

Saugor District, that were originally identified as *simcoxi*, appear on closer examination to agree with *ruficaudatus*. Wroughton & Ryley (1913, p. 57) also suggested that specimens from Mundra (Saugor District), Damoh and Narsingarh (Damoh District) perhaps go better with *ruficaudatus*.

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3. A NOTE ON *CAPRA HIRCUS BLYTHI* HUME, 1875

Whilst writing this note as a sequel to an earlier one on *Ovis orientalis*, I feel it desirable to explain my purpose. My knowledge of this species is still meagre and I hope to increase it by further field trips. But by summarising information gleaned up-to-date, I hope to stimulate similar observations from other amateur naturalists like myself, as well as to reveal observations about this wild goat which are either at variance with, or hitherto not recorded in the published accounts, which I have been able to see.

Most modern Zoological works recognise five species of true goats or caprinae (Walker 1964). West Pakistan is fortunate in being

within the range of three of these species and all are most impressive and handsome beasts. They include the Siberian race of the Ibex, several races of the Markhor, and the Persian Wild Goat or Sind Ibex, about which this note is written.

Capra hircus is considered by some authorities to be the ancestor of all domestic goats, and its range extends from the Greek Islands of the Mediterranean, through the Caucasus, Asia Minor, and Iran to the south-western portion of West Pakistan (Ellerman & Morrison-Scott 1951). The race *C. h. blythi* which inhabits parts of southern Baluchistan and the Sind border, is apparently distinguished mainly by its smaller size (Prater 1965). A specimen of *C. h. aegagrus*, which I have seen from the Island of Crete, appears identical with the Sind Ibex, except for having a much thicker, denser, coat. Specimens from northern Kalat in Baluchistan also have a very woolly coat. At one time (Lydeker's GOATS AND SHEEP OF THE WORLD) it was believed that the two races could be distinguished by the number and prominence of the knobs or irregularities which occur on the front keel of the horns. Those of *C. h. aegagrus* being considered more prominent than *C. h. blythi*. However, such an authority as Col. C. H. Stockley could not distinguish any marked difference between specimens from Taurus Range of southern Turkey and from the Kirthar Hills—places at opposite poles of its range (Stockley 1928). I feel, therefore, that it still remains for future workers to clarify as to what distinguishes these two races of *C. hircus* and even to determine whether *C. h. blythi* should be separated as a valid race.

Appearance. The magnificent appearance of old bucks with their silver-grey livery and dark spinal stripe set off by sweeping scimitar-shaped horns, has been well described by other writers. Though it would be misleading to imply that the three species *C. hircus*, *C. falconeri* and *C. ibex* are not easily recognisable in the field by their different coloration, yet there are a number of striking affinities in their external appearance. Except for the fact that *C. hircus* has short coarse hair, with no under wool at all seasons it shares with *C. falconeri* the same crest of longer coarser hairs extending in a ridge down the centre of the hind neck and between the shoulders. These two species also have white hair on the belly and inside their legs, whilst *C. ibex* has brownish yellow hair on its belly. However, *C. hircus* shares with *C. ibex* the same characteristic pattern of dark hair down the front of the forelegs, though only the former has white wrist patches. Both have a line of dark hair running down the spine and darker hair in the region of the lower chest though this is very

distinct and sharply defined in *C. hircus* and much less so in *C. ibex* due to the woolly nature of its pelage.

In *C. hircus* the dark line which extends down the spine, does not actually start from the nape as stated by Prater (loc. cit. page 255). The hind neck is pure greyish white and the dark stripe starts from the shoulder. It is dark brown and only the tail and the rather scant beard are truly black. The dark brown spinal stripe extends on either side in a diagonal line in front of the shoulders, merging into a generally dark area on the chest. Even in young bucks, the dark brown of the chest is conspicuous and the plate in, Prater (loc. cit. Plate 60) is misleading in this respect. With the exception of the black beard, the hair of the throat and between the jaws is white and there is a noticeable whitish fawn streak extending from above the eye down either side of the nose which is a characteristic pattern in the faces of the females and immature animals as well as the older males. Another noticeable feature of both young and old bucks, not clearly shown in Prater's illustration, is the dark band of hair along the front edge of the upper hind legs, which extends in a continuous line from the hock through the stifle (knee) and along the flank of the lower belly. This dark line which separates the white hair of the belly from the greyish brown of the flanks usually becomes indistinct in the middle of the body but becomes more apparent again in the pectoral region. Younger males and does have similar darker brown faces but the rest of their body is a brownish yellow which becomes paler in summer, bleaching almost to a buff colour. This is in contrast to the reddish tones of the Urial which live in the same area or the red colour of the Suleiman Markhor whose range meets that of *C. hircus*. So this paler sandy coloration cannot be attributed to a protective adaptation to their environment. It is only the older bucks—probably from their fourth year onwards, that show increasing amounts of white hairs mixed with the brown. These white hairs are more dense on the nape and along the top of the back, gradually becoming more sparse on the lower shoulder and almost absent from the lower hind quarters even in aged bucks.

From captive or freshly killed specimens which I have seen, *C. hircus* has a golden brown or tawny iris as does *C. falconeri* whilst *C. ibex* has a slightly darker brown iris. The Urial has a greyish yellow iris. The pupil contracts to a horizontal slot characteristic of both sheep and goats. Its tongue is bluish black and the roof of its upper palate is ridged. The incisors in the lower jaws are surprisingly small and close packed so that the muzzle is quite narrow. The female of *C. hircus* has no trace of a beard whereas

the female of both *C. falconeri* and *C. ibex* have quite substantial beards. There is no trace of any scent gland below the eye and out of four males which I have been able to examine, I could not find any pedal glands (external orifice) in the pastern of the front or hind feet.

Though much bigger than any domestic goat from this region, *C. hircus* is still a relatively slim bodied animal with a slender neck as compared with *C. ibex*. In contrast, therefore, its horns look particularly massive and an old buck's horns, sweep right back till the tips are over its pelvis. Even the females may carry horns up to 14" in length. They probably live normally up to 10 or 12 years and a mature animal of say 8 years of age may carry horns 41" to 46" length. Anything over this is exceptional and the actual length as well as the circumference of the horn depends considerably upon whether the animal was born one of twins or even triplets, or was a singleton. I have measured two males, one with horns of 40 $\frac{3}{4}$ " and the other of 36", both of which bore seven clear annular rings, and therefore, might be presumed to be of similar age.

The very young kids are a silky-grey colour in sharp contrast to the yellowish brown colour of their dams. Their ears also appear comparatively longer. *C. hircus* like all the caprinae, frequently elevates its tail and this is a characteristic carriage which is never observed in wild sheep; a point worth mentioning since the differences between these two genera are so slight.

Distribution. At the present time in Pakistan, *C. h. blythi* is confined to the remoter hill ranges of Las Bela, south-eastern Kalat and the coastal hills of Mekran. Its easternmost limit is the Kirthar Range on the borders of Sind. It still occurs on the peninsula of Ormara and other areas right on the sea coast. Its stronghold is perhaps in the hills which border the Hingol River in Mekran and there is a reserve at Hinglaj. It also occurs in the Khudi Range and the Pub Hills of Las Bela and in the Shah Nurani Hills on the Kalat border. Most of these places are very inaccessible but I would guess that its status in these areas is still reasonably secure, since these hill-ranges offer refuge in the shape of precipitous cliffs, where even domestic goats, let alone hunters, cannot penetrate. However, it is nowhere numerous and it is much persecuted for its meat except within the area of the Hinglaj and Kirthar reserves. The latter extends for about 12 miles north and south and is roughly 2 to 3 miles in width and I estimate that about 800 to 1000 head still survive in the Kirthar. According to the Chief Game Warden, about 20 to 25

bucks are shot there annually by Licence holders. No doubt some poaching also occurs and leopards are always active in the area.

Habits. It would be a fair generalisation to state that in West Pakistan the Markhor inhabits mountain areas from 7000 feet and upwards whilst the Himalayan Ibex will rarely be found below 10,000 feet. But *C. hircus* is not restricted to higher elevations by any means and is tolerant of exceedingly high temperatures as well as very arid conditions. However, it must have precipitous rock faces for refuge, and shelter which provides shade from the direct rays of the sun; not an easy condition to fulfil in this treeless region. Fortunately both shade and refuge is generally provided in these lower Baluchistan ranges which consist of limestone rock that contain many wind fretted hollows, ledges and caves. The Kirthar Range with which I am familiar, for example, is only 3200 feet at its highest point, but it consists of a series of escarpments rising from the surrounding plains by sheer cliff walls which bound both its east and west faces. Some of these cliffs quite literally ascend for almost 2000 feet in an unbroken vertical face. Yet it is in the narrow eroded gulleys and crevices of these cliffs that *C. hircus* finds its ultimate refuge. Many writers have commented on their extreme agility and it remains for future researchers to analyse with the help of high powered telescopic lenses and slow motion cine film, the means by which they often seem able to defy gravity. Were it not for the testimony of one's own eyes, I would often have found it difficult afterwards to believe that an animal could have traversed certain areas upon closer examination. Yet I have seen Ibex of all ages descending quite unhurriedly, completely vertical rock faces, and traversing diagonally, other rock faces which looked completely smooth and appeared to slope at an angle of over 80 degrees of arc. Conversely, they are capable of quite prodigious leaps and can carom off a vertical rock face to reach a ledge higher up, which in itself offers no more than a toe-hold.

In descending very steep rock they splay out their forefeet which are rigidly extended and not bent and at the same time they place the whole of their metatarsus on the ground. I have noticed that their fourth and fifth rudimentary phalanges are equipped with very large rounded and flexible horns or nails which are also roughened and undoubtedly assist in breaking their downward descent. I have also noticed that when crossing a steep rock face they can lean their body inwards and cross both fore and hind legs as they move forward and still keep the whole of the foot surface on the rock. It is also interesting to note that the lower part of their wrists (forelegs) and

their sternum bear thick roughened callosities which no doubt give protection on the hard sharp rocks on which they constantly have to lie when resting. Except on camels I have not noticed similar callosities. The sole of their hooves also seem unique, in that they are slightly soft and rubbery; quite unlike the hard horn of domestic goats or even wild sheep. I have not examined this feature properly as yet, but presume the provision gives the feet greater shock absorbing qualities as well as friction on hard smooth surfaces. The rut or breeding season coincides with the onset of the monsoon which, in southern Baluchistan starts in late July and sometimes persists till mid September. The older bucks fight amongst themselves during this season and collect harems of does which keep together and feed constantly in the vicinity of the buck. The young are mostly born in the latter part of January and twins are quite common in a year when monsoon rains have been adequate. It would appear that the gestation period is 5 months or possibly $5\frac{1}{2}$ months. Certainly it seems shorter than that of the Urial (*Ovis orientalis*). In contrast to what Prater has written (loc. cit. page 256), I have seen very young kids, only from mid January to early February, though there must be exceptions since Blanford saw a very young one caught on March 11th (Sterndale 1929). In the first two weeks after birth the kid(s) mostly remains concealed in some rock crevice where the dam periodically comes to suckle it (them), after feeding only in the immediate vicinity. At this time the does with young do not venture out on to the more open escarpments where grazing is much better. Provided one is a good climber, the new born kids are not too difficult to capture at this stage as are the newly born young of Markhor and Ibex. However, the Sind Ibex invariably dies soon after capture, possibly from shock and I have never seen any in captivity in Pakistan whereas many Ibex and Markhor have been successfully reared when captured in this way. As mentioned earlier, breeding depends largely upon the extent of the monsoon and triplets may be observed after a year of plentiful rain whereas in a drought year, hardly any females conceive at all. This year for example, I have seen only single young in the Kirthar and no twins and it is noteworthy that the monsoon rains were considered less than usual.

C. hircus appears to be entirely independent of water in the winter and early spring months and to be able to obtain enough moisture from dew on the herbage from late July until early October. However, it has been observed to drink when water is freely available despite what other authorities have written (Stockley 1936: 125) and in the months of April, May and June it will go to great lengths to assuage

its thirst. I have been told of an actual instance where a Baluch shepherd surprised 5 Sind Ibex at the bottom of a 14 feet vertical well. Three animals leapt out despite his efforts to surprise and kill the lot. The others, according to the shepherd, got their hooves wet and so were unable to ascend the walls but slipped backwards and he was able to kill them.

It has already been noted by other writers that the old males tend to separate by themselves or to congregate into small herds after the rut is over. I have seen such herds often comprising eight or nine old bucks, their horns looking almost like a forest of trees in the dawning rays of the sun. But it is not uncommon to see mixed herds even in late January with old and young bucks as well as ewes and yearlings feeding together. Such congregations probably depend on the amount of disturbances which the animals suffer and also the extent of their feeding range. Markhor by comparison are nearly always more dispersed by the very nature of the ground on which they live and feed. Sind Ibex congregate in bands of from 4 or 5 individuals up to 15 or 20. Their food consists of grasses, leaves of various thorny bushes, as well as various xerophytic herbs and shrubs which they masticate, in typical ruminant fashion, during the long hours of day light when they are lying up and resting. They normally feed in the very early hours of morning and late evening at least in the winter months but I believe that in the height of summer they feed throughout most of the night relying upon their sentries to protect those who are feeding from any marauding leopard. Their sense of sight and smell appears to be very acute.

Though they will rest on the crown of some commanding ridge in comparatively open country, the older bucks invariably retreat to the most inaccessible cliffs and actually sleep inside caves or within rock crevices, where they are so well concealed that even the near approach of man or four legged predators, will not cause them to budge though the younger bucks and females may all have fled in panic. In this respect they seem to have learned the greater safety which lies in concealment rather than flight, in the manner of the Goral, though even young and females of this latter species will allow very close approach when lying concealed.

They are normally not very vocal but I have heard young kids bleating when trying to catch up with their mothers and their cries sounded identical to that of domestic kids. When alarmed a member of the herd gives a warning snort which is very hard to describe verbally. But it is an explosive sound quite unlike the bird-

like chirrup of Himalayan Ibex or the sneeze of Markhor when alarmed.

ROBERTS COTTON ASSOCIATES LTD.,

KHANEWAL,

WEST PAKISTAN,

February 20, 1967.

T. J. ROBERTS

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4. REOCCURRENCE OF THE WHITEFRONTED SHEARWATER (*PROCELLARIA LEUCOMELAENA* TEMMINCK) IN INDO-CEYLONESE WATERS

While working upon a new checklist of Ceylon Birds, I have noticed that Dr. Dillon S. Ripley, in his excellent SYNOPSIS OF THE BIRDS OF INDIA AND PAKISTAN mentions only a single record of the occurrence of the Whitefronted Shearwater (*Procellaria leucomelaena* Temminck) in the Indian Ocean.—viz.. a bird obtained off Ceylon in 1884. It seems advisable, therefore, to place on record a more recent occurrence of the species in Indo-Ceylonese waters.

Early in 1957, when I returned to Ceylon from the Maldiv Islands, I met Mr. Grisenthwaite, who had already collected a number of interesting birds at sea off the western coasts of Ceylon. From him, I received a large Shearwater which proved to be *Procellaria leucomelaena* Temminck. I brought the specimen to England with me and donated it to the National Collection, at the South Kensington Museum where it now carries the number 957.16.98.

The data labels, written from information supplied by Mr. Grisenthwaite, show that this bird was taken, about dawn, on 6th December 1956, by Mr. G. N. Grisenthwaite aboard the Trawler 'Braconglen' when the ship was approximately 22 miles W. SW. of Muttum Light on the south Indian coast, or approximately 22 miles N.W. of Cape Comorin. The bird was a male in sub-adult plumage. The prevailing weather conditions, at the time of capture, were:



Roberts, T J. 1967. "A Note on Copra Hircus Blythi Hume, 1875." *The journal of the Bombay Natural History Society* 64, 358–365.

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