rhinoceros] is shaped like the elephant, but it is smaller than the elephant and larger than the cow. It has a very rough tongue; and when its young is born it runs off, for fear that if its mother should lick it with her tongue, after the manner of animals, its body would be scarified.

Sinjāb [the Grey Squirrel]² is well known: it resembles the rat. The Mongols call it *karmān*. Its flesh is eaten, and its skin makes luxurious garments. The eating of its flesh cures lunacy, and takes away atrabillious disorders.³

Sinnauru-z-Zabād [the Civet Cat] resembles the piebald domestic cat, but is a little larger. A secretion is obtained from the sides of its chest, which they scrape off on to a stick⁴; this is civet. And between the passages of the urine and of the excrement there is another passage: from this also it produces civet, but of an inferior quality to the first. A fragrant smell proceeds from the whole body of the civet cat. The nature of civet is warm in the third degree: as regards moisture and dryness it is indifferent. It is commoner in the Eastern districts.

The **Ṣannājat** is well known. It is the biggest bodied of all terrestrial animals. If its glance falls on the eye of any animal, it [the *ṣannājat*] dies: and similarly any animal dies whose glance falls on its eye: but if the glance has fallen first on the other's body, and only afterwards on the eye, this peculiar property does not come into play. Hence where the *ṣannājat* lives no other animal has a resting place or

¹ *Mustela zibellina*.

² Or minever (Lane); according to Jayakar, the squirrel of West Palestine is *Sciurus syriacus*, of Egypt is *Xerus (S.) rutilus*.

³ I.e. disorders due to excess of black bile.

⁴ The meaning seems to be as I have translated, though this is scarcely to be got out of the text as it stands; Damīrī says "from which parts it is taken with a small spoon or a thin dirham".

retreat; and when the *ṣannājat* dies it furnishes food for a long time to the animals of those parts.¹

Dabb, the Lizard,² is an intelligent animal, which has tricks for drawing advantage to itself and warding off harm. According to ruling its flesh may be eaten; but in the *Maṣābīh*³ it is written: "And verily the Prophet (may God pour blessings on him and preserve him!) forbade the eating of the flesh of the lizard." If it runs out from between a man's feet his sexual power is diminished, so that an erection cannot be got that day. Anyone who eats its heart will be cured of anxiety and palpitation of the heart: and if a man eats its spleen, he will be immune against pain in the spleen. Its blood rubbed on morphoea along with barley meal causes it to disappear: it gives greater clearness of vision, and confers bodily strength and sexual power, and takes away cramps and prevents thirst. If its ankle-bone is hung on a horse's face, no other horse will come up with him. Its skin concealed in the hilt of a sword increases courage: and if a jar for honey be made from it, the honey will give a strong erection of the male organ. Its dung cures (maculo-anaesthetic) leprosy and chloasma, and corneal opacities, and prevents cataract.

Daiwan, the Wild Cat—an animal very much at enmity with others: it dares not sleep at night, for if it sleeps the other animals will kill it. Its brain is beneficial in pain in the kidneys, and strangury: the smoke from its brain expels the sperm from the womb.

Zaby, the Gazelle,⁴ called by the Turks *gèyik*, and by the Mongols *jairan*: and a white gazelle the Arabs call *rīm*.

¹ Damīrī gives the following account of this mythical beast: "Any animal whose sight falls on it dies instantaneously, but if its sight falls on other animals it dies. Other animals know of this peculiarity, for which reason they present themselves before it with their eyes closed, so that its sight may fall on them and it may die, for when it dies, it lasts as food for them for a long period."

² It seems unlikely that any single species is intended: Forskāl names it *Lacerta aegyptia*.

³ A collection of traditions by al-Baghawī (d. A.D. 1116 or 1122).

⁴ Probably several species are included. Major Cheeseman gives Ar. "dhabi" as the equivalent of *Gazella marica*, which inhabits the desert tract from Nejd to West Oman, but extends also into Lower Mesopotamia:

Its age reaches 300 and 400 years. It never sleeps on its side, because having no joints, if it were to sleep on its side it could not get up, and would perish; hence it sleeps standing. The height of elephants exceeds ten cubits; and more than twenty men can sit on the back of one; and they reckon one elephant with the men on its back as equal to a thousand horsemen.

Its Properties.—If its earwax is given in drink to anybody with his food, he will not go to sleep for a week. If its bile be used as an ointment for three days on a (maculo-anæsthetic) leprous patch, this will disappear. Smelling its fat causes tubercular leprosy. Its bones are ivory, which commands a high price; and the teeth are the best of its bones: and if ivory be tied round a child's neck, it will be safe against epilepsy. The smoke of its bones will make sweet the fruit of a sour tree, and will keep off worms and [other] pests from the land, and will drive mosquitos out of a house; scrapings of ivory scattered on a wound or a burn will bring about a cure. To sleep on an elephant's skin will cure convulsions; and the smoke of its skin will take away piles. If its urine be sprinkled in a house, rats will leave it. The smoke from its dung will cure fever and colic.

Qāqum [the Ermine] is well known: the Mongols call it *autam*. Its flesh may be eaten; and its skin makes a luxurious garment. And in properties it comes near to the grey squirrel.¹

Qird, the Ape, called also *būzīna* by the Persians, and *bīhan* by the Turks. It is a quick-witted animal, with pretty tricks, droll, capable of being taught many things, and with many human traits.

Its Properties.—Its eye carried about one brings sleeplessness; rubbed up and applied to the eye it cures corneal opacities and gives greater clearness of vision. Eating its flesh cures tubercular leprosy, and anyone who eats its blood becomes tongue-tied, and appears ugly in men's eyes. Its skin is made into sieves: all seed that is sown after being sifted through it is safe against pests.

Qanfudh, the Hedgehog: its flesh may be eaten. It is an enemy of the snake; it seizes the snake's tail, and draws in

¹ P. Sinjāb, *ant.*, p. 18.

its head, so that the snake strikes at it and is wounded [i.e. by its spines]; when the snake is powerless, the hedgehog puts out its head and eats it.

Its Properties are like those of the Porcupine, since both are of one form.

Karkaddan [the Rhinoceros] is well known. It is larger than the buffalo and smaller than the elephant. It has the form of a cow; and on its head is a single horn, and on that a branch of the length of a yard. And round its middle is a handsome cuirass¹ of leather, of which they make belts, which they sell for 3,000 and 4,000 dinārs. The rhinoceros is quickly infuriated and is long-lived; in the '*Ajā'ibu-l-Makhlūqāt*' it says that it lives 700 years, and sexual excitement comes on after its fiftieth year; when it becomes pregnant it remains so for three years. It is the enemy of the elephant, which, notwithstanding its great bulk of body, it lifts up on its horn; and since the crooked branch [of the horn] enters the elephant's body, it cannot cast it [i.e. the elephant] off; the elephant's fat gets into the eye of the rhinoceros and blinds it, and both die. The rhinoceros feeds on herbage.

Its Properties.—If one suffering from colic or from the pangs of childbirth hold in the hand the knots of the branch of its horn, he or she will get relief. And if it be ground up and given to one with epilepsy or hemiplegia, it will cure the disease. And if it be cut with a file and the filings mixed with dust, and the dust be scattered over a company of sleepers, they will sleep for a day and a night—or if they get up they will fall down again. And if the horn be brought forward along with food or drink containing poison, the deadliness of the poison will be of no effect.

The **Kaushāl** is the offspring of the wild ass and the bear. It has a strange shape resembling both of these, and has a share of the properties of both.

Mahāt, the Wild Ox; the Turks call the male *saqūm*, and the female *mārāl*, and the Arabs call its young *jandhūr*. Every

¹ Reading كجج; all the texts have كجج.

a man brave and courageous, and cures epilepsy and ring-worm of the scalp; used as an eyewash it cures bloodshot eyes: as an ointment it resolves tuberculous glands. Its fat is beneficial for piles, severe inflammations, and boils. If the fat of its eye along with oil of roses be rubbed on the face, it will take on a formidable appearance; and it is useful in hemiplegia and paralysis. Its blood is beneficial in cancer. Sleeping on its skin takes away quartan fever, and piles; and when its skin is made into a drum, its sound will scatter the enemies' horses.

Babr [the Tiger] is well known; the Turks call it *yolbārs*. It is an enemy of the lion and the panther, and can overcome both. When it is sick, it eats a dog, and recovers. It brings forth its young beside the herb cinquefoil¹; and it suckles its cub once every three days.

Its Properties.—Its bile beaten up with water and painted on the head of one in delirium² will cure him: if a woman carries it on her she will not become pregnant, and if she be pregnant she will miscarry. Those who tie its ankle-bone on them will not be tired by long walking—not even if they go twenty leagues. To sleep or to sit on its skin gets rid of tapeworms³; and the smoke of its skin drives away noxious creeping things except ants. Its fat is the best remedy for hemiplegia.

Ḥarish [the Rhinoceros].⁴—In the *‘Ajā’ib-u-l-Ma’alūqāt* it says that it is an animal like a calf, very powerful, and having

¹ The cinquefoil is the genus *Potentilla*, or more particularly *P. reptans*, according to Bentham and Hooker. This latter species extends through Northern and Western Asia as far as the Himalaya (Hooker); or through Russian Asia except the extreme North (Bentham and Hooker). The derivation is obviously رنج انگشت = “five fingers”.

² P adds برسام after سرسام; is this dittography on P's part, or have other copyists omitted برسام knowingly, thinking it to be dittography?

برسام — inflammation of the diaphragm (Schlimmer); pain in the breast, wind in the stomach, pleurisy (Steingass, *Pers. Diet.*).

³ حب الترح is a corruption, found in medical works, of حب القرع; the latter name has been given because of the resemblance of the segments of the worm to the seeds of the gourd.

⁴ The Rhinoceros appeared as *karkaddan* in the last Section; *sinād* also seems to be the same animal. In Damīri the rhinoceros is

a single horn on the front of its head, like the *karkaddan*: and Jauharī states in the *Sihāh* that this beast is the *karkaddan*. It is a very hostile animal, and lives in Sistan and Bulgaria. Its blood taken by one suffering from diphtheria will open up [the obstruction] immediately. Its flesh cooked with centaury will cure one suffering with colic. The ashes of its ankle-bone mixed with its fat cures marasmus.

Dubb, the Bear, called *ayū*¹ by the Turks, and *ōlka* by the Mongols. It is an ugly and dirty² animal; and it is at enmity with the cow and the panther. The Arabs call its cub *daisam*. When the young is born, its parts are intertwined together, and the mother licks it—so much that the parts become distinct, and in the twinkling of an eye she carries it off³ into a corner from fear of ants. The eye of a bear tied up in linen and bound on a person with quartan fever will cure him. Its bile, ground up with pepper and used as an ointment on ringworm of the scalp, will make the hair grow; and it will cure carious teeth, and dimness of vision, and epilepsy. Its fat pounded up with silbert nuts will make hair grow in ringworm of the scalp, and will cure convulsions and (maculo-anæsthetic) leprosy. If its blood be mixed with chiretta root and rubbed on any member, no hair will grow there.

Dhi'b, the Wolf, is called *sirhān* by some of the Arabs, *qurt* by the Turks, and *hīna* by the Mongols. It is a malignant, impudent and spiteful animal; and the female is worse than the male. Every animal retreats when it sees a man, except the wolf, which comes forward. If the man sees the wolf first the victory will be his: but if it sees him first the wolf will overcome the man. The wolf carries off the sheep

described under *sinād*, while *harish* refers to “a certain speckled species of serpents”; but the latter term is also said by him, quoting al-Jauharī, to be applied to a certain beast having claws like those of a lion, and a horn on its head, which the people call *al-karkaddan*.

¹ Transliterated *ayū* in Redhouse's *Dict.*

² For اطلب I must, I think, read اطلس, in spite of its not having any MS. support.

³ I am not quite satisfied with the reading; پدا شود and درهم رفته are not quite obvious; can هر لحظه mean “immediately”, or is it possibly an error for في لحظة, as I have translated it?