

CAYENNE TERN ON LI, NY: NORTH AMERICA'S FOURTH

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ABSTRACT

An adult, basic-plumaged Cayenne Tern in the Westhampton Beach area of Suffolk Co., Long Island, NY, on 17-18 Jul 2000 was not only the first for NY, but just the fourth for North America—and the first away from the Outer Banks of NC.

Its complete description, and a discussion of Cayenne Tern's identification, distribution, and taxonomy—especially its complex relationship with Sandwich Tern—are presented.

INTRODUCTION

On 17 Jul 2000, an adult Cayenne Tern, *Sterna (sandvicensis) eurygnatha*, was identified 4.5 km (3 mi) east of Moriches Inlet, Suffolk Co., L.I., NY, along that portion of the south shore of Moriches Bay known as Pike's Beach. It was discovered independently by three parties during the afternoon and evening of 17 Jul: SSM, accompanied by Peggy and Joel Horman, arrived in Westhampton Dunes at 1200h and found the tern around 1400h; Gerta and John Fritz arrived in the area around 1600h and found the tern a short time later; Hugh McGuinness arrived around 1615h while the Fritzes were still present, but found it from a different vantage point. This bird, which remained long enough to be observed at the same location by PAB, Fritzes, SSM, T.H. Burke and others the following day, represents the first *eurygnatha* from New York State, and only the fourth ever in North America (Buckley and Buckley 1984; Davis 1995a, b; AOU 1998).

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DISCOVERY AND DESCRIPTION

SSM and party were looking for the adult Red-necked and Little stints (*Calidris ruficollis* and *C. minuta*) that had been found at this location a few days before. By 1400h, they had reached the north end of a large spit that had been favored by the Red-necked Stint, examined, without success, the flats emerging on this spit's western side, and started walking back to check newly exposed flats to the west. As SSM gave the western side of the spit a final scan, he was stunned to discover a medium-sized, yellow-billed, crested tern resting on a narrow sandbar just beginning to emerge to the north and west of the large spit. He immediately drew the Hormans' attention to it, and over the next 20-30 minutes, they studied it closely at rest and in flight, through binoculars and a 32X scope, from distances as close as 50m. One other birder, Eric Salzman, was visible to the observers at this time, and his attention was also called to the tern. The following details were noted, explicitly discussed by all observers, and recorded by SSM a short time later.

Clearly an adult 'crested tern', it was in basic plumage, rapid loss of alternate plumage, sometimes even before egg-laying, being typical of crested terns. Direct comparison revealed it was roughly 10-15% larger than adjacent Common Terns (*S. hirundo*)—and thus clearly smaller than a typical Royal Tern (*S. maxima*) but close in size to a Sandwich Tern (*S. sandvicensis*). The upperparts were very pale gray, the forehead and crown white, the nape and crest black, and a narrow black mask extended from behind the eye around the back of the head. The crest was obvious, but not as strikingly long as in Elegant Tern (*S. elegans*). The bill appeared very long, much slimmer than that of Royal Tern, seemed to droop toward the tip, and its overall color was a cold greenish-yellow, devoid of any orange or red tones. The basal fifth and the distal third of the bill were purely this color, as were the top of the culmen, both cutting edges, and the lower edge of the lower mandible. In between these areas, i.e., in the middle portions of each mandible, were several blackish-gray marks. These marks were not very extensive and were most obvious when the bill was in full profile, but in some views, they were barely discernible. SSM felt that the impression of a droop to the bill was largely a result of the curvature of the culmen, and that the lower edge of the lower mandible was essentially straight; Joel Horman thought that the lower mandible drooped slightly as well. All agreed there was no obvious gonydeal angle. The folded primaries on the standing bird looked blackish and contrasted with the pale gray tertials and mantle. In flight, the dark outer primaries showed as a blackish rectangle on the upper surface of each hand, contrasting dramatically with the almost whitish remainder of the upperparts. There were no dark markings whatsoever on the tail, mantle, scapulars, tertials, secondaries, or wing coverts (i.e., no carpal or secondary bars), nor was there any

other evidence of immaturity. The underwing was pale except for a dark trailing edge to the outer primaries. The unbanded legs and feet were black.

This party left the tern resting on the bar at about 1430h. As they proceeded to the west, they encountered several observers who had located and were watching the Red-necked Stint. As SSM, the Hormans, and Salzman paused to study the stint, they related the presence of the unusual crested tern farther to the east. SSM later learned that these persons (Joe DiCostanzo and companions) had subsequently seen the tern briefly before it disappeared from the bar.

Gerta and John Fritz found the Cayenne Tern independently ca. 1600h on a mudflat several hundred meters west of the site of its initial discovery. They studied the bird at length, recorded all of the features enumerated above, and exposed several rather distant photos. These photos, although unsuitable for publication, nevertheless show several important fieldmarks and are preserved in SSM's files.

SUBSEQUENT OBSERVATIONS

News of the discovery spread quickly that evening. SSM telephoned PAB—one of very few people he knew to have seen multiple Cayenne Terns in life—and A.J. Lauro of the New York City RBA. John Fritz and SSM spoke by telephone around 2000h, finally learning of each other's observations. Later, McGuinness posted a message regarding the tern on his electronic newsletter, East End Report.

By 1100h the following morning, 18 Jul, as the tide began to fall, a dozen observers had converged on Pike's Beach. PAB was the first to relocate the Cayenne Tern, which was resting on the western shore of the large spit described above. Francine G. Buckley was the first to notice that a typical adult basic-plumaged Sandwich Tern—with an aluminum band on its right leg—was also present. The opportunities for direct comparison with a Sandwich Tern in the same telescope field, and for contrast with an adult basic-plumaged Royal Tern seen earlier that morning, were especially helpful in confirming the Cayenne's identification. All of the points noted in the previous day's description were reaffirmed at this time.

It is curious that in initial impressions, virtually all observers felt that the Cayenne's bill seemed larger and heavier than a Sandwich's, whereas these differences largely vanished under direct comparison with the latter species. Observers who never saw the Cayenne alongside the Sandwich had difficulty believing that the former's bill was, in fact, very similar in size and shape to that of a typical Sandwich Tern. The Cayenne was slightly larger overall than the Sandwich (but well within the range of sexual size variation in Sandwich), and

several observers—even after acknowledging the illusion described above—still felt that the Cayenne's bill was slightly deeper-based, showed somewhat more curvature to the culmen, and gave a more drooping impression than that of the Sandwich. At rest and in flight, another subtle distinction was noted between the two: the dark patch on the upper surface of the outer primaries was larger and bolder in the Cayenne than in the Sandwich, and it contrasted more strongly with the rest of the upperparts. The upperparts of both birds were very pale, and observers could not discern striking contrast between the white tail/rump and the pale gray mantle on either bird. Observers on the 18th agreed that the apparent extent of the dark elements on the bill varied with angle, lighting, and distance, appearing least extensive under the best and closest viewing conditions.

Eventually, the Cayenne Tern flew southeast, passed over the observers, and disappeared from sight over the ocean; fifteen minutes later, the Sandwich Tern left. By the time the observers had departed the large spit, the Cayenne Tern had returned and was bathing in the shallow water over the same sandbar, just now emerging, where it had been discovered the previous day. The Cayenne Tern was seen sporadically on this bar, in flight, and on another bar several hundred meters to the west, by several different parties, at least through 1600h. All efforts to find it after 1800h and on subsequent days were unsuccessful, but the Sandwich Tern remained in the area through 23 Jul (NYC RBA). At no point did the Cayenne and Sandwich Terns interact socially, and apart from the few minutes immediately following the initial observation on 18 Jul, they were never seen together.

IDENTIFICATION

This Cayenne Tern was distinguishable from other taxa of crested terns by virtue of its smallish size eliminating-Royal (*maxima*) and Greater Crested (*bergii*)-and plain yellow bill-eliminating Elegant (*elegans*), Lesser Crested (*bengalensis*), and the nearly extinct Chinese Crested Tern (*bernsteini*). It was also distinguishable from all of these but *bengalensis* by differences in bill structure, from several races of *bergii* and *bengalensis* by its paler mantle, from *bengalensis* also by its white rump and tail, and from *elegans* also by its shorter crest (Malling Olsen and Larsson 1995).

It was of course separable from Sandwich Terns (*sandvicensis/acuflavida*) by its almost wholly yellow bill. The limited blackish markings on its bill fell well within the limits of variation described for populations of *eurygnatha* throughout the taxon's boreal range and thus do not necessarily represent evidence of any typical Sandwich Tern ancestry (see following discussion). The darker and more extensive blackish surfaces on the outer primaries, relative to the Sandwich Tern with which it was observed, reflect greater relative wear of these feathers. Such a difference likely mirrors timing of molt in the two indi-



Figure 1. A breeding colony of Cayenne Terns on Aruba, Netherlands Antilles, date unknown; photo courtesy of Roland DeKorte and the Society of Caribbean Ornithology.

viduals, such as would be expected in boreal summer breeders from different latitudes (assuming the Sandwich to have most likely come from NC and the Cayenne from the Caribbean). Fig. 1 shows a colony of Cayenne Terns on Bonaire; the centrally dusky bill on the adult in the middle is a near-perfect match for the LI bird's.

DISTRIBUTION AND TAXONOMY OF CAYENNE TERN

Just what is a "Cayenne Tern"? In theory, it is a yellow-billed, Sandwich-like tern endemic to the southern Caribbean, with another, allopatric population along the coast of South America from Brazil to Patagonia. In practice, it's more complicated, and as species Cayenne and Sandwich have been both lumped (most current thinking) and split.

Sandwich Terns with yellow-nibbed, black bills breed locally in the Western Hemisphere from coastal Virginia south to Florida and west to south Texas; off the Yucatan Peninsula and Belize; at scattered sites in the Bahamas,

off Cuba, Jamaica, and Puerto Rico; and in the US and British Virgin Islands (Shealer 1999, Norton 2000). Black-billed breeders from the United States, Mexico, and the West Indies are usually treated as a distinct subspecies (*acuflyvida*) on the basis of their slightly smaller size and shorter bills relative to nearly identical nominate *sandvicensis* from the western Palearctic (Malling Olsen and Larsson 1995).

The center of abundance for boreal-summer breeding Cayenne Terns is on islands off the northern coast of South America. The largest colonies are on Aruba, Curaçao, Bonaire, Isla Margarita (Venezuela), and Battures de Malmanoury (French Guiana: Tostain et al. 1992), but it also breeds in small numbers elsewhere in the Caribbean between Trinidad and the Puerto Rican Bank (Norton 2000). Another, austral-summer breeding Cayenne Tern population occurs from eastern Brazil south to Patagonia, with postbreeders wandering northward but not beyond Brazil. To date, only one banded Sandwich Tern has ever been recovered south of the 'Guianas'—in Rio Grande del Norte, Brazil, ca. 6° S, where additional nonbreeders have also been reported (Sick 1993). No austral breeders have been proven to occur north of Brazil, and yellow-nibbed, black-billed individuals are apparently unknown as breeders in the austral population. Thus there is no evidence that the two Cayenne Tern populations exchange breeders or genes.

But in the southern Caribbean, especially on the islands of Curaçao and Bonaire, the situation is complex. There, one finds what appears to be an interbreeding population of yellow-billed Cayennes, black-billed Sandwiches, and various 'intermediates.' The situation was described in detail by Junge and Voous (1955), Voous (1957), Ansingh et al. (1960), and Voous (1968), with an accessible summary in Voous (1983). For example, in one eight-year study in the Netherland Antilles, the largest proportion of birds were yellow-billed (38-84%); the next most frequent group had yellow bills with 'some' black (11-36%); and Sandwich-like bills were found in 6-26% of the colonies. In addition, a handful ('present' or ~1%) of individuals with 'red' bills were detected each year (Voous 1983). The big question, still unresolved, is whether the Sandwich-like birds were genetically 'Sandwich' Terns that were hybridizing with Cayennes and producing all of the 'intermediate' bill types, or whether they were Sandwich-like variants within a single highly variable taxon known as Cayenne Tern. This question will only be answered by molecular analyses, so far lacking.

Until the early to mid 1960s, neither Sandwich nor Cayenne terns were known to breed further north in the West Indies than the southern edge of the Caribbean (Buckley and Buckley 1984), but since then distributions of both have apparently expanded considerably. Norton (2000) estimated the West Indian Cayenne breeding population at between 10-100 pairs, and that of Sandwich on the order of 2100-3000 pairs. Recently, apparent Sandwich and Cayenne terns have been found breeding together in small numbers on islands on the Puerto

Rican Bank (Culebra, Pelican Cay [USVI], and Anegada [BVI]). The problem there, as in the Netherlands Antilles, is definition of *eurygnatha*, as various 'intermediate' bill states ranging from yellow patches on otherwise Sandwich-like bills ('a small fraction' of breeders), to yellow bills with dusky markings have been found (Norton, pers. comm.). On the Puerto Rican Bank, Sandwich-like birds mated to Cayenne-like birds have been considered hybrid pairings, and all locally breeding terns with intermediate bill colors have been considered the product of hybridization (Shealer 1999, Norton 2000). Perhaps so, perhaps not.

Currently, the American Ornithologists' Union (1998) regards *eurygnatha* as a subspecies of *S. sandvicensis*, as do Malling Olsen and Larsson (1995). In contrast, Harrison (1983, 1987) accords species status to *eurygnatha*, but alludes to a lack of definite information regarding variation and hybridization in colonies along the Venezuelan coast. Nearly all books have paid scant attention to the widespread austral population. Malling Olsen and Larsson (1995) describe *eurygnatha* as follows: "As Sandwich Tern *acuflavida*, but bill yellow, varying from orange to straw-yellow, often with darker central areas." They also regard phenotypically intermediate individuals, with the basal two-thirds or more of the bill black (thus approaching the condition in *acuflavida*), as referable to *eurygnatha*.

Published photographs of 'Cayenne Terns' in Harrison (1987: numbers 637 and 638) and in Malling Olsen and Larsson (1995: numbers 57-59 and 71) show considerable variation in bill color and structure, even within the same flock. Major bill color-states (not discrete, but variable) include black with a yellow tip, black with yellow blotches, greenish-yellow with black blotches, orange-yellow with black blotches, pure greenish-yellow, and pure orange (red). Similarly, bill structure varies from as slender as *acuflavida* to almost as heavy as *maxima*, and from essentially straight to conspicuously drooping, but none of this variation has been critically dissected by sex, age, or latitude/breeding area.

Although the photos in Malling Olsen and Larsson (1995) only depict breeders from the Netherlands Antilles, Buckley and Buckley (1984) assembled evidence documenting variation in bill coloration within populations of *eurygnatha* from essentially all portions of the taxon's known range, including the larger-billed, longer-winged, austral-summer breeding populations in Brazil (Sick and Leão 1965), Uruguay (Escalante 1970), and Argentina (Voous 1968). Birds in all of these populations showed yellowish bills with varying amounts of dark blotching. In view of the great distance from the nearest colonies of *acuflavida*, the lack of exchange of banded individuals, the contrast in breeding seasons (austral vs. boreal summers), and the suite of structural differences between the austral populations and typical *acuflavida*, this variation cannot reasonably be attributed to introgression of genes for *acuflavida*-like bill color. Thus, it appears that most if not all populations of *eurygnatha* display highly variable bill coloration, but one that is most typically dull yellow.

In contrast, such variation is completely unknown among populations of nominate *sandvicensis* in the Old World. In the Western Hemisphere, there is actually little published evidence confirming the occurrence of yellowish bill patches among populations of undoubted *acuflavida*. Away from the zone of presumed contact with *eurygnatha* in the Netherlands Antilles/Puerto Rican Bank area, the only Sandwich Terns showing patches of light/yellow color on black bills have been reported from Cape Hatteras in 1983 (incubating adults with traces of yellow on mandibular rami: Buckley and Buckley 1984), and it is unknown if these represent hybrids or ancestral variation. There is also an undocumented claim in Shealer (1999) that occasional adult Sandwiches in 'more northern populations' may show some yellow along the gape, and that some juveniles may show yellow on the bill. The latter condition, at least, is not at all uncommon, so *eurygnatha* introgression need not be invoked; e.g., see Fig. 1 on Plate 13 in Malling Olsen and Larsson (1995: 56).

To date, the only North American occurrences of typical, yellow-billed Cayenne Terns are: alternate-plumaged adult at Cape Point, Cape Hatteras, NC, 30 May 1983, having a bill color "somewhere between 'lemon' and 'banana' yellow" with "a suggestion of duskiness on both mandibular rami" (Buckley and Buckley 1984); basic-plumaged adult photographed in the same location, 23 September 1994 (Davis 1995a); basic-plumaged adult with an "entirely cold, yellow bill" (P. Lehman and B. Patteson, pers. comm.) on a radio tower off Oregon Inlet, NC, 31 July 1995 (Davis 1995b); and the LI adult reported here.

CONCLUSION

The discovery of a Cayenne Tern on Long Island was perhaps not unexpected, given the taxon's northward expansion from its southern Caribbean base around the early 1960s, its current toehold breeding population on the Puerto Rican Bank, and the two additional NC records since the first in 1983. Whether Cayenne Terns represent a cohesive, albeit extraordinarily variable, biological species (perhaps occasionally hybridizing with Sandwich Terns at range edges), or whether their variably colored bills are indicative of widespread, systematic hybridization with and introgression from Sandwich Terns, it is likely that more will occur in North America. Regrettably, the attention accorded this taxon appears to be at least partly a function of whether or not the A.O.U. treats it as a valid biological species, hence one that is 'countable.' Nevertheless, the occurrence of an individual on Long Island was a provocative educational experience for many, and we encourage observers to document any future records of Cayenne Terns in North America. We thank John Fritz, Joel Horman, and Pat Lindsay for reviewing the manuscript, and Ricky Davis, Paul Lehman, Hugh McGuinness, Rob Norton, and Brian Patteson for information of various sorts.

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