

Nesting of the White Stork (*Ciconia ciconia* [L.]) in South Africa

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Introduction

The White Stork has a wide distribution in southern Africa during the southern summer (E. SCHÜZ, 1960. Die Verteilung des Weißstorchs im südafrikanischen Ruheziel, Vogelwarte, 20 [3]: 205—222). Very few records of its nesting there have come to light. The first definite record of the species breeding south of the equator is ROBERTS record of a nest containing three young birds in a high dead tree on the farm Welbedacht between Calitzdorp and Oudtshoorn on 18 November 1940 (A. ROBERTS, 1941. Notes on some birds of the Cape Province, Ostrich, 11 [2]: 124). According to the farmer a pair of storks had nested there for at least seven years. I believe the nesting site eventually was destroyed because the tree fell down.

No new records of White Storks breeding were recorded until 29 November 1961, when a nest of *Ciconia ciconia* was located in the Bredasdorp district, the most southern tip of the continent (E. MARTIN, J. MARTIN & J. ROBINSON, Ostrich, 33 [1]: 26, 27; E. SCHÜZ, 1963, Vogelwarte, 22: 38). This nest was in a low Rooikrans tree (*Acacia cyclops* Cunn.) a species originally introduced from Australia and now widely spread. When found the nest contained three well feathered young birds. In the same tree were a number of Cape Weaver (*Ploceus capensis* [L.]) nests. The three nestlings were ringed on 3 December 1961 and in March 1962 one of these birds was recovered near the northern Zambia-Tanganyika border (G. R. MCLACHLAN, 1963, Ostrich, 34 [1]: 48; Vogelwarte 1963, 22: 38).

Records of nesting in 1962, 1963 and 1964

1962: On 2 September 1962 the same nest as in 1961 appeared to be occupied again as at 16.30 a stork was seen on it arranging objects in or on the nest. The bird eventually sat down in the nest. On 3 September the nest was closely inspected. The stork was on the nest but flew off when the nest was approached. Immediately some Cape Ravens (*Corvultur albicollis* [Latham]) alighted on the nest tree and one actually flew on to the nest. We expected to see this bird fly off with a stork's egg in its bill, but to our great relief this did not happen. The nest contained a soft, relatively fresh lining of grass and it seemed ready for eggs. Both storks were seen in the near vicinity. Several weeks later C. J. UYS and J. G. R. MACLEOD found five eggs in the nest and a stork was incubating. These eggs never hatched as they eventually disappeared. As a result the birds left the nesting site. Mr. J. G. GILLIOME from the farm Prinskraal reported another nest in which three chicks were reared. This nest will be referred to as Prinskraal I nest. It was in a melkbos tree *Calvaria inermis* (L.) Dubard (*Sideroxylon inerme* L.) a bushy tree common in coastal areas (fig. 2, 3).

1963: In 1963, Mr. PATRICK SWART also of Prinskraal (34.38 N 20.07 E),* noticed that in august and september a pair of storks regularly frequented a nest which was built in a tall *Eucalyptus* tree (fig. 4), less than one mile from the 1961 and 1962 nest in the Rooikrans tree (fig. 1).

This nest in a tall *Eucalyptus* tree (fig. 4, 5) was 25 feet high in a fork where 3 fairly thick branches joined the smooth and bare trunk. This nest will be referred to as Prinskraal II nest. The nest site was visited by C. J. UYS & J. MARTIN in October and a stork was sitting in the nest. In the same month P. SWART found a downy chick on the ground

* Notiz der Herausgeber: Hier war im Dezember 1838 auch der Beobachtungsplatz von FERDINAND KRAUSS (späterem Museumsdirektor in Stuttgart), der in seiner neuerdings aufgefundenen Autobiographie (Abdruck ist geplant) nichts über Störche berichtete.



Fig. 1. The nest in the Rooikrans tree first discovered in November 1961
(Photographs: G. J. BROEKHUYSEN).

under the tree, which had either fallen out or been pushed out of the nest. Storks lay there eggs with more as one days' interval. As incubation starts immediately after the first egg has been laid, there can be a considerable difference in age between the young of the same brood. The smallest is much the weaker and grows weaker and weaker, eventually lacking the power to make proper food-begging movements. As a result it is not fed any more by the old birds and this chick is likely to be thrown out or even eaten (E. SCHÜZ, 1943, Z. f. Morphol. u. Ökol.: 181—237; F. HAVERSCHMIDT, 1949, The Life of the White Stork: 50, 51). SCHÜZ remarks that these weaklings form a sort of reserve. They will survive when food conditions are favourable, but when the food supply is not very abundant, or even normal, the young weakling will come to grief. On 5 January 1964 the nest site was visited in the afternoon. From a far distance the nest seemed unoccupied, but when approached nearer three very large well feathered nestlings, which had been lying down concealed in the nest cup, stood up and showed themselves clearly. At that moment there was no sign of any parent bird. On 8 January the nest site was again visited. The three large nestlings were still in the nest but took off when the nest was approached by car. The birds circled higher and higher and could obviously fly very well. They eventually alighted in a field concealed from view. They eventually took off again and soared for some time after which they came down in a ploughed field near the nest tree and in full view. It was noticed that the plumage was practically mature. The legs were getting a pinkish sheen and the bill was just reddening. Most of the time they preened and there was little, if any at all, searching for food.

At 11.30 on the same day one of the parent birds flew in and alighted a short distance away from the immature birds who did not seem to react to the arrival of the older bird. The parent almost immediately started the typical bowing display whereby the head and neck were first bent forwards and then through an arch brought back over the back so that the upper part of the neck and head actually touched the back, the bill pointing upwards. While the head moved forward the tail was cocked and all the time there was loud bill snapping. This display is described by HAVERSCHMIDT who calls it

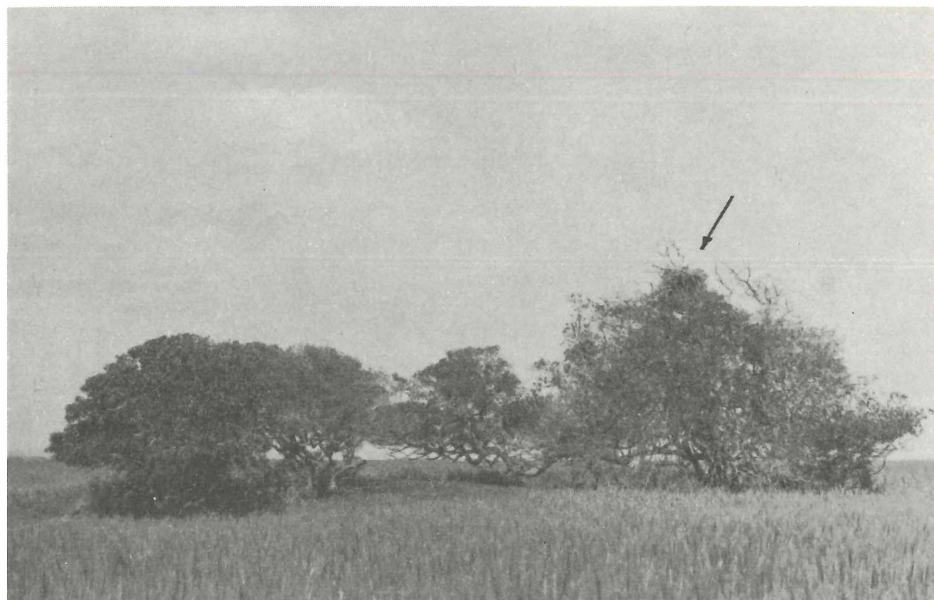


Fig. 2.

“Prinskraal nest I” in the top of one of a group of melkbos trees in the middle of a wheat field.

“clattering strophe”. The bird went on displaying for quite some time and was not seen to regurgitate food but kept all the time some distance away from the three young birds who in their turn did not approach either. The behaviour of the parent bird and the fact that the young birds did not beg for food indicated that the old bird was not at ease and, therefore, performed threat behaviour [E. SCHÜZ, *Bewegungsnormen des Weißen Storchs*. Z. Tierpsychol. 1943, 5 (1), and *Nestbesitz und Nesterwerb beim Weißen Storch*. Z. Tierpsychol. 1944, 6 (1)]. At 11.45 the parent bird again displayed and shortly afterwards flew a short distance. At 11.52 the other parent arrived flying with a fairly large twig with a tuft of leaves at the end in its bill. The bird at first seemed to make for the nest but eventually came down in the field where the others were. It fiddled for a while with the twig which it had put on the ground and then lost interest. According to SIEWERT (*Störche*, Berlin, 1932), SCHÜZ (1944) and HAVERSCHMIDT (1949) the building urge in this species persists during the whole breeding season and the birds often carry twigs when coming to the nest to attend to chicks.

After a while the bird moved closer to the young ones and while walking near them all of a sudden bent its head down and regurgitated food. Two of the young birds approached in the food begging posture (slightly crouched and wings partly spread and slightly drooping) and started swallowing the regurgitated food. The two parent birds then got together and engaged in an intense bout of displaying with lots of bill “clattering”.

These observations show quite clearly, that although these young birds looked very advanced and could fly very well, they were still being fed by the parent birds and very probably could not yet feed themselves. It is interesting that feeding occurred on the ground as HAVERSCHMIDT mentions “after having left the nest the young birds return each time to their former home to be fed when one of the old birds has come with food, and they still use the nest as a sleeping place for the night till they disappear”.

The fact that the parent with the twig in its bill first intended to go to the nest and that the three immature birds were on the nest and flew off when approached, may



Fig. 3.

Close up of "Prinskraal nest I" containing three medium sized chicks and one of the parents.

indicate that the behaviour as observed was somewhat abnormal due to the presence of the observer in his car. However, it does show that feeding of the young can be performed on the ground. SCHÜZ (1943, p. 28) mentions an observation by G. BODENSTEIN of feeding of young storks on the ground away from the nest.

Second pair nesting: — On 8 December 1963, J. MARTIN, E. MARTIN & R. MARTIN found a second nest on the farm Kleigatheuwel within sight of the Prinskraal II nest and the 1961 nesting site. This nest, Kleigatheuwel nest I, was about 25—30 feet up in an *Eucalyptus* tree which was one in a short row of trees. When first discovered, one bird was noticed carrying nest material to the nest and shortly afterwards both birds were seen to tramp down lining material, slowly moving around while doing so. Bill clattering by at least one but perhaps both was heard from a distance of 200—300 yards. These observations by the MARTIN's are interesting as HAVERSCHMIDT in his description of the building of the nest does not mention tramping in of lining material but on the contrary mentions that the eggs are deposited on a small heap of soft nest material.*

When this nest was visited again on January the 5th, 1964, it was found to have been blown out of the tree and there was evidence that this had taken place quite some time ago. There were no signs of storks but several black primaries were collected on the ground.

Third pair nesting: — Mr. J. G. GILLIOMEE reported that the Prinskraal nest I had also been occupied earlier in the season and that two chicks had been raised. It is, therefore, practically certain that during the spring of 1963 there were three attempts of nesting by three different pairs of White storks and that eventually five

* The possibility is not excluded that what the observer took to be tramping down of lining material was in actual fact the "Stummes Umeinander-Herum-Schreiten" which often is a preliminary to the actual mating act.



Fig. 4. "Prinskraal nest II" in tall *Eucalyptus* tree. Arrow points at actual nest.



Fig. 5. Close up of "Prinskraal nest II" with parent bird just taking off.

young birds were raised and left the nests. None of these were ringed. During the winter months in 1964, Mr. GILLIOME found two dead storks on his farm land none had a ring on.

1964: On 3 October the different nest sites were visited and checked. The Prinskraal nest I and nest II were both occupied and parent birds were sitting, presumably in-



Fig. 6. "Kleigatheuwel nest II" with one of the parent birds standing on it.



Fig. 7. Close up of "Kleigatheuwel nest II" in *Eucalyptus* tree. Arrow points at spot where "Kleigatheuwel nest I" was the previous year before it was blown out.

cubating eggs. At the Kleigatheuwel nest site it was found that a new nest, Kleigatheuwel nest II, had been built in an *Eucalyptus* tree next to the one in which the nest was built the previous year. One of the parent birds was standing on the nest.

On 29 November we found that Prinskraal nest I contained three medium sized chicks with primaries just developing and one addled egg measuring 73.8×55.0 mm.

All three chicks were ringed. Both parent birds were seen to visit the nest one carrying what looked like a ball of manure. Prinskraal nest II was still occupied but we could not make sure what was in it. One of the parent birds was standing on the nest when we approached. It was noticed that European Starlings (*Sturnus vulgaris* L.) in full breeding plumage were interested in the bottom part of Prinskraal nest I and, therefore, were probably nesting there, while there were two old nests of the Cape Weaver attached to the Prinskraal II nest. This time we checked on the 1961 nest site but found that the large branch of the Rooikrans tree which had supported the tree had been sawn off. There are indications that this took place in 1963. As the Kleigatheuwel nest was occupied for the first time in 1963 it is likely that the pair which built it were the same birds which in previous years had occupied the nest in the Rooikrans tree.

On December the 9th, P. SWART and the author equipped with a long ladder, visited the Prinskraal II and Kleigatheuwel nests. A close inspection of the nest contents was carried out. On the ground under the Prinskraal II nest were found the remains of at least four eggs. These very probably at one stage during the incubation period had been blown out the nest by strong wind which at intervals occurs in the district. In the nest was a large chick which we ringed. This nest must, therefore, in the early stage of the incubation period have contained at least five eggs. The Kleigatheuwel nest had two medium sized chick in it which we also ringed.

S u m m a r y

The nesting of *Ciconia ciconia* in the Bredasdorp district, Republic of South Africa, during 1961—1964 has been described.

Summarising it appears that in the spring of 1961 one pair nested. From this nest three young birds flew. In 1962 two pairs nested. The one nest contained five eggs which all came to grief and from the other three young birds flew. In 1963 three different pairs of storks attempted to breed. Casualties among eggs and chicks were high and only in the case of two nests young birds flew while the third nest was blown out the tree. The total number of young birds which left the nest this season was five. In 1964 again three pairs nested. The number of eggs laid was 3, 5, 2. The total number of young birds which flew was six.

In total 5 nests were built during this four years period. 4 nests were in introduced trees (three in *Eucalyptus* trees and one in an *Acacia cyclops* Cunn. tree), one was in the indigenous melkbos tree *Calvaria inermis* (L.). In the case of nearly all nests other species of birds nested either in the stork's nest or very close to it. The species involved were: European Starling (*Sturnus vulgaris*), Cape Weaver (*Ploceus capensis*), Egyptian Goose (*Alopochen aegyptiacus*) and the Black Crow (*Corvus capensis*).

Z u s a m m e n f a s s u n g : Nachdem zuletzt Ende 1941 etwa 7 Jahre hindurch ein Storchpaar rund 350 km E von Kapstadt gebrütet hatte, nisteten nunmehr 1961 bis 1964 weitere Paare im Distrikt Bredasdorp (rund 160 km ESE von Kapstadt). Im einzelnen 1961: ein Paar mit 3 flüggen Jungen. Bemerkenswert der Nachweis eines beringten Jungvogels im März 1962 an der Zambia-Tanganjika-Grenze (siehe Vogelwarte 22, 1963, S. 38). 1962: zwei Paare, das eine Nest mit 5 Eiern (verschwunden, keine Junge geschlüpft), das andere mit 3 ausfliegenden Jungen. 1963: drei verschiedene Paare nistend und mit Nachwuchs, doch flogen nur in zwei Nestern zusammen 5 Junge aus und wurde das dritte Nest während der Brutzeit vom Baum geblasen. 1964: wieder drei Nestpaare mit 3, 5 und 2 Eiern und mit insgesamt 6 ausfliegenden Jungen. Einige brutbiologische Angaben sind beigefügt. Insgesamt wurden in diesen 4 Jahren 5 Nester gebaut, davon 4 auf eingeführten Baumarten (3 auf *Eucalyptus* und 1 auf *Acacia cyclops*); nur 1 Nest stand auf einem einheimischen Baum (*Calvaria inermis*). In und bei diesen Horsten nisteten noch Star, Kapweber, Nilgans und Kapkrähe.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Vogelwarte - Zeitschrift für Vogelkunde](#)

Jahr/Year: 1965

Band/Volume: [23_1965](#)

Autor(en)/Author(s): Broekhuysen G.J.

Artikel/Article: [Nesting of the White Stork \(*Ciconia ciconia* \[L.\]\) in South Africa 5-11](#)