



*Buff-breasted Sandpiper chick, newly hatched.
Watercolour direct from life by George Miksch Sutton.*

Behaviour of the Buff-breasted Sandpiper at the Nest

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ABSTRACT. Observations of the Buff-breasted Sandpiper (*Tryngites subruficollis*) on Victoria and Jenny Lind islands in 1962 and 1966 suggest that the female is solely responsible for incubation and brood-rearing and that the species is polygamous. Males collected in June and July were without brood-patches but in each specimen the skin of the chin and throat was vascularized. A female flushed from eggs 12 June 1966, did not feign injury but when flying close to observer slowed speed by allowing legs to dangle.

RÉSUMÉ. *Comportement au nid du Bécasseau roussâtre.* Des observations sur le Bécasseau roussâtre (*Tryngites subruficollis*) faites en 1962 et 1966 dans les îles Victoria et Jenny suggèrent que la femelle est seule responsable de la couvée et de l'élevage de la portée et que l'espèce est polygame. Des mâles pris en juin et en juillet étaient dépourvus de marques de portée, mais dans chaque individu la peau du menton et de la gorge était vascularisée. Une femelle éloignée de ses œufs le 12 juin 1966 ne se livra à aucune simulation de blessure, mais lorsque son vol l'amena près de l'observateur, elle laissait pendre ses pattes pour ralentir.

РЕЗЮМЕ. *Поведение желтозобиков у гнезда.* Наблюдения желтозобиков (*Tryngites subruficollis*) на островах Виктории и Джени Линд в 1962 г. и в 1966 г. разрешают нам предполагать, что самка вполне ответственна за высидывание яиц и выращивание выводков, а также, что птицы этой породы — полигамы. У самцов, добытых в июне и июле, не было оголенных от перьев пятен, которые иногда наблюдаются в инкубационный период, но кожа на подбородках и шеях всех экземпляров была сосудиста. Самка, вспугнутая с яиц 12-го июня 1966 г. не притворилась раненой, но опустив ноги так, чтобы они свободно свисали, она замедлила скорость пролетая мимо наблюдателя.

The remarkable courtship behaviour of the Buff-breasted Sandpiper (*Tryngites subruficollis*)—the wing-flashing and -spreading, the aerial sparring, the stiff, vertical posture, the 'standing on tip-toe', and the rapid *tick, tick, tick*, given so forcibly that the whole body is jerked by each *tick*—has been described in considerable detail by Rowan (1927, pp. 190-92) and by Oring (1964), but the behaviour of the species at its nest has not, so far as I know, been reported by anyone. When, in 1960-61, I prepared the life history of the Buff-breasted Sandpiper for Volume 9 of D. A. Bannerman's *The Birds of the British Isles* I had never even seen the bird on its breeding ground.

In 1962, and again in 1966, through the courtesy of my friend and former student David F. Parmelee of the Department of Biology at Kansas State Teachers College, Emporia, Kansas, I was able to see much of the Buff-breast in summer on Victoria Island (in the vicinity of the village of Cambridge Bay), and on Jenny Lind Island, a small, flat island just off the southeasternmost tip of Victoria Island in Queen Maud Gulf. In both of

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these areas the nesting habitat of the Buff-breast was well drained grassy tundra. The bird sometimes fed in low-lying, more or less marshy places near ponds, but on only one occasion (see below) did I see it at the water's edge.

Published references to 'pairs' of Buff-breasts taken or observed on the breeding ground (see Sutton 1961, p. 388; Bailey 1948, p. 226; and Manning, *et al.* 1956, p. 77) are misleading. According to my observations, male birds neither incubate the eggs nor in any way care for the young. I believe that males do not even know where the nests are, and I suspect that flocks which feed in or near nesting areas during the period of incubation are composed largely, if not wholly, of males. Whether females mingle with these flocks during the egg-laying period remains to be ascertained. The males apparently desert the females when egg-laying is over. Six adult male specimens taken by me, four of them on Jenny Lind Island between 24 June and 2 July 1962, one near Cambridge Bay, Victoria Island, on 15 July 1962, and one on Jenny Lind Island on 17 July 1966, were each without a trace of brood-patch. The only bird observed at a nest (four eggs) found by our party on Jenny Lind Island on 24 June 1962 proved to be a female. Three almost fledged chicks which H. A. Stephens and I happened upon near Cambridge Bay, Victoria Island, on 29 July 1962, were attended by one parent only, the female (collected). A brood of four newly hatched chicks found by our party on Jenny Lind Island shortly before midnight on 20 July 1966 were accompanied by the female parent only (collected).

On 12 July 1966, on Jenny Lind Island, I spent three hours (11 A.M. to 2 P.M.) observing a Buff-breast whose nest and four eggs I discovered at the end of the period. The nest was on fairly dry, gently sloping tundra above three shallow ponds, the smallest of which was about thirty paces away. The nest was sheltered to some extent by short grass and was composed entirely of crisp dry willow leaves which probably had been carried a considerable distance, for the only willows I could find in the vicinity were about ninety paces away, near the end of one of the ponds.

When, at 11 A.M., I first saw the bird whose nest I was later to discover, it was flying directly toward me about four feet above ground. It approached to within six yards, slowed down slightly by letting its legs dangle, repeated a fairly distinct but not at all loud *chup* or *chook*, then veered off gracefully, alighting upslope several rods away. Its behaviour told me clearly that it was excited or perturbed. On alighting it held its head high a moment then started what appeared to be energetic feeding. It took long, rather rapid strides, moving constantly in my direction with head down most of the time. Although it appeared to be snatching at seeds or small insects, I am not sure that it was actually feeding on *anything*. It was obviously smaller and duller than most of the Buff-breasts I had been seeing, so I felt sure that it was a female. Sensing that I might be near a nest or chick, I placed on the ground the fisherman's creel I had with me for carrying specimens, and walked toward the bird. I had taken only a

few steps when the Buff-breast flew up lightly, came straight for me, described a full circle (radius about thirty feet) around me, and alighted, again upslope, but off in another direction. I walked back to the creel and, without choosing the spot at all carefully, sat down. Again the bird circled me. This time it alighted along the shore of the nearest pond, dabbed its bill in the water somewhat perfunctorily, ran across the mud in my direction, and started 'feeding' in the grass. This circling, calling, alighting, and busy 'feeding' continued a full hour.

The ground beneath me was spongy and damp. Surmising that I might be close to the nest or chicks, I left the creel where it was, retraced about twenty steps, and sat down again, this time on a low hummock. The bird circled me, repeating its dry, unmusical, not very noticeable cry, and sped off, almost out of sight in the direction of the farthest of the three ponds. Following it closely with my binoculars, I saw it alight. It looked about with head high as if scanning the horizon then flew back, once more straight toward me. This time, after alighting, it took a few quick steps and disappeared. I thought it had returned to its nest, but when I stood up I perceived that it had moved into a shallow depression and was standing in an opening among the grass, preening vigorously.

Whenever I changed position (i.e., walked a few steps, stood up, or sat down) the bird circled me. On two occasions during the second hour of observation I thought it had returned to the nest, but careful inspection of the spot from which it flew up was in vain. At a little after 1 P.M. a Parasitic Jaeger (*Stercorarius parasiticus*) flew by, pursued by two belligerent and noisy Ruddy Turnstones (*Arenaria interpres*). The Buff-breast lifted its head high, obviously interested in what was going on, but did not join in the chase. At about 1:15 P.M. a Black-bellied Plover (*Squatarola squatarola*) flew in. As it alighted, perhaps fifty yards away, the Buff-breast lifted one fully spread wing high over its back. Never before had I seen a Buff-breast which I felt sure was a female lifting a wing in this manner. The flash of satiny white appeared to me to be noticeable, but so far as I could tell it in no way affected the behaviour of the plover.

At about 1:30 P.M. I decided that if there were eggs or chicks in the immediate vicinity, I was so close that the brooding parent was afraid to return to them. Leaving the creel where it was, I moved to higher ground fifty yards or so off and located the Buff-breast again with my binoculars. Hardly had I settled myself in this new position when the bird ran quickly forward, spread her belly plumage, and sat down. Now I could not see her, for she was hidden by the grass, but I 'placed' the spot carefully by memorizing the shapes of clumps of white flowers that were blooming close by. Certain that I knew exactly where the bird was, I stood up and started walking toward her.

Almost at once the Buff-breast flew up, heading in my direction. Presently she veered off and alighted several rods away *without the slightest feigning of injury*. Intent, now, on finding the nest, I could not keep my eye on the bird. The nest was about fifteen paces from the creel. The eggs

were not pipping.

I was in a quandary. The nest was about three miles from our tent. Visiting it regularly would take a great deal of time. We had lost nest after nest to jaegers and foxes. I felt that we could not afford to lose this one, for it was the only Buff-breast nest we had found that season. One of the eggs tended to float when I placed it in water, so I judged that the embryos were well developed. I decided to carry the eggs as promptly as possible to the incubator at our tent and to hatch them there, for I had never seen a newly hatched Buff-breast and I wanted very much to paint one direct from life. In haste I tried to obtain the adult bird so as to be sure of its sex, but an ineffectual shot caused it to fly off and I decided against following it since I felt that the problem of first importance was keeping the eggs alive.

At about 3:30 P.M. I placed all four eggs in the incubator. They never hatched. Dr. Parmelee, who was good enough to prepare them for me, found the dead embryos well developed, though by no means at the point of hatching. I suspect that they died while being carried from the nest to the tent, or while I prevented the bird from keeping them warm.

At no time during the three-hour period of observation at the nest did I see more than the one adult Buff-breast. The fact that this bird did not join the turnstones in driving off the jaeger surprised me but somehow seemed 'in character,' for the Buff-breast is a retiring, almost a demure bird.

My drawing of the newly hatched chick (see frontispiece) was made direct from a living bird on 21 July 1966. My model was one of the brood of four which our party found late in the evening on 20 July. On that occasion we took the entire brood as well as the one parent in attendance, the female, as stated above. The exquisite drawing of the newly hatched chick by Allan Brooks (1939) shows a conspicuous ruff or fan on the hind neck, an adornment I am at a loss to explain; the drawing also shows the 'delicate wash of pale yellow over the jugulum and sides of the head' referred to by the author in his descriptive comments, a colour-tone not evident in any of the several living chicks that I have handled. The Brooks drawing and description were based not on living birds, of course, but on the skins of 'two newly-hatched young . . . from the same brood' collected at Point Barrow, Alaska, by C. D. Brower, 25 July 1935.

A fact about the Buff-breasted Sandpiper should be stated here since I find no mention of it in the literature at hand. The courting male draws his head down and back and puffs out his throat while delivering the rapid *tick, tick, tick* mentioned at the very first of this paper. During this part of the performance the bird acts as if it is gasping for air. During the period of courtship the skin of the throat and upper foreneck is thickened and flabby, about as it is throughout the whole of the foreneck and chest in the male Pectoral Sandpiper (*Erolia melanotos*) and throughout much of the foreneck in the male White-rumped Sandpiper (*E. fuscicollis*). The Pectoral Sandpiper and White-rumped Sandpiper are known to be polygamous; the Buff-breasted Sandpiper probably is polygamous also.

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