SOME REMARKS ON THE AFRICAN WILD ASS

by

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With two plates

Introduction

Without any doubt the African Wild Ass should be considered a species threatened with extinction. Therefore, it seems worth-while to collect as many data on this species as possible and to do this quickly. Data and material, however, are scarce. Many sportsmen and zoologists observed the animal in natural conditions and hardly any book or paper on the wildlife of regions in which Wild Asses occurred or still can be found, fails to record some observations. However, these observations mostly are more or less incidental. Only during the last years some special studies have been made on the last remnants of the Wild Ass in Ethiopia and Somalia (Simon, 1966, 1968; Blower, 1968; Klingel, 1971a, b), in order to prepare some measures for the conservation of the species.

From a zoological point of view, we are too late to collect all information necessary to give an appropriate account of the original distribution both of the species as a whole and of all subspecies that might be distinguished, and even of the taxonomic characters of these subspecies. The question as to how many subspecies once existed must remain unanswered. At least one subspecies still survives (Harper, 1945), the fate of others is uncertain.

Material of the African Wild Ass is extremely scarce in museum collections. The reason is that most material of big game in museum collections has not been collected on purpose by zoological collectors, but by sportsmen hunting for trophies. These sportsmen afterwards sometimes presented these trophies to a museum, but essential data usually are lacking. As far as Wild Asses are concerned, no sportsman was interested in shooting "donkeys". Even professionals, collecting big game for museums, objected against shooting Wild Asses (Akeley, 1914). Some material came from animal dealers, who preserved skins or skulls of animals accidentally killed during catching operations (Menges, 1887). In zoological gardens African Wild Asses always were scarce. They were considered to be of no interest for the

general public because they looked so much like domestic Donkeys. The African Wild Ass on the famous engraving in Brehms Tierleben was drawn after a Donkey in the Berlin Zoo, used for riding. The photograph of African Wild Ass in Walker (1964) is a picture of domestic Donkeys! After the death of an African Wild Ass in a Zoo, most museums were not interested in preserving the remains. Of the breeding group in Munich only one skin and skull have been preserved, of the breeding group in Vienna only the skull of a stallion was retained. Moreover, most material from Zoos that came to a museum belonged to animals of doubtful origin and ancestry. The material from the Rotterdam Zoo, in the Rijksmuseum van Natuurlijke Historie at Leiden, and the series originating from Artis Zoo, Amsterdam, in the Zoological Museum at Amsterdam, cannot be considered as true African Wild Ass. The available good material, collected in the natural habitat and with a reliable locality, is scattered over several museums. As a rule these specimens are stuffed, and, as a consequence, it is impossible to bring together some workable series.

In this situation we have to look for our information in literature, old pictures, even such as Egyptian and Roman fresco's or mosaics, photographs taken in natural conditions or in Zoos. Gathering this kind of information takes much time and I am fully aware that the remarks in this paper are not conclusive. I am much indebted to Prof. Dr E. Lang (Basel), Dr H. Heck (Catskill, New York), Dr W. Schulz (Kiel), and Dr E. F. Jacobi (Amsterdam), for putting photographic material at my disposal. Most interesting were the photographs in the collection of the late Dr Erna Mohr, which she took in many Zoos all over Europe.

Distribution in the past

The African Wild Ass still occurred in north-west Africa in early historic times. The only proof for the occurrence in the western Sahara are the observations by Tristram (1860) and Von Wagner-Jauregg (Antonius, 1931). According to Antonius, all species of large mammals occurring in the region bordering the eastern Sahara also occurred in the western Sahara, and he thinks it to be most unlikely that the African Wild Ass would have been the only exception, more so because the former occurrence in Algeria stands beyond doubt. Authors disagree about the occurrence in some parts of the Sahara in recent times (Antonius, 1929, 1931, 1937; Geyr von Schweppenburg, 1917; Lhote, 1946; Malbrant, 1952; Monod, 1933; Monteil, 1951; Rode, 1943; Schomber, 1963). The distribution in the eastern part of the range is much better known (Sidney, 1965; Simon, 1966, 1968). It seems needless to repeat here all known locaties.

WILD AND FERAL

A difficulty in judging the specimens and observations arises from the obvious cross-breeding between true local wild stock and domestic Donkeys, which are allowed to roam about freely. Sometimes this cross-breeding is promoted, to get better and larger animals: often domestic mares are tied up near waterholes, visited by Wild Asses, to breed with wild stallions. In many cases it seems impossible to discern between wild herds and feral herds and in other cases remnants of wild herds seem to be mixed mith hybrids. The same difficulty is well known in the case of the Mongolian Wild Horse. Many observations on this subject are available (Antonius, 1931, 1937; Bland-Sutton, 1911; Geyr von Schweppenburg, 1917; Khalil, 1950; Lhote, 1946; Monod, 1933; Robbie, 1950; Rode, 1943; Schomber, 1963; Watson Cook, 1971; Ziccardi, 1970 b). According to Pocock (1909), domestic Donkeys show some characters which are not found in wild animals. As a rule domestic Donkeys have a large black or brown patch at the base as well as at the tip of the ear and the colour of the legs and the belly has the same tinge as the rest of the body or approximately so. In Wild Asses there is no dark patch at the base of the ear and the legs and the belly are nearly white. I came to the conclusion that the countershading in Wild Asses and the absence of the countershading in domestic Donkeys must be considered a very important character. As soon as the countershading is missing, the animals are either domestic Donkeys or hybrids between domestic Donkeys and Wild Asses (Maliepaard & De Vos, 1959; Portielje & Abramsz, 1922). Another character, not mentioned by Pocock, may be the light throat and the nearly white fringe of the lower jaw in Wild Asses. The dark markings, which may be used to discern between the subspecies, can be very pronounced in domestic Donkeys too. But the presence of spinal and shoulder stripes and boldly striped legs in one and the same animal is no proof that this animal is a hybrid between a domestic Donkey and a Wild Ass. Hybrids between Nubian Wild Ass, with shoulder stripes and without any stripes on the legs, and Somali Wild Ass with striped legs and without shoulder cross, show both characters, as can be seen on the photographs given by Heck & Hilzheimer (1920, pl. 55). As a rule, these characters are more pronounced in hybrids between the two subspecies. Antonius (1931) treated the characters of hybrids at length, but failed to see that a combination of markings on the legs and the presence of a shoulder cross is no proof of cross-breeding with domestic Donkeys (Antonius, 1937). This slight mistake of such a brilliant scientist had very disagreeable consequences and contributed to the confusion in the systematics and nomenclature of the African Wild Ass.

Systematic position and subspecies

It seems beyond doubt that the African and the Asiatic Wild Asses both were derived from common ancestors (Groves & Mazak, 1967). Ziccardi (1970 a) thinks that the Wild Ass entered Africa about 500.000 years ago. Separated from the ancestral stock in Asia, the Wild Ass developed into a separate species in Africa. It seems most probable that the two species of Asiatic Wild Asses and the African Wild Ass may be considered to belong to one and the same superspecies sensu E. Mayr, or to the same species complex sensu Toxopeus. Entering Africa from the north-east, the species spread over the whole northern part of Africa. The forest belt, south of the Sahara, may have acted as a natural southern border. In the east, the Ethiopian mountains formed a barrier and the Wild Ass could only proceed along a narrow passage between these mountains and the Red Sea. The southern border of its range more or less coincides with the north-eastern border of the range of the Grévy Zebra. This may be due to the fact that the ecological needs of the species are different but a competition between the two species may also be considered.

As far as we know now, the most important characters distinguishing the subspecies of the African Wild Ass can be found in the length of the skull, the length of legs and body, pattern of cheek-teeth, and the dark markings on the skin, such as the spinal stripe, absence or presence of a shoulder cross, and dark markings on legs and ears. The broad, black spot at the base of the back of the ears, common in domestic Donkeys, has never been observed in genuine wild animals, but may have occurred in some unknown, extinct subspecies. Differences in the colour of the skin have been used as subspecific characters, but as colour shows a remarkable seasonal variation, this character is rather difficult to use. Dark markings, such as occur in the African Wild Ass, occasionally also can be found in Asiatic Wild Asses. A spinal stripe is always present in Asiatic species. In the eastern part of the African region the characters mentioned show a clear cline, going from north to south. In the Nubian desert the Wild Ass developed a spinal stripe and a short shoulder cross, but hardly any markings on the legs. In the most southern part of the range, Somalia, the spinal stripe is present, but not always clearly developed over its whole length and as a rule the shoulder cross is missing, though sometimes weakly developed in a few specimens. In the population of Somalia the dark markings on the legs are always present. The skull is shorter and higher in the northern population, longer and lower in the animals of Somalia. In the northern population the body is shorter and the relative length of the legs is larger. Groves et al. (1966) found differences in the pattern of the cheek-teeth between northern and

southern animals and Skorkowski (1958) thought that he could distinguish three subspecies in north-eastern Africa judging by the measurements of the skull. Thus, going from north to south the spinal stripe becomes less pronounced, the shoulder cross becomes less developed, the markings on the lower legs become more pronounced, the skull becomes longer and lower, and the legs become shorter in relation to the body. A less important character can be found in the shape of the hoofs, which are high and narrow in the north, broad and flat in the south. I could not confirm the difference in the pattern of the cheek-teeth.

Possibly such a cline also existed going from east to west. According to Antonius (1931), the population of the Central Sahara may have been more or less similar to that of the Nubian desert. But, as far as we can see from the mosaic of Hippo Regius and the rock-paintings of Enfouss, the north-western population showed very pronounced markings on the lower legs and a well developed shoulder cross. In many respects the population of the Nubian desert came closer to the Asiatic types of Wild Ass and the populations with pronounced markings on the legs and long skulls were found at the periphery of the range.

It seems hardly possible to find a clear-cut range for the subspecies, because the characters discerning them are intergrading gradually over long distances. There is no difficulty as far as the Nubian or the Somalian populations are concerned, but from northern Eritrea to southern Ethiopia the characters change gradually. If we accept the opinion of Skorkowski (1958) and distinguish three subspecies in north-east Africa, the border between the Nubian Wild Ass and the intermediate subspecies could be drawn somewhere in the Tokar region in Sudan and between the Somali Wild Ass and the intermediate subspecies along the Awash River in Ethiopia. As type locality of the intermediate subspecies Eritrea could be accepted.

Nomenclature

The species has been described as *Equus asinus* by Linnaeus, 1758, the type being some domestic Donkey. Fitzinger (1857) was the first to name the African Wild Ass, but as far as I could find this name is merely a nomen nudum.

Every domestic animal has had some wild ancestor and so has the domestic Donkey. There is no proof for the opinion expressed by Fitzinger and others that the Asiatic Wild Asses played any role in the domestication of the Donkey. Pocock (1909) drew attention to the fact that domestic Donkeys show some characters that are not found in any known wild subspecies. So

Pocock concluded that the domestic Donkey might have originated from some extinct subspecies, unknown to science. Trumler (1961) tried to fill this gap by describing a hypothetical subspecies, which he called *Asinus africanus arabicus*, a name preoccupied by the name *Asinus vulgaris arabicus* Fitzinger, 1860 (or presumably 1857) given to a domestic breed of Donkeys in Arabia, and there is no reason to consider this name a nomen nudum, as is done by Trumler.

According to the rule of priority *Equus asinus* L. should stand as the correct name for the whole species. The Linnean type being a haphazard domestic animal, there is no such thing as a nominate race. To evade this difficulty, Bohlken (1961) proposed to bring every domestic animal under the name of the wild ancestor. This would have advantages, but would be contrary to the rules of priority. Much better would be to suppress all Latin names given to domestic animals. But as long as this question has not been arranged officially, we will have to carry on with a most unsatisfactory nomenclature.

The nomenclature of the different subspecies is just as confused. Several names have been proposed and others rejected. Rejection of some of the names was founded on misunderstanding, on the authority of some well known author and in some cases even on lack of knowledge of the German language! In this respect some revisions and checklists added to the general confusion (Allen, 1939; Ansell, 1967; Krumbiegel, 1958; Rode, 1943; Sidney, 1965; Ziccardi, 1970 b). Even some painstaking works, containing much usefull information, failed to solve the problems (Groves, Ziccardi & Toschi, 1966; Lydekker, 1916; Pocock, 1909; Skorkowski, 1958; Ziccardi, 1970 a).

Now this may seem to have only theoretical importance, but it appears to be of some practical interest in the case of nature conservancy. If we try to save the last remnants of the African Wild Ass, the taxonomic characters of the last herds should be studied just as carefully as the ecology and ethology. Do all living Wild Asses in Africa belong to one and the same subspecies or should we discern between two still surviving forms? Would it be worthwhile to reconstruct a subspecies, most certainly extinct, from a captive herd in which genetic material of this subspecies is still present? From the literature on conservation of the Wild Ass it becomes clear that the conservationists are not fully aware of this problem (Blower, 1968; Boswell, 1970; Fiedler & Petter, 1970; Harper, 1945; Hufnagl, 1966; Simon, 1966, 1968; Watson Cook, 1971).

The Nubian Wild Ass can without difficulty be called *Equus asinus africanus* (Fitzinger, 1866). Fitzinger used the name already in the first print of his popular book on Mammals (1857) and this is mostly given as

the proper date. To me only the second edition (1860) was available, so I think it more safe to refer to that edition in this paper, as is done by many other authors. In both these cases the name can be considered a nomen nudum (Anderson, 1902). Fitzinger's description of 1866 is in fact a differential diagnosis between his *Asinus africanus* and *Asinus taeniopus* Von Heuglin (1861a, b) but I think we should accept the name as valid.

The Somali Wild Ass should be called *Equus asinus somaliensis* Noack, 1884. There is no reason at all to reject this name, given by Noack, as is done in most British literature. The description by Noack is clear, the type is designated and present in the British Museum (Nat. Hist.), London, and the name has priority over *Equus somalicus* P. L. Sclater, 1884, because the paper by Noack was published April 1884 and that by Sclater November 1884. The type of both *E. somaliensis* Noack and *E. somalicus* Sclater is one and the same animal, collected by Menges (Menges, 1887).

Many names are available for the intermediate subspecies. The name *Asinus taeniopus* Von Heuglin (1861a) has been rejected by several authors, because they thought that the type was a hybrid between a Wild Ass and a domestic Donkey, but there is no reason whatsoever to think so. In my opinion the plate by Von Heuglin is excellent, the colour excepted. However, this is no reason to reject the name, because many coloured plates, such as the pictures by Sclater (1884), are not correct as far as colour is concerned. What is important is, that the picture of Von Heuglin's *E. taeniopus* shows a very clear countershading, which is always missing in hybrids between domestic Donkeys and Wild Asses (Lang & Von Lehmann, 1972).

Von Heuglin's type was an animal in captivity, which he saw in Eritrea. But in the year 1851, another animal arrived in the Ménagerie du Jardin des Plantes in Paris, from Ethiopia, which looked like Von Heuglin's type is every aspect, except in the colour and the markings on the legs, which are less pronounced. This animal has been described by Milne-Edwards (1869) and figured on his plate 5. In this publication, often overlooked by later authors, Milne-Edwards pointed to the difference in colour, but did not hesitate to consider the animal to be *Asinus taeniopus* Von Heuglin. The picture in Milne-Edwards gives all typical characters of the intermediate subspecies, including the correct colour, the countershading and white legs, the white throat and even the light fringe of the lower jaw. Comparing these two pictures with some photographs of wild-caught animals from Eritrea, taken in Rome, 1930, in my opinion there is no doubt as to the validity of Von Heuglin's name for the intermediate subspecies. Ziccardi (1970b) expressed his doubt concerning the genuine wild origin of the stallion of Wild Ass in the Tierpark Friedrichsfelde, Berlin. I saw and studied this animal several

times and I think the countershading and all other characters prove its genuine wild origin.

Ziccardi (1970a) has given a good redescription of the three subspecies, once occurring in north-eastern Africa. There is no reason to consider *Equus somaliensis* Noack a synonym of *Asinus taeniopus* Von Heuglin, as is done by Neumann (1935) and De Beaux (1928).

Several subspecies must have become extinct before they got known to science. Besides the three subspecies mentioned here, *Equus asinus atlanticus* P. Thomas, the extinct Algerian Wild Ass, can be recognised. There is no sense in describing hypothetical races, even if it seems most likely that these once existed. I therefore propose the following list of subspecies:

1. **Equus asinus africanus** (Fitzinger, 1866)

Asinus africanus Fitzinger, 1866: 588.
Equus asinus hippagrus Schomber, 1963: 121.

Hab. Nubian Desert, south to Atbara River, near Red Sea south to Tokar region. Perhaps this race also occurred formerly in the Central Sahara. Extinct.

2. **Equus asinus somaliensis** (Noack, 1884)

Asinus taeniopus somaliensis Noack, 1884: 100-102.
Equus asinus somalicus P. L. Sclater, 1884: 540-542.
Equus nubianus somalicus; Peel, 1900: 300.

Hab. Somalia, in Ethiopia north to Awash River. Extinct in part of its former range. Still occurring south of Tendaho and in some parts of Somalia, anyway near Las Anod.

3. **Equus asinus taeniopus** (Von Heuglin, 1861)

Asinus taeniopus Von Heuglin, 1861a: 1, pl. 1.
Asinus taeniopus; Milne-Edwards, 1869: 41, pl. 5.
Asinus asinus dianae Dollman, 1935: 152.
Equus asinus aethiopicus Denman, 1957: 116.

Hab. From Tokar region in the north to Awash River in Ethiopia in the south, along the coast of Red Sea in Eritrea. Extinct in most of its range. Perhaps some animals still to be found in Eritrea. Some herds still present in Ethiopia near Sardo and the Danakil depression.

4. **Equus asinus atlanticus** P. Thomas, 1884

Equus asinus atlanticus P. Thomas, 1884: 45.

Hab. Parts of North Africa, anyway Algeria. Extinct shortly after Roman times.

Summary

The African Wild Ass once occurred in the whole of North Africa. Four subspecies can be recognized, two of which probably still survive in small herds. Other subspecies became extinct before they got known to science. For the subspecies still surviving in Ethiopia north of Awash River and perhaps in some parts of Eritrea, the valid name *Equus asinus taeniopus* (Von Heuglin) is available. South of Awash River in Ethiopia and in parts of Somalia the subspecies *Equus asinus somaliensis* (Noack) still survives in small numbers.

Attention should be given to the systematic identity of the surviving herds.

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Plate 1

Upper fig. *Equus asinus taeniopus* (Von Heuglin), ♂, in Tierpark Friedrichsfelde, Berlin. The animal originates from Eritrea. Note countershading, white throat, white fringe of lower jaw and white area under the ear, all typical characters of wild asses. The shape of the head is much the same as in *Equus asinus africanus* (Fitzinger). Courtesy Prof. Dr H. Dathe, Berlin.

Lower fig. Group of *Equus asinus taeniopus* (Von Heuglin), caught in Eritrea, in Rome, 1930. These animals are very uniform and there is no difference between these and the stallion now living in Berlin. Legs relatively long. Courtesy Dr H. Heck, Catskill N.Y.

Plate 2

Upper fig. Pair of *Equus asinus africanus* (Fitzinger) in Zoo Schönbrunn, Vienna, 1900. On this old photograph the colour pattern is not very well visible. Note the shape of the head, different from that of *Equus asinus somaliensis* (Noack). The habitus is characteristic, with long legs and short body. After O. Antonius.

Lower fig. Group of *Equus asinus somaliensis* (Noack), Zoo Basel, 1970, caught near Las Anod, Somalia. The animals show all characters of true wild ass, including countershading, white throat, white fringe at lower jaw and white area under the ear. In one of the animals, not visible on photo, a shoulder stripe is present. In relation to the body the legs seem shorter than in *E. asinus africanus* (Fitzinger). Note the very long shape of the heads.