

or subspecific. However, the occurrence of this species in Sikkim extends its distribution far eastwards, which is recorded.

ZOOLOGICAL SURVEY OF INDIA,
8 LINDSAY STREET,
CALCUTTA-16,
July 4, 1969.

V. C. AGRAWAL
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5. A NOTE ON *CICONIA NIGRA* (LINNAEUS) IN WEST PAKISTAN

The Black Stork (*C. nigra*) like the only other truly Palaearctic stork (*C. ciconia*) which visits the sub-continent in winter is also very rare and usually the only sight one is vouchsafed nowadays is a distant view of one or at the most 2 or 3 birds on some inaccessible sand-spit in the Indus or one of its main tributaries. Over the past six or seven years my own records include only two January sightings of solitary individuals at Panjnad Headworks on the Indus, plus a pair on the Chenab River on March the 10th above Marala Headworks. D. A. Holmes during three years intensive observations in Sind from 1962-65 saw only three solitary birds ; one near Hyderabad and two near Sukkur on the Indus (Pers. Comm. 1969). Even Dr. Ticehurst, fifty years ago saw only 'a few individuals about the Indus and Karachi harbour' (Ticehurst 1923). It has therefore been an exciting discovery to find that Lal Soharan Reservoirs in the former Bahawalpur State attract considerable numbers of Black Storks and this locality is probably one of the main resting areas and concentration points for the species on its northward migration, as far as the whole sub-continent is concerned.

Lal Soharan on the border of the Cholistan Desert (approx. 29° 20'N. 72° 0'E.) has, by happy coincidence, been declared as a Wild Life Reserve by gazetted notification of the Government of Pakistan in November 1968. This has been a direct outcome of the two WWF missions led by Guy Mountfort to Pakistan in 1966 & 1967 to examine the status of the larger wild life species and to make recommendations for establishing National Parks and Wild Life Reserves (See WWF Projects No. 201 & 311—Second Report of the World Wildlife Fund 1965-67). The Reserve area comprising 85216 acres includes extensive undisturbed semi-desert

biotope with irregular sand-hills covered mainly by *Calligonum polygoides* (with its beautiful silvery twigs) and *Prosopis spicigera*. Interspersed between these high sand-hills are lower lying areas often covered with dispersed clumps of tall 'Sarkhan' grass (*Saccharum munja*) and denser breaks of the shorter *Saccharum spontaneum*. In its south-eastern corner the reserve includes an irrigated forest plantation and in the north-eastern corner there are extensive swampy areas with two open jheels created by summer storage of surplus irrigation water from the Indus, which has been regularly diverted to this area since the late 1930s. The two main bodies of water reach a depth of over 15 feet in summer and are dotted with tamarisk-covered islands. In winter the water is drawn off to supplement irrigation reserves but it is also replenished from time to time by the irrigation department and this fluctuating water level seems to create highly eutrophic conditions for birds as well as other forms of wild life. In late December it has been estimated that as many as 20,000 duck (including large numbers of mallard) rest in the area. Because of its remoteness from human settlements it naturally attracts shy species such as of the Ciconiidae.

I have only made regular visits to these reservoirs since 1966 and have not observed any storks in that vicinity in the autumn passage of Palaearctic birds. The first observation of Black Storks at Lal Soharan was of a pair on January 2nd 1968. They were circling overhead and later settled in some dense *Saccharum spontaneum* grass in the desert about $\frac{1}{4}$ mile from the open water, which suggested that they might be able to find day time refuge in such areas and to be more than just casual visitors. However, a visit one year later on January 3rd 1969 revealed no Black Storks in the vicinity. On January 31st 1969, just at daybreak (approx. 7 a.m.) scattered groups of Black Storks were observed flying into one of the main bodies of open water, each coming from the same direction in the desert where they had presumably been roosting during the night. They continued to arrive in small groups for about thirty minutes, settling in a flock on a sand bank in the middle of the water. Eighty-one individuals were counted but as it was impossible to count all the arriving groups or observe the whole area where they were feeding without disturbing the storks it is possible that there were even more than this number. There were three immature Black Storks clearly visible in this flock besides two Painted Storks. After questioning several herdsmen and fishermen in the vicinity it seemed evident that substantial numbers of Black Storks had been there during the previous week. Regrettably it was not possible to visit the area again in February 1968 or at the end of January 1969. It was therefore with some anxiety that I approached the main jheel on February 12th 1969 just at daybreak. Before reaching the vicinity, however, a flock of sixteen Black Storks in extended line flew overhead and within the next forty minutes

68 Black Storks and six Painted Storks flew over to land in a compact flock on the margin of the jheel. This time they came from two fairly widely separated directions in the desert, thirty-one from one roost and the remainder from the second area. No immature birds could be discerned in the flock and again by questioning local fishermen it appeared that the storks had been present 'for about two weeks'.

A few notes on their appearance would add to what I have been able to glean from the available literature (Ali & Ripley 1968 ; Baker 1922-30). The immature birds were identical in size to the adults but distinguished by dull black almost dark brown plumage in head, neck and wings, without any gloss. Their bills were yellowish horn coloured, legs greenish yellow and belly not pure white but greyish or sullied. In the adult the legs are a brighter coral red than those of its congener the White Stork whereas the bill is dark crimson with the tip horn coloured in a few individuals. The bright red naked skin around the eye extends to the upper cheeks and lores and the iris is dark brown. The plumage on the head and neck in certain lights showed an iridescent tinge almost as bright as the head of a drake mallard. When viewed in flight from underneath there is a distinctive white almost square patch extending beyond the axillaries and down the middle of each wing and adjacent to the body. This is not well illustrated in the drawing in the FIELD GUIDE TO THE BIRDS OF EUROPE (Peterson, Mountfort & Hollom 1966) whilst Smythies wrongly states that the whole of the wing appears black from below (Smythies 1953). Most of the birds observed fed in shallow water, probing with open bills and they were picking up fresh water snails which were extremely numerous in the drying out water weeds on the margin of the jheel. These snails comprised two species, the Banded Pond snail *Vivapara bengalensis*, and the rather soft shelled *Lymnaea acuminata*. It was not possible to ascertain if there was any discrimination in their feeding, between these two species. Due to the cold weather at this season, no frogs are evident at Lal Soharan in late January and early February. In 1968 in clear sunny weather, the storks ceased feeding at about 8.30 a.m. and flew back to the desert. Fishermen were becoming active at that time, however, and might have disturbed them. In 1969 in cloudy and dull weather the storks remained feeding until 9.40 a.m. when they began to leave in scattered parties. Again there was human activity in the vicinity which might have disturbed them. They did not appear to return to the jheel in the evening on either occasion unless they did so after darkness, so that in an interval of from $1\frac{1}{2}$ to $2\frac{1}{2}$ hours intensive feeding they apparently picked up all the food they needed, as the desert region where they were resting would seem to offer little in the way of suitable food beyond an occasional mole cricket (*Gryllotalpa* sp.) or Blue-Tailed Sand Lizard (*Acanthodactylus cantoris*) which appear to be common even in the driest areas.

Most individuals arrive in West Pakistan in the first half of October and depart again in early March. Whistler saw a flock of seven on the Sohan River (a very small stony stream) north of Rawalpindi on March 3rd which were obviously on northward passage (Whistler 1938). Ticehurst, however, noted an individual in Sind as late as April 5th (Ticehurst *op. cit.*).

It is hoped that as better protection measures are enforced at the new Reserve at Lal Soharan, that increasing use will be made of the area as a wintering ground by these strange and beautiful birds.

ROBERTS COTTON ASSOCIATES LTD.,
KHANEWAL, MULTAN DT.,
WEST PAKISTAN,
February 20, 1969.

T. J. ROBERTS

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6. ON THE OCCURRENCE OF *HALIAEETUS ALBICILLA* (LINNAEUS) IN WEST PAKISTAN

The Whitetailed Sea Eagle (*Haliaeetus albicilla*) in common with the larger raptors over most parts of the world, has suffered a decline in numbers during the 20th century, both as a result of human predation, and more recently no doubt as the result of the damaging effects on fertility resulting from widespread use of insecticides.

Though included in Volume 5 of the FAUNA OF BRITISH INDIA (Stuart Baker 1928) and listed therein as occurring as a winter visitor to the Punjab, North West Provinces and Sind, S. Dillon Ripley omits it from his SYNOPSIS (Ripley 1961). It is included, however, in Vol. 1 of the new HANDBOOK (Sálím Ali & S. D. Ripley 1968) as a rare casual winter visitor to West Pakistan. A number of observations over the past three winters therefore seem worth recording. In the winter of 1966-67 at Ghauspur Jheel in north-western Sind (Sukkur District on the right bank of the Indus) Roberts saw a party comprising one old bird (with very pale almost white head and neck) and four immatures. There was a vast concourse of water fowl at this time and many other species of raptors. In January 1967, on a second visit, only one immature bird was observed. The following winter on December 8th one immature bird was again observed but in two visits in October 1968 and February 1969



Roberts, T J. 1969. "A Note on Ciconia Nigra (Linnaeus) in West Pakistan." *The journal of the Bombay Natural History Society* 66, 616–619.

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