

THE SHADOW BIRD AND ITS NEST.

Many birds build nests of double compartments, but there is one bird at least which has three distinct chambers in the large nest it builds. This is the shadow bird (*Scopus umbretta*), an African species. In speaking of them, Layard says:

They are strange, weird birds, frequenting ponds, marshes, rivers, and lakes, flitting about with great activity in the dusk of the evening, and preying upon frogs, small fish, and similar fare. At times, when two or three are feeding in the same small pool, they execute a singular dance, skipping around one another, opening and closing their wings, and performing strange antics. They breed on trees and rocky ledges, forming a huge structure of sticks and clay. Some of these sticks are of considerable thickness. The nests are so solid they will bear the weight of a full grown man upon their dome top without collapsing. The entrance is a small hole, generally placed on the most inaccessible side. The pure white eggs are from three to five in number. On my late friend Jackson's farm, at Nels Poort, there is a singular rocky glen between two hills. In this spot a beautiful permanent spring, called Jackall's Fountain, takes its rise. Of course, in consequence, there are wild almonds and other trees; indeed, the place is a little oasis amid the barren mountains, and a favorite resort for hyenas, jackals, leopards, and other wild animals.

On the ledges of rocks in this secluded spot a colony of shadow birds have built for years. Some of the nests are quite inaccessible, while others can be reached with a little trouble. I counted six or eight within fifty yards, all exhibiting the same form and structure, and some of them containing at least a huge cart load of sticks. About some that I visited I found brass and bone buttons and bits of crockery, bleached bones, etc. Mr. Jackson told me if a black lost his tinder box on the farm, or his knife, or any other small portable personal property, or if such article were lost within several miles of the place, he made a point of examining these nests, and frequently with success; the occupants, like the brown birds of Australia, embellishing their dwellings with any glittering or conspicuously colored object they can pick up. In the karroo between Worcester and Robertson, I saw a nest placed on the ground on the side of a trifling rise. It was three yards in length by one and a half across, and had a small entrance hole at one end.

We learn from Jules Verreaux that these remarkable structures are built in three compartments, the partitions of which, like the outer wall, are carefully and, to use his expression, "artistically" worked together in twigs and clay, and are entered by a hole just large enough to admit the body of the bird.

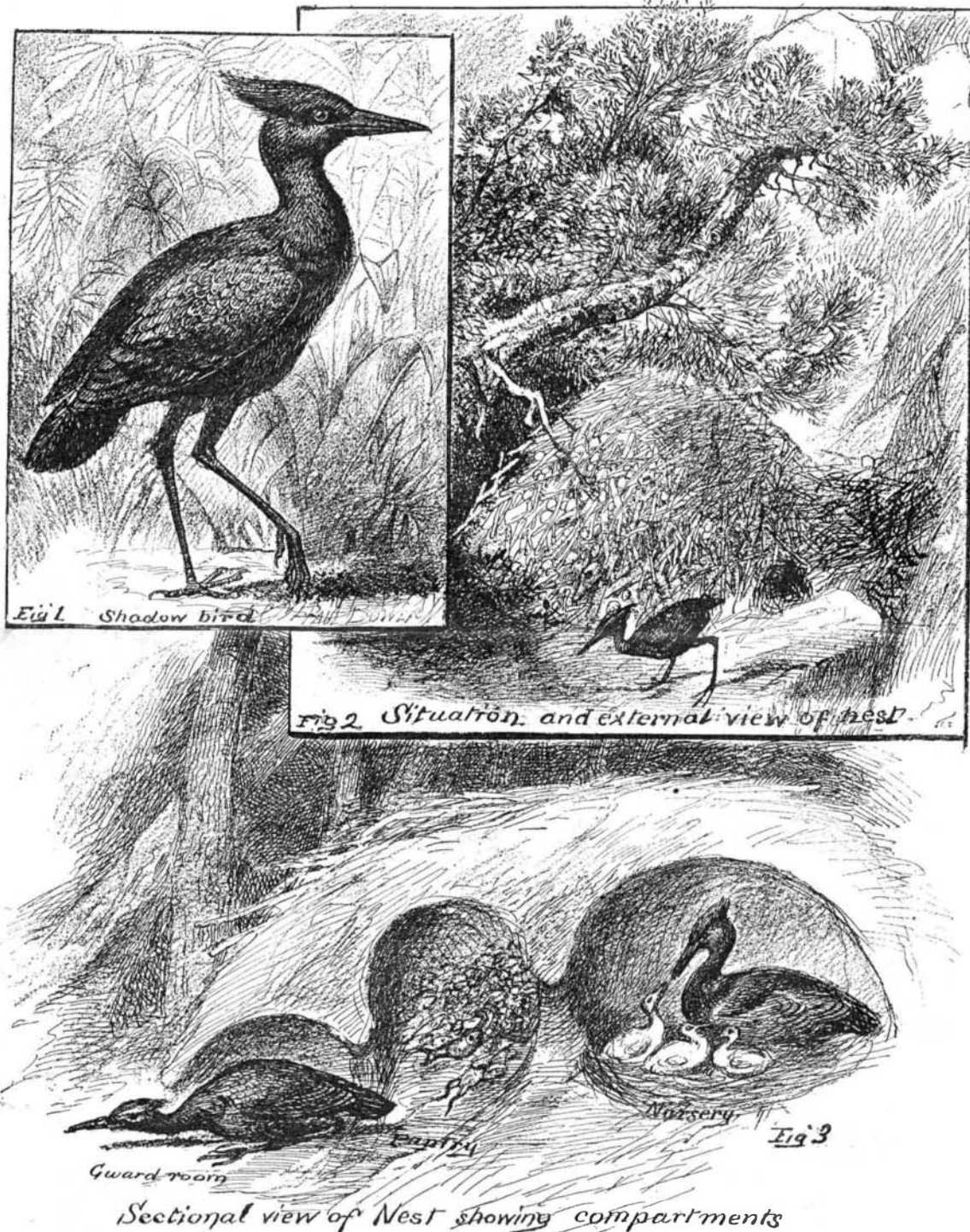
Of these apartments the hindmost is the largest, and is so raised as to remain dry should heavy rains penetrate the other parts of the nest. So excellently, however, is the entrance constructed that such accidents rarely occur, or, if water should break through, are readily and at once repaired. The large back chamber, or nursery, is covered with a soft, dry bed of various vegetable fibers for the reception of eggs, which are hatched by the united attentions of both parents. The second compartment serves as a pantry, and usually contains a goodly supply of provender; while the small outer compartment is employed as a guard room, from which a strict watch is kept in case of approaching danger. Verreaux says that the vigilant owner crouches flat on the ground as he reconnoiters, keeping his head protruded through the entrance hole.

The young, when first hatched, are almost naked, with but a slight development of grayish-brown down.

They grow slowly, and are tended with great affection by their parents, who feed them principally at early morning and in the evening.

The shadow bird is a wader, and represents a family possessing a compact, almost conical body, short, thick neck, comparatively large head, and broad, much rounded wing, in which the third feather is longer than the rest, and a medium sized, rounded tail. The high beak is longer than the head, straight, compressed at its sides, and bent at the tip. The feet are moderate, with toes but slightly connected. The head is decorated with a large crest, extending backward, and the thick, close plumage is of an almost uniform amber brown, with the under side of a slightly lighter tone. The quills are glossy, and somewhat darker than the back, and the tail feathers are relieved by a broad purplish-brown band at their extremities, and narrow, irregular lines of the same at their roots.

The eye is dark brown, the beak black, and the legs and feet either black or blackish-brown.



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The length is 20, and the breadth 40 inches. The wing measures 11½ inches, and the tail 6 inches. The female differs in no respect from her mate. This remarkable species inhabits all the central and southern portions of the African continent, including Madagascar. It is also met with in Southern Arabia, but is nowhere numerous.

Ventilation of Passenger Ships.

There are some annoyances which travelers continually experience with much discomfort, and with involuntary resignation assume are irremediable. Among these are the stifling, oily, painty, stale kitchen odor and sickening atmosphere of almost all the cabins of the steamers by which the shores of France, Holland, Belgium, and other countries are reached. It is always there, and is associated in the mind of every traveler as a gantlet to be run in the first part of a journey to the Continent, and a purgatory to be gone through as the final destroyer of the pleasures of a Continental holiday. Why the enormous numbers of long suffering English travelers have raised no voice on the subject is inexplicable, especially when the readiness

to complain of railway shortcomings is remembered. There is no reason why steamship berths should not be well ventilated. Those who are robust and happen to have a main-deck berth can, in moderate and fine weather, open the side lights, especially if they do not object to a blast that would do to serve a forge fire. Those in the lower berths cannot enjoy fresh air even by this means, and must leave the door open and ventilate with the thick atmosphere from the interior of the vessel, which is laden with the odors already mentioned. In a rough passage, and when every part of the vessel is crowded with passengers, the combination of smells is enough to kill off all those who are not accustomed to what any physiologist would pronounce a poisonous atmosphere. This need not be; and as there are so many almost equally convenient routes to the Continent, it is surprising that some of the steamboat companies have not bid for the best patronage by effectively ventilating their vessels. A steamship berth is, of all places, the one which, if the least attention is to be paid to sanitary welfare and comfort, should be most plentifully supplied with fresh air; but it is the least, and natural sickness is aggravated by this unnecessary foulness.

Every berth should be connected with a thoroughly effective ventilating system, or every group of not more than three berths should have a complete and separate ventilation. Mechanically, there would be no difficulty about this. One of the simplest methods would be to fix one or two powerful ventilating blowers in suitable places for passing a large quantity of fresh air down into the saloon and passages, the exit for the air being only through outwardly ventilating openings, such as flat grids, with plate, valve-like covers. Communicating with these should be ventilating trunks, to carry off bad air by an opening placed in every berth. The arrangement need not involve any element of danger in the worst weather, and the blowers might be worked by the main engines or by a separate engine. A more efficient method would perhaps be possible by means of ventilators at different parts of the vessel, worked by means of water under a small pressure, each ventilator to apply to one or a few berths. This system would lend itself to any arrangement of berths; and with the facility with which water at from sixty to seventy pounds per square inch, and in the small quantity required, could be supplied by a pump worked by the main engines, would make this arrangement comparatively inexpensive. Thick

lead or ordinary iron piping for the conveyance of the water costs but little, and is inexpensively laid. Ventilators of this kind were exhibited in the Health Exhibition, and one, which received a gold medal, acted either as a forcing or exhaust ventilator. There is presumably no difficulty in ventilating cabins which could not be easily overcome. The one preventive of proper ventilation on board passenger steamers is probably the cost of ventilating. The addition to the capital cost of a steamer for this purpose would, however, be small, and would soon be looked upon as insignificant, once steamship owners were taught to look on fresh air in berths or cabins as a necessity; and it is at least as much a necessity as fresh water, for on short voyages passengers can do without drinking water, where there are always plenty of aerated waters and other substitutes. Even in cold weather, passengers will run the risks of passing the night on deck rather than breathe through the night the stuffy atmosphere of cabins for which they have paid. Surely, it is time that some steps were taken in this matter, not merely for the comfort of the passengers, but as a most necessary sanitary reform.—*The Engineer*.