OBSERVATION ON THE RECENT HISTORY, NATURAL HISTORY AND MANAGEMENT OF THE PIGMY HOG (Sus salvanius)

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IBEX J.M.E. 3: 33-36

One early morning in 1964 I was trying to negotiate a large marshy area on elephant back in south eastern part of Manas Wildlife Sanctuary (now a National Park), when the "Mahut" Baneswar excitedly showed me a small animal in a burnt patch of grassland and whispered: "Tukuri Barah". The animal looked like a miniature Wild boar, but despite my inexperience, I noticed that the animal did not have any stripes or markings on its body, which was almost black with a faint brownish tinge. The animal was standing still in some burnt grassland and shortly afterwards suddenly volted. Its movement was fast and lithe, which clearly indicated that the animal, which had the size of a piglet of about three months age, was actually a mature animal and naturally was not a *Sus scrofa*.

I was told that the animal was the "smaller" pig, which had become very rare and not easily sighted any more. Since the animal had such a markedly different appearance to the Wild boar and I strongly suspected that this could be the Pigmy hog (*Sus salvanius*), which had recently been declared extinct by E.P. Gee in his book named "Indian Wild Life", published in 1958, I tried to track the animal but failed. My next sighting of pigmy hogs came about some 3 months later in the same area when we saw only one animal, which was also running away. Naturally, identification remained uncertain. However, about one month later I saw a sounder of three. A male and two females were foraging togheter when we sighted them and soon the three trotted away. But before they left, they stood still for a brief while, which offered me the chance to have a clear, if brief, observation.

Meanwhile I studied whatever literature that was available on pigmy hogs as well as a mounted head and shoulder trophy at Gauripur. I had now no doubt that Pigmy hog survived in Manas. I contacted E.P. Gee, but he was not prepared to accept my unconfirmed identification. I invited him to come to Manas to see for himself, but although he promised to do so, the trip never took place before his sudden death in 1966.

Subsequently, I sighted pigmy hogs repeatedly in the same area at Manas, east of Bhuyapara, near Digjari stream and I am quite sure only a few sounders were alive in that area at that time. In 1969 I sighted pigmy hogs near Latajhar and also near Kuribeel. I also found some old nests, which proved they had colonised this area and, more importantly, they were breeding. In later year, I sighted the species or found conclusive evidence of its presence in many other areas, east of the Beki River, also known as the Manas River.

1. Clue to a successful propagation

As far as I can understand, the main reason for the disappearance of the pigmy hogs over most of its former range is the loss of habitat and poaching of the animal for its meat, which is reported to be extremely palatable. This is a highly specialised species, found only in the tall grass habitat of the Terai Bhabar belt in the sub-Himalayan tract. Though I had once found a dead pigmy hog being carried out by some hunters in the Cachar district of southern Assam, I could not find any other conclusive evidence of the existence of this animal in that area. In any case, the grassland in such areas of sub-Himalayan tract came under tremendous pressure of the rising population since the 1940's. Most such areas have been converted to agricultural land. In addition, the few remaining grasslands are utilised for grazing for domestic cattle and the commercial extraction

of various forestry products, notably thatching grasses for roofing houses. The adjacent areas are inhabited by mostly plains tribal people of Bodo community and these people are traditionally heavily dependent on the forest resources. They collect various fruits, tubers, roots, etc. from these areas as food and also utilise various plants as medicines. As a result, the available habitat for this species was greatly disturbed and poaching was rampant. Besides, shooting of animals, traps and snares are used for poaching, which mostly went undetected.

Another factor of biotic interference also caused great harm to all the grassland animals in general and pigmy hogs in particular. This was deliberate burning of these grasslands. During the dry season, when the grass dried up in the high alluvional areas, the areas were set to fire from end of December till the advent of the monsoon showers, that come in early April. Burning even more that once during each dry season was extremely common, since burning would invariably produce a new flush of succulent fodders for domestic stock during these periods. However such "hot" burnings are extremely harmful for all types of wild animals due to loss of cover and the very intensive disturbance caused by movement of cattle and human beings. In addition, besides, illegal poaching was greatly facilitated through the concentration of game in the few remaining areas left unburnt.

Unfortunately, the breeding season of Pigmy hogs also coincided with this period, when their natural habitat was ransacked. As a result was that the animals had barely any chance of nest-building, essential for the protection of newborn litters, even if they could have survived and mate.

The Digjari area, where I first sighted the pigmy hogs, was situated quite close to some villages located near the southern boundary of the Sanctuary, where the intervening area was a large swamp, typical of the Terai. This swamp was quite extensive and impassable. As a result the high alluvional grassland on the north (Digjari area) was hardly utilised by the domestic stock and was spared the worst of this burning and other biotic interference. This is where the pigmy hogs managed to survive.

Since 1964 I managed to stop domestic stock grazing within the limits of the Manas Wildlife Sanctuary. We also attempted to cut off other human intrusion for various use. But we had very little manpower and other resources to accomplish these objectives. However, people of the surrounding villages, though resentful, realised that they cannot enter the area at will and damage the habitat. This was possibly the turning point because by 1969 the pigmy hogs were sighted in some other areas, as mentioned earlier.

There was also a marked improvement in this situation since 1975, after the inception of the Project Tiger, when Manas was made into a Tiger Reserve. More resources were available and it became possible to take anti-poaching activities more seriously and to ensure protection of the habitat more rigidly. Sustained hard work by a band of dedicated field staff made it possible to provide a more secure ecological environment for the wild animals, which was reflected by a marked upward trend of the animal population of many species.

In the concept of management, no human interference to nature was envisaged in the Project Tiger areas. But in this regards I made a small adjustment, which I feel needs to be mentioned. The area of Manas contains grassland and tree forest in the approximate proportion of about 45% and 55%. There are a large variety of habitat types available in the area with very pronounced edge effects and influence of ecotones. Manas thus holds 22 of the principal endangered species of wild Indian mammals, which is a greatest number than any other reserve in the sub-continent and gives an indication of the extreme biodiversity it supports. Naturally maintaining the diversity in habitat types is of extreme importance in the management of this area. But the soil and rock formation with the hot monsoon climate prevailing in the zone will not allow the grassland to persist for long, if totally left to the natural ecological processes. The climatic climax of this area is semi-evergreen to moist deciduous forest, as dictated by the local microclimate. If left to nature the grassland (except the swampy reeds bets) on the alluvional soil will gradually be transformed into the climax type of high forest. The entire area thus will be covered by tree forest in course of time, which will ultimately result in the loss of many of the grassland fauna.

A very pertinent question thus arises as to how the existing grasslands (covering over 40% of the Sanctuary area) are normally mantained. In fact, the most likely explanation is human induced burning of these areas, which has been undertaken since historical times. The burning presents the re-colonisation of the tree species on the one hand and on the other helps to pro-

mote vigorous growth of grass. A close look at any patch of grassland in Manas will show that tree seedlings, specially of the fire hardy types, are trying to invade and colonise the grassland near the edges, where the grassland merges with the tree forest. Unless the grassland was burnt, these seedlings would become established to replace the grass in course of time.

This circumstance has prompted the Park authorities to adopt annual grass burning as a management tool, though the normal practice of burning the grass when the entire area becomes dry at the end of December, was discarded. Instead rigidly controlled "early " burning was meticulously planned and practised. Such burning would start immediately after the monsoon (within a fortnight) from end of October or early November, as the case may be and continue till the onset of pre-monsoon showers. Since extensive areas of dry grassland are not available at these times, only small patches can be burnt. Every day during this period antipoaching patrolling parties would criss-cross the area on elephant back and put fire to small patches which they may find to be dry enough to burn.

Naturally such burning would never be extensive and would never be very "hot". Even within the burnt areas many unburnt patches are likely to remain, as such patches were not dry enough to burn.

Such induced and forced burning would therefore mantain a chequered, irregular shape with a lot of intervening unburnt and partially burnt areas and would provide excellent cover conditions for both the herbivores and the carnivores alike. Such a practice also maintains sufficient succulent fodders for the herbivores during the lean period, as within 2 or 3 weeks of burning fresh and vigorous grass sprouts. In fact, recently burnt areas attract a large number of animals.

Loss of wildlife during burning has not been reported, though some loss of insects and rodents cannot be ruled out. However, I supervised burning on many sessions, when I kept a strict vigil and yet no loss of wildlife had been noticed by me.

The Manas area has a rather high water table and the area contains ground water in ample measure. Loss of ground moisture or dessication therefore appears to be marginal.

This practice of controlled, early burning of the grass produced excellent results. The percentage of grassland and tree land remains approximately the same even now, as in the early 1960's. There has been a steadily rise in the population of various species, of grassland species of wild animals in particular. All the species like Hog deer (*Axis porcinus*), Swamp deer (*Cervus duvauceli*), Pigmy hog (*Sus salvanius*), Hispid hare (*Caprolagus ispidus*), Rhino (*Rhinoceros unicornis*), etc., have shown marked improvement in status. Besides some species of birds, like the Bengal florican (*Eupodotis bengalensis*), the Swamp partridge (*Francolinus gularis*) and the Peacock (*Pavo cristatus*) have increased considerably in numbers. There are indications that things had been going in the right direction. There is, however, scope for finding out the best way to maintaining the grassland for the survival of *Sus salvanius* with some other endangered species for which detailed research is called for. Research is also warranted to find out biological facts of the life cycle of *Sus salvanius*, as very little is yet known about this elusive animal.

But some facts which have been observed and found from the limited literature may be interesting to discuss. It seems the status of the species, even at the best times, had been "sparse". The largest sounder I came across was of 5 animals. Usually these animals are commonly found in two or three only. The litter size is also small, 3 or 4 *per* litter.

The species occupies a habitat, which supports large variety of predators, large and small, including several raptors or birds of prey, who can easily lift a sub-adult and even an adult specimen. The species seems to have hardly any defence against the varied predators, except sharp instincts, aided by excellent eyesight, olfaction and hearing. The animal freezes on sensing danger and suddenly bolts at high speed. The thick tall grass they occupy, the grass tunnels they use for their movements and their crepuscular activities, all seem to aim at avoiding predation. But even so, the sub-adults are much more prone to predators because of their tiny size (mean weight only about 200 g at birth) and lack of protective capability of their mothers. I have observed such piglets being taken by birds of prey and even by a Monitor lizard (*Varanus salvator*). The percentage of survival of even one individual per litter is doubtful. In fact I have come across only one case where two yearlings were following their mother. It is a very delicate species and requires very careful handling.

Besides, in Manas National Park (upgraded in 1990) the species definitely occurs at a small wildlife sanctuary, named Barnadi, situated at a

distance of about 70 km to the east. This small sanctuary is also included within the buffer zone of the Manas Tiger Reserve. Pigmy hogs had been captured by some tea garden people in 1971 for the first time on the edge of this sanctuary and the species is known to occur here till now, though the status here is indeterminate. Some sporadic reports had been received now and then about occurrence of the species and even sightings of the species from some other parts, which prompted William Oliver to request a survey to be conducted by Assam Forest Ranger, S.K. Sarma, who had known this species well. Unfortunately Sarma could not complete the study in 1987, though he had visited the more likely areas of probable occurrence of the Pigmy hog in northern Assam. However, he could not find any proof of the present existence of the species anywhere except in Manas and Barnadi Wildlife Sanctuary.

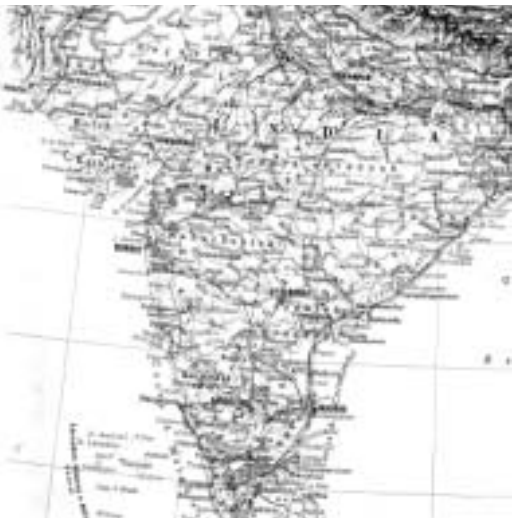
2. The future

The future of this species seems to be hanging in precarious balance. The Manas area, in my estimation, appears to be the last bastion of this exacting and delicate species, where it made a definitive come back. But the future of Manas itself is covered by a thick cloud of uncertainty, arising out of a militant political movement taken up by the plain tribesmen in demand for a separate self-governed state (province). The militants have raided the Park on several occasions and terror reigned among the wildlife field staff. Nearly a dozen wildlife staff from the isolated interior areas have been withdrawn.

In effect the management authorities have lost any effective control over the area. Wild animals of economical value like the rhino, elephant and tiger have been killed by opportunist poachers. As far as I know, no appreciable damage to the pigmy hogs has been caused so far. Meanwhile possibilities of some settlements of the political imbroglio appears to become brighter in a decade.

The forest area in the State of Assam is under tremendous pressure from rising population. Nearly 13% of the total forest area is lying under encroachment and there seems to be hardly any hope of retrieving the situation. Maximum pressure is exerted on the grassland and hence the tiny Pigmy hog may not be able to get back any of its lost territory. The only alternative at the moment seems to be saving the remaining habitat and the populations at any cost. Both Manas and Barnadi have the legal status for the purpose. There have been repeated attempts in the past (last attempt was in 1982) to grab land for cultivation in Manas and Barnadi. But all these attempts have been thwarted. The Government is quite determined to protect these areas, which provides some hope.

Political understanding of the value of the gene pool that is being sought to be protected and the required support for preservation is of utmost importance for the success of the efforts. International concern and help may go a long way to plan and implement the necessary measures.



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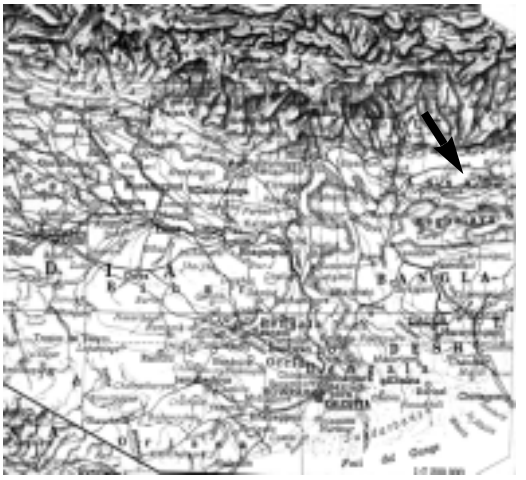

State of Assam