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THE CRANIOLOGY AND DENTITION IN THE PIGMY HOG, WITH A NOTE ON THE GENERIC STATUS OF *PORCULA* HODGSON, 1847.

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INTRODUCTION

The shy, rare and apparently inaccessible Pigmy Hog, with its restricted distribution in the thatch lands under the tropical hill forests of the eastern sub-Himalayas, created great interest among naturalists and taxonomists from time to time. Unlike the common European and Asiatic boars (*Sus* spp.), this animal was never domesticated and is struggling for its existence in the limited habitation concealed from sight.

Though much importance has been laid recently to save this threatened species of suid (Mukherjee 1963 ; Oliver 1978 ; Tikader 1983), yet it is very unfortunate that the taxonomic importance of this species has been always overlooked.

Pigs and their allies, African Wart Hogs (*Phacochoerus* spp.), American Peccaries (*Tayassu* spp.), etc., comprising six recognised genera and their nine to twelve living species, belong to the mammalian suborder Suiformes (Bunodontia). The other member in the suborder is the Hippopotamus. Characteristically these animals do not possess horns or antlers and unlike the ruminants, the other members of the even-toed Artiodactyla, their teeth are bunodont, i., e., cusps are cone-shaped tubercles. Members of the family Suidae are characterised by the following morphological features : (i) temporal canal absent ; (ii) supraorbital process short

and not connected with the zygomatic arch ; (iii) pterygoid fossa present and opening posteriorly ; (iv) infra-orbital foramina (some times double) large and situated above the third and forth premolars ; (v) canines with persistent pulp and growing ceaselessly ; (vi) a prenasal bone present and snout provided with a disc-like cartilage at tip ; (vii) third and fourth metapodials are always separate ; (viii) stomach simple and a caecum present in the alimentary system. The Pigmy Hog belongs to this group.

Among the living members of Suidae, two species (one polytypic and anothor occur at present in India : the Indian Boar, *Sus scrofa cristatus* Wagner 1839, the Andnman Pig, *Sus scrofa andamanensis* Blyth 1858 and the Pigmy Hog, *Sus* (*Porcula*) *salvanius* Hodgson 1847. The Indian Boars and the Andaman Pigs, in general morphology and behaviour show close affinities with the European Boar *Sus scrofa scrofa* Linnaeus. The differences are slight, for example, the Andaman Pigs show poor development of the crest and mane, their last molars(M^3) are a bit reduced in size and either shorter or nearly equal to the combined length of the preceeding two molars M^1 & M^2 taken together. Besides, these pigs are of moderate stature. But the Pigmy Hog is very distinct from *Sus* Linnaeus, 1758 proper, by several broad morphological and ethological features (list No. 3), for which it deserves a separate and distinct taxonomic status. However, since its discovery and first description, subsequent systematists always underestimated and failed to assess properly the taxonomy of this animal.

Historical Resume

It was Hodgson (1847 & 1848) who first ventured to study the morphology and anatomy of this unique species of Pig, based on a sub-adult male specimen and described it as a new genus and species of Suid *Porcula salvania*. The generic characters which he attributed were meagre and incorrect. For example the dentition was found to be erroneous by subsequent workers who studied adult speci-

mens of the same species that were kept mainly in the possession of the then Society's garden (now London Zoo) and British Museum. Hodgson, considering his only specimen nearly as full grown claimed the dental formula of this animal as $\frac{6}{6}\ \frac{1}{1} : \frac{1}{1}\ \frac{6}{6} : \frac{6}{6} = 40$ and comparing the straight milk canines, he correlated it with that of peccaries. Besides the dentition, "unusually diminished size of the inner back digits" impressed upon him to hold such view. In fact the peccaries are morphologically quite different from the Pigmy Hogs and belong to a separate family Dicotylidae. The dental formula is $I\frac{2}{3}\ C\frac{1}{1}\ P\frac{3}{3}\ M\frac{3}{3} = 38$. The Peccaries lack in the peculiar prenasal bone ; the third and fourth metapodials in them are fused to form a single bone ; the canines are almost straight like the carnivores ; the stomach is differentiated in three sections and so many other peculiarities by which they are distinct from the Suids.

However, almost within a decade of its first description Gray (1863), while accessing Hodgson's collection in the British Museum, renamed the Pigmy Hog by confusion as a dwarf species of *Sus* i. e. *Sus lilliputensis*. Garson (1883) and others studying the internal morphology of Pigmy Hog, observed great anatomical similarity with that of *Sus scrofa* Linnaeus and concluded that the Pigmy Hog was undoubtedly a species of *Sus* proper with negligible differences. It should be mentioned that the internal organs are found often quite similar, both structurally and functionally even in animals belonging to two separate families. However, Garson's proposition was not refuted and consequently the Pigmy Hog was considered as a species of *Sus* Linnaeus, 1758.

There after, since late 19th century, no further authentic occurrence of this tiny hog was reported and eventually no further taxonomic or biological investigation was made. But those few, who attempted to study the scanty and mingled up material in the custody of museum, were rather confused. Their contention was wrong and as such it was not very astonishing when Tate (1947) mistook the animal

as a subadult pig (*Sus scrofa*), or a pig with stunted growth. Actually the rarity of the animal, its rather remote and inaccessible habitat, were the reasons of such incorrect conception, especially under the circumstances of Hodgson's self-defeating statement. Only on the basis of very small size, three pairs of teats and very short tail, the species has obtained recently a separatate subgeneric status (Ellerman & Morrison Scott 1966). Thus *Porcula salvania* Hodgson became *Sus salvanius* (Hodgson) for some period and was subsequently revived as *Sus* (*Porcula*) *salvanius* Hodgson. Yet, in a recent monograph, Groves (1981), opined that *Sus salvanius* is a true *Sus* and is closely related to *Sus scrofa*.

Scope : Under these circumstances, it was felt necessary to study and review different aspects of the Pigmy Hog and its taxonomic distinctiveness to justify the validity of its nomenclature.

Fortunately, after a long absence, the animal which was thought to be extinct by zoologists reappeared dramatically in March, 1971. A twenty four hour long wood fire in north western Assam drove out a number of its kind along with the closely associated Hispid Hares from their covers. It created great impetus among interested zoologists (Mallinson, 1971, 1977 ; and Oliver, 1978, 1980). They ventured to study the breeding and population biology of this animal. Though their works were mainly concentrated on captive animals, yet the results have great role to play in determining the status of this, the tiniest pig in the world.

Now, by supplementation of the recent biological observations to the former recorded inferences (List No. 2), it becomes apparent that the taxonomic assisgnment originally made by Hodgson for this unique animal was worthwhile. The craniology and dentition of this hog (Table nos. 3 & 4) justify the eligibility of *Porcula* as a valid genus and is the present topic of this article.

Material for present study :

(A) Three specimens of skulls with jaws of *Sus scrofa cristatus* Wagner :

(i) Adult male skull with jaws of wild boar, Z. S. I. Reg. No. 18056, Loc. Cuttack, Orissa, Collector-T-Shaw.

(ii) Adult female skull with jaws of wild sow, Z. S. I. Reg. No. 17999, Loc. Arakan, Burma, Collector-A. Phayre.

(iii) Adult castrated pig's skull with jaws from Calcutta.

(B) Two specimens of skulls with jaws of *Sus scrofa andamanensis* Blyth :

(i) Adult male skull with jaws of wild specimen, Z. S. I. Reg. No. 17994, Loc. Port Blair, South Andaman, Collector-Major Ford, (1867).

(ii) Adult female skull with jaws of wild specimen, Z. S. I, Reg. No. 10952, Loc. South Andaman Collector-R. Hodgart.

(C) Two specimens of skulls with jaws of Pigmy Hog, *Porcula salvania* Hodgson :

(i) Adult male skull with jaws, Reg. No. 4334, I. M.

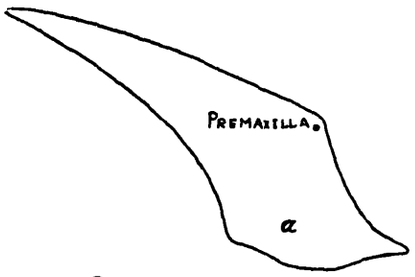
(ii) Sub-adult female skull with jaws, Reg. No. 19312.

(D) One complete skull with jaws of adult collared Peccary, *Tayassu tajacu* (Linnaeus) Reg. No. 19311, Loc. Arizona.

(E) Pre-historic remains of maxillary and mandibular specimens of Pigs, *Sus* spp. recovered from thirty two Arehaeological sites in India.

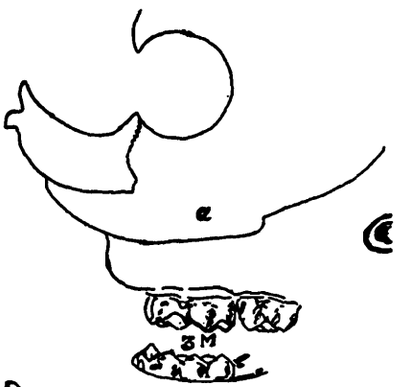
Observations : Superficially the peccary shows some similarities to the Pigmy Hog (convergence), by the possession of very reduced number of mammae (four pairs) ; a very short, sparsely haired tail ; roundish ear , and a short head (skull) with smaller orbits. Besides, the Peccary also breeds once in a year and raises a very small litter size, generally not exceeding two. But like the disimilarities in the anatomy and in limb bones, the craniology and dentition of the Peccary (Table 1 & 2, fig. f, k, q) are also very different and

eliminate any close phylogenic relation between the two. Whereas the craniology and dentition in *Porcula* and *Sus* are



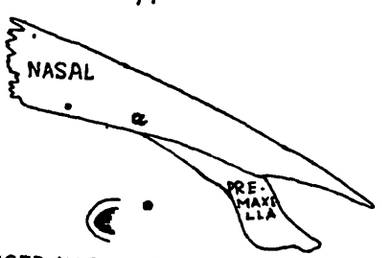
PREMAXILLAIN SUS.SPP. Fig 1

PREMAXILLA IN PIGMY HOG.



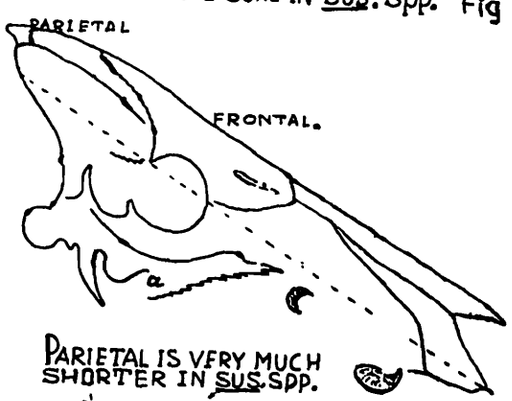
POSITION OF LAST MOLAR IN THE SUS. SPP. Fig 2

POSITION OF LAST MOLAR IN PIGMY HOG.

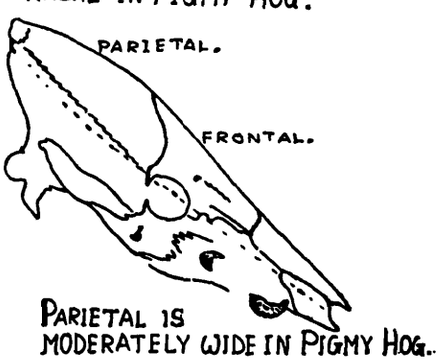


LONGER NASAL BONE IN SUS. SPP. Fig 3

COMPARATIVELY SHORTER NASAL IN PIGMY HOG.

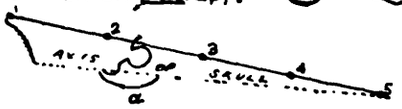


PARIETAL IS VERY MUCH SHORTER IN SUS.SPP.



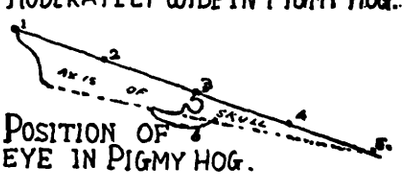
PARIETAL IS MODERATELY WIDE IN PIGMY HOG.

Fig 4



POSITION OF EYE IN SUS. SPP.

Fig 5



POSITION OF EYE IN PIGMY HOG.

Figs. 1-5 : The shapes and position of different bones in the skull and the position of the orbit in the Pigmy Hog and in the Indian Boar.

to some extent very similar (Table 3 & 4, Plate I-II). In this regard *Porcula* is nearer to the polytypic genus *Sus* with the following major differences (figs 1-5) : The nasal bone is comparatively shorter and broader in the Pigmy Hog. This bone is always longer in *Sus* species. The premaxilla tends to be rectangular in the Pigmy Hog, but in the species of *Sus* this is rather triangular and tapering behind. The orbit is situated above the M^2 in the Pigmy Hog, but in *Sus* spp. this is found above the edge of M^3. The zygomatic arch is very much concavely arched in the species of *Sus*, but in the Pigmy Hog, it is less so. The parietal bone is narrower and longer in the Pigmy Hog, but it is shorter and broader in *Sus* sp. The facial and frontal profile are rather arched in the Pigmy Hog, but they are almost in a plain in the Indian Boars and Andaman Pigs. The maxillae are laterally much more notched in the Pigmy Hog. The orbit is nearly complete because of the extended processes.

Out of the above mentioned differences, the shape of the premaxilla, the position of the orbit, the length of the nasal and parietal bones are of high taxonomic weight.

Discussion ; The general morphological characters of Suids as mentioned before are found in the Pigmy Hog, hence its place as a member of the family Suidae is unquestionable, but that it is not congeneric with *Sus* is obvious from the following points.

The Pigmy Hog (fig. 6 b) possesses essentially a small rudimentary tail (aprox. 3 cm), containing less than ten coccygeal vertebrae in contrast to the comparatively long tail of *Sus* spp. (*S. scrofa*, *S. barbatus*, *S. verrucosus*) which is composed of more than twenty coccygeal vertebrae. The teats in such species are always six pairs and placed equidistantly, whereas in the Pigmy hog the teats are three pairs and the gaps are uneven. The skull and jaws in Pigmy Hog are comparatively shorter than any species of *Sus*.

The Crest in Pigmy Hog is not high. The mane is absent in this animal. The ear in this hog is rather oval and like the tail is almost devoid of hairs. Now from the reports

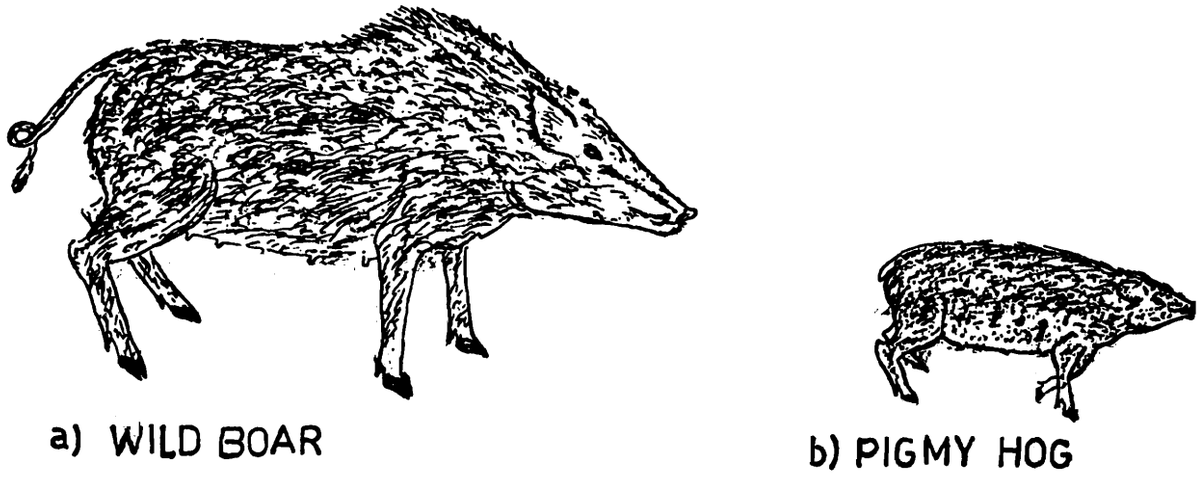
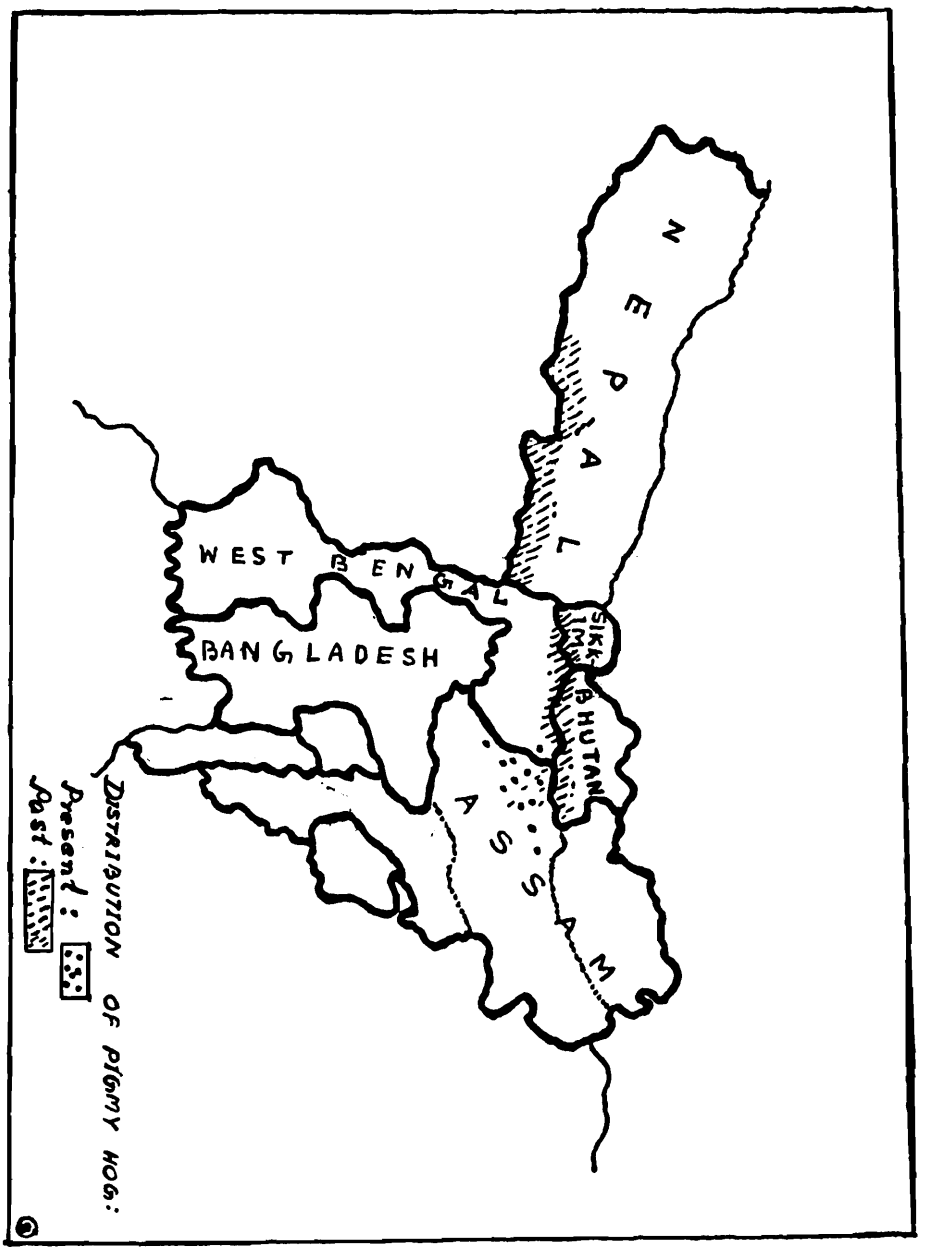


Fig. 6. The Indian Boar and the Pigmy Hog, their comparative size and shape.

of Mallinson and Oliver (List No. 2) it is learnt that the animal breeds only once in a year. After a gestation period of approximately 110 days, 3-4 young are born in April/May. It may be mentioned that the number of teats are proportionate to this litter size, but the litter size, which should have been inversely proportional to the body size, according to the general principle in mammals (Storer & Usinger, 1965) and should have comprised a few more offspring than those of *Sus* spp., shows astonishingly poor number in a year. It is very significant and indicates strongly a separate phylogeny of this hog. Oliver also observed that the pectoral half in the Pigmy Hog is comparatively weaker than the pelvic part, which is just reverse in the *Sus* spp. This certainly infiuences the gait in this animal. The more inward position of the cheek teeth inside the buccal cavity and the reduction of size in M^3, are quite significant. Certainly it affects the chewing movements (ectal-ental) in this hog. The restricted and limited habitat of this hog, including its former distribution (Map-1), is also very striking. The zone is not bridged by any intermediate species around, to suggest a phylogenetic splitting from *Sus*. It ranges within the tropical hill forests of the Eastern sub-Himalayas (av. alt. 600 & 700 meters) composed of tall grass jungles or thatch lands and with a different biota. In this closed eco-system its occurrence is also interestingly found in association with another important species of mammal, the Hispid Hare

(Oliver, 1980). In such a niche, where perennial waterholes are not frequent, the highlander (hog) seems to be not in the habit of wallowing like *Sus scrofa*.



Now, supplementing the craniology and dentition (List No. 1) it is observed that the Pigmy Hog is generically different from *Sus* proper i. e. it is separated from such a taxon by a 'decided gap'. It is noteworthy that the pigs or species of Sudiae are animals which have succeeded in maintaining their unaltered and primitive characters, so far as their osteology, dentition, feeding and breedihg habits are concerned. This has also been observed and reported by

Zeuner (1963) in his work on domesticated animals, and has been testified by the present author while accessing over the prehistoric animal remains of pigs, collected from different Archoeological sites in India. None of this ancient remains showed any affinity with those of the Pigmy Hogs. The new Anoplura species, recently found to be an ectoparasite in the Pigmy Hog, is also evolved distinctly and is hostspecific (Mishra & Singh, 1978).

Therefore, this tiniest hog in the world is believed to be

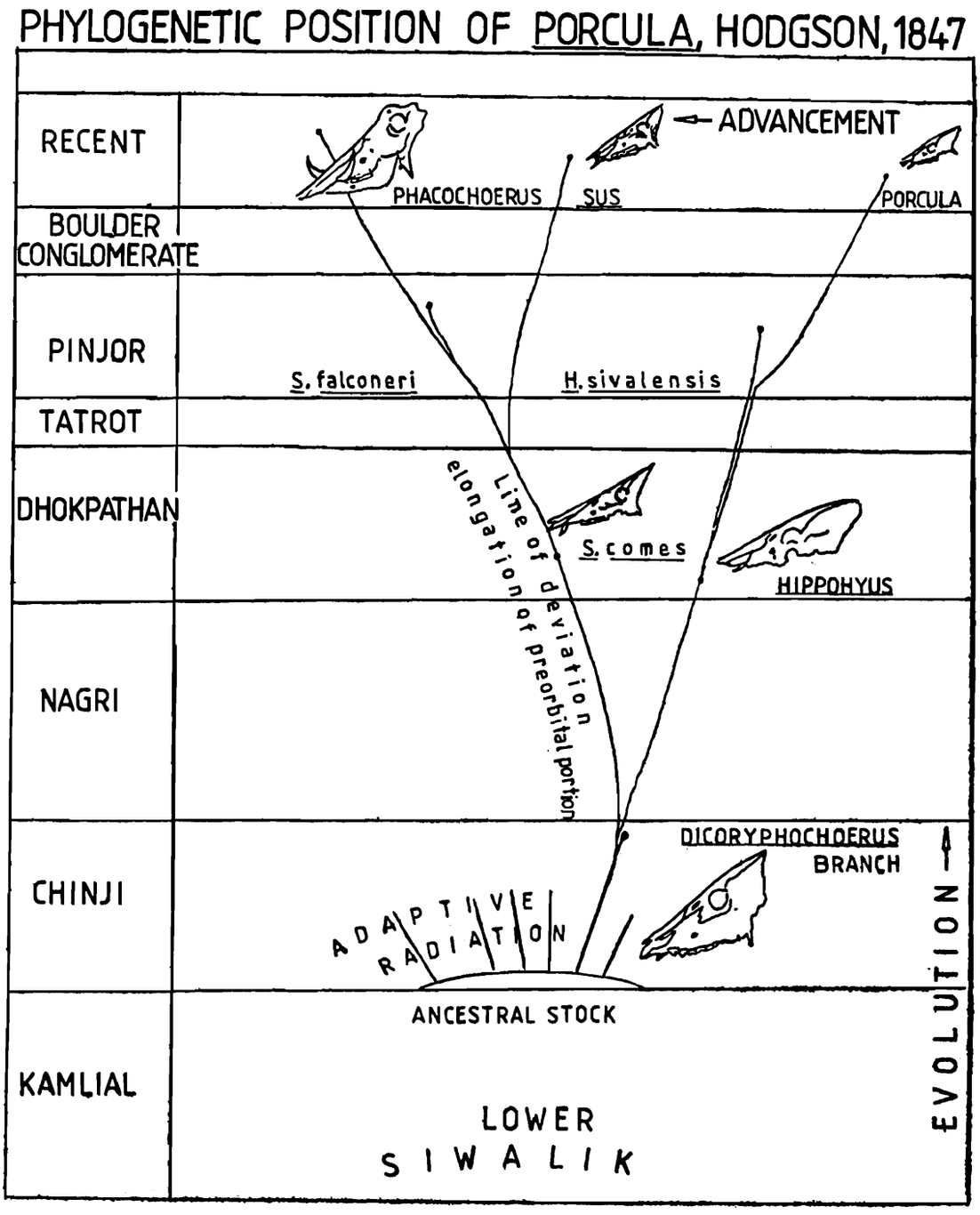


Fig. 7. The phylogenetic position of *Porcula* Hodgson.

confined within its peculiar ecological niche for the last thousands of years, without making any contribution toward domestication. If it was congeneric with *Sus,* it should have had many features in common with the type species *Sus scrofa* Linnaeus. On the contrary, the short preorbital portion and the more centrally placed orbit rather suggest its phylogenetic affinity with the extinct *Hyppohyus* stock (fig. 7).

Conclusion : Considering all the salient features and characters (morphology and ethology) in the Pigmy Hog, it becomes apparent that this species is quite distinct from *Sus* proper by possessing a number of characters with high taxonomic weights. The Pigmy Hog retains a more primitive character than the advanced *Sus* or *Phacochoerus* groups. The differences are greater than among the wolf, the jackal, the coyote, the dog as species of *Canis*, or the zebra, the horse, the onager, the ass as species of *Equus.* Actually the differences between *Sus* and *Porcula* (fam. Suidae) are as profound as between Loxodonta and Elephas (fam. Elephantidae) or between *Capra* and *Ovis* (fam. Bovidae). Naturally *Porcula* Hodgson, 1847 should be retained with immediate attention as a valid genus for the Pigmy Hog, especially in the period of its declining population and at the moment when it is listed in the Red Data Book of IUCN. The genus is appeared to have a lineage to the extinct Genus *Hippohyus.* In the later the facial portion was rather short and the orbit was almost centrally placed (Colbert, 1935).

SUMMARY

The Pigmy Hog (ARTIODACTYLA : SUIFORMES : SUIDAE) is generically different from *Sus* Linnaeus (1758) and deserves a separate generic status, as originally proposed by Hodgson (1847). But that it had close affinity with the New World Peccary (SUIFORMES : TYASSUIDAE), as he claimed, is wrong. Subsequent workers' efforts were mainly concentrated to nullify such a view of Hodgson and to

establish evidences of its close similarity with the Old World Pig, *Sus scrofa*. The present paper highlights the special features in Pigmy Hog and its craniology.

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Abbreviations used in the articles :

I-incisor ; C-canine ; P-premolar ; M. Molar ; min-minimum ; max-maximum, W-width ; B-breadth ; H-height ; mm-millimeter : cm-centimeter ; C-centigrade.

N. B. The measurements in the tables are taken to be as mean readings.

Present Inferences : Points in favour (*List No. 1*)

The salient features in the skull and mandibles as observed in the Pigmy Hog. (Plates I-III & Figs 1-5) :—

Facial bones : Parietal is longer *cf.* It is proportionately shorter in *Sus* spp.

Frontal is shorter, than those of *Sus* spp. and nearly equal to that of the parietal.

The parieto-forntal ratios are 1 : 1.50 in the *Porcula* and 1 : 2.20 in *Sus.*

Nasal is shorter, never exceeds the line of the infra-orbital foramen. *cf.* It is always longer and exceeds the line of infra-orbital foramen in *Sus* spp. The cranio-nasal ratios are 1 : 3.1 in *Porcula* and 1 : 1.85 in *Sus.*

Maxillary bones : Premaxilla is more rectangular in Pigmy Hog. *cf.* it tends to be narrow and prismatic in *Sus* spp. due to posteriorly extended angular cone. The cross diagonal ratios are 1 : 2.5 in *Porcula* and 1 : 3.5 in *Sus.*

Infraorbital foramen is comparatively smaller and more towards the orbit in the Pigmy Hog *cf,* It is either in the middle of the maxilla or towards the premaxilla in *Sus.*

Orbit is smaller in Pigmy Hog and it is almost in the middle of the lateral axis of the skull, *cf.* It is more towards the crania for the extended facial bones in *Sus* spp. and at least 1.60 times furthest from that of the orbital position in *Porcula.*

Mandibles : The horizontal ramus is shorter in comparison to that of the *Sus* sp. No deviation in height is marked near M^2 or M^3 as observed in adult *Sus* spp.

Dentition : The dental formula and number of teeth in Pigmy Hog are of coursc similar to those of *Sus* i.e. $I\frac{3}{3}C\frac{1}{1}P\frac{4}{4}M\frac{3}{3}$ =44. But the dentition differs strikingly in the following points.

The position of the cheek teeth is a little interior of the buccal in the pigmy Hog, because the facial and the mandibular bones are comparatively less elongared. The combined lenth of M^1 and M^2 exceeds greately the lenth of adjacent M^3 both in upper and lower series in the Pigmy Hog (Table No. 5). These are always shorter (less) than the M^3 in *Sus* proper. Ofcourse the M^3 in the Andaman Pig is nearly equal or some what shorter than the combined lenth of M^1 and M^2 taken together. The interalveolar space between the lower canine and first premolar is much reduced in the Pigmy Hog.

Previous *Inferences* :—
(*List No. 2.*)

OBSERVER	PIGMY HOG			REMARKS
	Snout to vent	Height	Weight Tail	
Hodgson (1847 & 1848)	18″to 20″ (male) 26″	8″-10″	7-10, nearly 12lb.	Shorter jaws ; eyes placed midway between the snout and ear ; tail very short, nude but distinct (1847). Face greatly contracted ; three pairs of teats ; no mane ; the molar teeth are carried much more back ward (1848).

OBSERVER	PIGMY HOG			REMARKS
	Length		*Tail*	
Garson (1883)	58 cm		3.2 cm	Tail is hairless ; three pairs of mammae ; ear nearly ovoid in form ; adult dentition $I\frac{3}{3}$ $C\frac{1}{1}$ $P\frac{4}{4}$ $M\frac{3}{3}=44$; the right central lobe of liver is comparatively larger than left, while in the pig, they are of almost equal size ; absence of the tranverse fold between the gastric cavity.
	Length		*Height*	
Mallinson (1971)	(male) 66-71 cm (female) 55.2-62.2 cm		22.9-30.5 cm (male) 20.3-21.6 cm (female)	Breeding once in a year ; gestation 110-120 days ; litter size 3-4 ; births between April-May, exception May June (in London Zoo) ; conception in Dec-Jan ; temp :— 7.C°-11.C° (min) & 30.C°-37.C° (max).
	Height	*Tail*	*Weight*	
Oliver (1980)	11″	±3 cm	8kg	The close association of the two species-Hispid Hare and Pigmy Hog ; similar distribution and habitat preference ; present and past distribution ; the fore quarters proportionately less massive than the hind quarters ; tail sparsely haired ; never domesticated.

Sum up Inferences : *Points in favour* (*list no. 3*) :—

The distinctive characters in Pigy Hog in comparison to those of *Sus* spp. are tabulated below :—

Pigmy Hog (*Procula salvania*)

SKULL : Parietal comparatively long ;
Nasal short, within the line of Infraorbital foramen ;
Orbit smaller and in the middle of the skull ;
Premaxilla broad and almost rectangular.

MANDIBLE : Ramus shorter, just double the vertical height.

DENTITION : Third molar of medium size, less than the combined length of M^1 and M^2 ; situa tion of molars beyond the orbital plane.

TAIL : Very short, not more than 3cm. and almost naked.

EAR : Medium size, roundish, scantily haired.

MAMMAE : Always three pairs.

NUCHAL CREST : Incipient.

MANE : Absent.

PELVIC PORTION : Superiorly developed.

BREEDING : Once in a year, mainly in April /May, with a litter size of 3 to 4.

HABITAT : Dweller of the tropical hill forest with an average altitude of 600-700 meters, where tall grasses are the main cover.

Common Boar (*Sus scrofa cristatus*)

SKULL : Parieal very short ;
Nasal quite long, exceeds the line of infraorbital foramen ;
Orbit large and more posteriorly situated ;
Premaxilla narrow and tends to be triangular.

MANDIBLE : Ramus longer, more than twic the vertical height.

DENTITION : Third molar robust, longer than M^1 and M^2 taken together ; situated within orbital plane.

TAIL : Quite long, more than 15cm. with a tassel, reaches the calcaneum.

EAR : Bigger, pointed, coarsely haired.

MAMMAE : Five to six pairs.

NUCHAL CREST : Prominent.

MANE : Present.

PELVIC PORTION : Inferiorly built.

BREEDING : Twice in a year with a litter size of 6 to 8, any time in the year.

HABITAT : Dweller of riverine plains mainly, where hot and humid environment prevails.

TABLE 1 : Measurement of the skull bones and mandibles (in mm) of *Tayassu tajacu* (Linnaeus).

SKULL	LENGTH	WIDTH	REMARKS
Nasal	Medial 94	Maximum 40	The nasal is moderately short.
Frontal	Medial 71	Anterior 37 Posterior 77	
Parietal	Medial 45 Lateral 83	Anterior 78 Minimum 6 Posterior 38	The parietal is very narrow and constricted behind (plate II, fig. k).
Occipital	62.50-80.00	37.50-39.00	
Maxilla	Maximum 87	65	
Premaxilla	Maximum 60	14	
Infraorbital foramen	From orbit 38 From apex 61		Indicates the distance.

Overall length of the skull=235 mm

			REMARK
MANDIBLE :	Length of the horizontal ramus ...	155	
	Vertical height	75	
	Gap between the lower canine and 1P (diastema)	28	The diastema is quite long like the ruminants

The dentition in *Porcula* is similar to those of *Sus*, *Potamochoerus* and *Hylochoerus*, so far as the dental formula is concerned : $1\frac{3}{3}C\frac{1}{1}P\frac{4}{4}M\frac{3}{3}=44$. This primitive formula and dentition, except the mole (Talpidae, Insectivora) is not seen in any other recent mammals. Whereas the dentition in

peccaries (Dicotylidae) is different and possesses a reduced dental formula : $I\frac{2}{3}C\frac{1}{1}P\frac{3}{3}M\frac{3}{3}=38$.

TABLE 2 : Measurement of different teeth in *Tyassu tajacu* (in mm).

Teeth	Upper			Teeth	Lower			Remarks
	L	B	H		L	B	H	The upper jaw lacks one incisor.
1 I	9.2 ;	7.0 ;	13.0 ;	1 I				
2 I	8.0 ;	5.1 ;	13.0 ;	2 I				
				3 I				Both the upper & lower canines are straight like the carnivores.
C	17.0 ;	10.0 ;	32.0 ;	C	12.7 ;	11.0 ;	43.0 ;	
1 P	8.5 ;	7.5 ;	7.4 ;	1 P	7.8 ;	4.5 ;	8.8 ;	
2 P	10.0 ;	9.8 ;	9.0 ;	2 P	9.0 ;	6.0 ;	8.8 ;	
3 P	10.5 ;	10.0 ;	8.5 ;	3 P	11.0 ;	6.0 ;	9.0 ;	All the molars are almost equal in size (plate III, fig. q.).
1 M	11.0 ;	10.7 ;	7.8 ;	1 M	11.9 ;	9.2 ;	7.5 ;	
2 M	12.0 ;	11.5 ;	9.0 ;	2 M	13.4 ;	10.0 ;	7.5 ;	
3 M	12.5 ;	11.0 ;	8.0 ;	3 M	14.5 ;	10.3 ;	9.0 ;	

The inter alveolar space between C & P, in upper and lower jaws in Peccary is very high in comparison to *Sus* and *Porcula.*

	Tayassu tajacu	*Sus scrnfa*	*Porcula salvanius*
C—P upper	22.0mm	7.0mm	.50mm
C—P lower	29.0mm	10.0mm	3. 0mm

On the contrary, the space between P^1 & P^2 is very negligible or nil in Peccary, whereas in *Sus* and *Porcula*, this is reasonably high in the lower jaws.

	Tayassu tajacu	*Sus scrofa*	*Porcula salvanius*
1P—2P lower	.80mm	14.5mm	3.8mm

Table 3 : Measurement of the skull and individual bones in them (in mm) as observed in the Pigmy Hog, Indian Boar and Andaman Pig.

SKULL :—

Item	Topography	*Sus* (*Porcula*) *salvanius*	*Sus andamanensis*	*Sus scrofa*	Remarks
Nasal	Length	58	112	177	The nasal is short in Pigmy Hog (plate II, fig. 1)
	Width	28	26	52	
Frontal	Length	60	90	108	
	Width	40	65	91	
Parietal	Length	40	35	45	The parietal is longer in Pigmy Hog.
	Width	20	29	35	
Occipital	Length	39	85	117	
	Width	34	58	69	
Maxilla	Length	58	97	140	
	Width	41	50	70	
Premaxilla	Length (diagonal)	45	97	140	The diagonal length is shorter in Pigmy Hog
	Width	16	27	37	
Infraorbital foramen	From orbit	22	60	80	
	From apex of maxilla	34	52	74	
Overall length of skull		160±5	255±10	375±15	The skull is nearly three times longer than the nasal in Pigmy Hog.

MANIBDLE (measurement in mm) :—

Item	Topography	*Sus* (*Porcula*) *salvanius*	*Sus andamanensis*	*Sus scrofa*	Remarks
Ramus	Horizontal Length	125	170	250	The ramus is shorter in Pigmy Hog
	Vertical Height	62	75	117	
Body	Length	37	50	75	
	Width	29	35	58	
Condyle	Breadth	14	19	27	

Table 4 : Measurement of different teeth in the maxilla and mandible as observed in the Pigmy Hog, Indian Boar and Andaman Pig (in mm).

TEETH		*Sus (Porcula) salvanius*			*Sus andamanensis*			*Sus scrofa*			Remarks
		W.	B.	H.	W.	B.	H.	W.	B.	H.	
1I	Upper	12	4	10	13	7	15	15	7	17	
	Lower	4	5	11	6	8	22	8	9	27	
2I	Upper	7	3	5	12	6		15	5	11	
	Lower	5	4	14	6	8	23	10	10	26	
3I	Upper	5	3	5	7	3	8	8	4	10	
	Lower	3	2.5	6.5	.	.		7	5	16	
C	Upper	9	8	20	9	8	12	29	24	70	
	Lower	6	7	30	7	9	20	16	17	65	
1P	Upper	6	3	4	·	·	·	8	4	7	
	Lower	5	2.5	4	8	6	8	7	3	8	
2P	Upper	8	4	6	11	7	12	15	7	12	
	Lower	5	3	4.5	10	6.5	9	13	5	10	
3P	Upper	8	6	7	12	9	10	16	11	11.5	
	Lower	7.5	4	7	11	7	9	15	8	13	
4P	Upper	7	8	6.5	11.5	11	10	15	16	11	
	Lower	8.55	5	7	11.5	8	10	17	10	13	
1M	Upper	9	9	7	14	12	11	17	15	9	
	Lower	9.5	6·5	4	13	10	10	17	12	8·5	
2M	Upper	14	10.5	8	18	14	12	24	19	11	
	Lower	13	8.5	7	17	12	8	24.5	16	9	
3M	Upper	15	11	9	22.5	15	14	42	21	16	
	Lower	15	9	8.5	23.5	18	9	46	17.5	14	

Table 5 : Linear length of combination tooth (M^1+M^2) in comparison with that of M^3 in the natural species.

	Sus (Porcula) salvanius	*Sus andamanensis*	*Sus scrofa*
Upper M^1+M^2 *cf.* 3M	22.70 *cf.* 15.00 i.e.〉	32.00 *cf.* 22.50 i.e,〉	40.00 *cf.* 42.00 i.e.〈
Lower M^1+M^2 *cf.* 3M	22.40 *cf.* 15.00 i.e.〉	29.00 *cf.* 24.00 i.e.〉	30.20 *cf.* 46.00 i.e.〈

In *Tayassu tajacu* the molars are almost equal in size (see table no. 2).

In *Sus scrofa cristatus* M^3 is always robust and greater than M^1+M^2.