

and markings. The *Waitangi* again followed. As it neared Gannet Rock the booby banked sharply to begin another figure-eight. This brought the under surface of the wings nearly at right angles to the light, and gave a clear view of the underwing pattern from a distance of only a few yards.

Birdwatchers who have the opportunity are asked to be on the look-out for this bird; there may be more than one. It will be associating with other gannets. Standing among them it keeps its tail further down and balances further back on its legs. It seems an inch or more shorter than our gannets. In the air its wingspread is noticeably less — say, 66 inches instead of 70.

The feathers are of two colours, a rich, deep, warm brown (not as dark or lifeless as chocolate), and white. The colour changes abruptly from one area to another. The head, neck, back, tail, and top of the wings are brown. The belly and part of the under surface of the wings are white. From below, the wingtips are brown and a brown border encloses the white parts of the remainder of the wings. This border is much narrower in front than behind, and curves forward slightly to meet up with the brown part of the neck. The beak is light in colour and in many lights has a tinge of blue. Above and below the beak, the face and neck are bare and similar in colour. Against the rich brown of the head and neck, this light face area seems most unnatural, and the eyes are very prominent in it. Much the same effect would be obtained if a brown knitted balaclava were pulled over the head of a white bird and down the neck to wing level. The horn-coloured beak and light face would be seen through the opening in the balaclava, and the lower end where it ringed the neck would project slightly, as they seem to on the booby.

When the bird is standing at rest, the tops of the feet are seen. They are yellowish and may have a tinge of orange. When the booby is flying, it does not conceal its legs and feet as does the gannet. The legs appear well apart outside the feathers. The feet seem very dark against the underside of the bird and are so large that they make a band across the body and tail. The tail is generally longer than the gannet's and comes to a finer point in flight. When the booby hovers, however, it can spread the tail feathers out wide and a V-shaped gap appears between the middle feathers.

FURTHER NOTES ON WHITE-WINGED BLACK TERN (*C. leucopterus*) IN MANUKAU

By R. B. SIBSON

Since the White-winged Black Tern which spent the winter of 1953 (*Notornis*, 6.46) at Ascot, Mangere, was last seen on 27/8/53, there have been two more occurrences of this interesting vagrant in Manukau Harbour.

On 30/5/54 Mr D. A. Urquhart saw a W.W.B.T. flying along the shore at Karaka. It was a conspicuous bird in breeding plumage and was being pursued by a flock of godwits, from which different individuals in turn headed the pursuit. To escape them the W.W.B.T. climbed to 500-600 feet and flew inland.

On 30/10/54 I visited a corner of Manukau Harbour near Otahuhu, where in spring there are usually many non-breeding stilts. As the tide comes in, these gather on a small sandbank and at this season they are often joined by hundreds of newly arrived godwits. But stilts and godwits were quickly forgotten when I noticed a W.W.B.T. flitting up and down the tideline and over the flats, favouring especially those parts which were carpeted with a growth of green alga, which on examination appeared to be the breeding ground of some species of marine fly. The alga has been identified by Professor V. J. Chapman as a species of *Enteromorpha*, 'probably *E. intestinalis forma tubulosa*'. The tern was flying low in the manner typical of this species, lightly taking food near the surface of ground or water. Once when it was chased by a Red-billed Gull and climbed higher, I saw that there were the remains of nuptial black on the underside of the

wings. Otherwise it was a pale grey bird with white underparts, the tail perhaps being a little paler than the back and the upper surface of the wings. There was a small dab of black behind each eye and the nape was black as in other recently recorded W.W.B.T. (*vide* sketches by Dr C. A. Fleming, *Notornis*, 6.71). It was briefly chased several times by Red-billed Gulls, but neither stilts nor godwits were upset when it skimmed low over them and it settled quite happily among them.

On the next day Messrs E. G. Turbott and J. C. Davenport accompanied me and we found the tern sitting on the sandbank among the stilts. Twice it was seen to leap off the ground as if snapping at a fly under a stilt's belly. When it took wing and started to feed, it was persistently harried by Red-billed Gulls, which it eluded without difficulty. It made one long flight over the harbour. As it returned, flying fast at a height of about forty feet, it uttered an incisive 'keevit' and a sharp 'keet' before it alighted. All three observers were able to note the irregular black markings of the underwings.

That it was in the last stages of losing nuptial plumage was most interesting. It could have been the same bird as D.A.U. had seen at Karaka five months earlier, and that may well have been the bird which had spent the previous winter in Mangere as a yearling. Much remains to be learnt about the age when terns start breeding. The evidence seems to indicate that *C. leucopterus* does not breed in its first year and that though it may assume nuptial dress in its second year, it may defer breeding till its third year, after assuming nuptial dress for the second time.

It has also been suggested that this last W.W.B.T. in worn breeding dress could have been an adult which after a nesting season in the northern hemisphere had got caught up in a stream of southward-bound migratory waders.

From the bay where I first found it, it moved half a mile into Harania Creek, where it fans out above the Favona Causeway into a wide expanse of mud which only the biggest tides cover completely. Here the W.W.B.T. stayed for five months, so that many local observers were able to see it. During this stay it completed a moult into winter plumage, but by the time it was ready to leave it was again in nuptial dress. I was able to make a few notes on these changes. As late as 23 December there were still traces of black on the underwings.

On 5 February the tail seemed very white in contrast with the grey of the back and upper wing surface; and I believe the moult into summer plumage had begun. By 4 March a most striking change had taken place, for at a distance the tern appeared to be in full breeding dress, but when it flew closer I could see that the belly was flecked with white and that there was a little white about the face. The bill was not yet conspicuously red. When I last saw it on 24/3/55 the white flecks on the belly had gone.

The W.W.B.T. frequented Harania Creek at a season when the population of gulls in Manukau is at its smallest; and because of its restlessness it was usually an easy bird to find, though there were occasions when it was missing. For some reason it never seemed to rest on any of the many available stakes which are favourite perches for the gulls when they are in this creek. Twice I saw it balancing precariously on the topmost strand of a derelict coil of wire out on the mud. More often it rested on the mud on the edge of flocks of stilts or godwits, but sometimes right among them. It usually fed either along the edge of the tide or over a long squelchy puddle, green with algae, where a stream trickled in, a paddling-ground popular with stilts. There were no freshwater pools in the vicinity which it could visit.

On 31 December I saw another side of its flying ability. Towards full tide flocks of waders gather in the shallow lagoon part of Harania Creek. On this day godwits, knots, stilts and even a few wrybills were resting on the mud when a passing harrier put them up. In a swirling host of some three thousand waders the White-winged Black Tern quickly climbed 400 to 500 feet.