A First Shy Albatross, *Thalassarche cauta*, in California and a Critical Re-examination of Northern Hemisphere Records of the Former *Diomedea cauta* Complex

Luke W. Cole
561 Hill Street
San Francisco, CA 94114
luke@crpesf.org

ABSTRACT

The Shy Albatross, *Thalassarche cauta*, is an Australian species, with some 55,000 to 60,000 pairs breeding on three rocky islands off the Tasmanian coast. It ranges widely in southern waters, and is found off southern Africa and, less commonly, off Atlantic South America. On 24 August 1999, a Shearwater Journeys pelagic trip out of Bodega Bay encountered a Shy Albatross approximately 15 km west-southwest of Point Arena, Mendocino County, California. I detail that encounter herein and discuss the taxonomic evolution, distribution, and status of the *Thalassarche cauta* complex. I offer previously unpublished criteria for separating Shy Albatross, *T. cauta*, from the similar White-capped Albatross, *T. steadi*, in light of the recent suggested split of the species. I also critically review other Northern Hemisphere records (including three other North American records) of the Shy Albatross in light of the suggested split. I conclude that both *T. cauta* and *T. steadi* have occurred in the North Hemisphere and in North America. The Point Arena bird is the first confirmed record of *T. cauta* for North America.

THE SHIFTING TAXONOMY OF THE SHY ALBATROSS COMPLEX

The taxonomy of albatrosses in general, and the Shy Albatross in particular, is dynamic and evolving. To understand where the taxonomy of the Shy Albatross complex stands today requires a brief history of the evolving understanding of its phylogenetic status. The Shy Albatross was first "discovered" in 1798, when Matthew Flinders found the breeding colony at Albatross Island in the Bass Strait north of Tasmania (Mathews 1912, Serventy et al. 1971). It was first described to science by the eminent English ornithologist John Gould in 1841, who named it the Shy Albatross, *Diomedea cauta*.

Reichenbach (1850), an early splitter, divided *Diomedea* into three genera, including the new genus, *Thalassarche* (Reichenbach did not classify *cauta*). Bonaparte (1856) followed Reichenbach in using *Thalassarche*, and put *cauta* within it. Coues (1866:174), who opined that among the albatrosses one could make an "accurate diagnosis of species in the characters afforded us by the bill alone," considered differences among the albatrosses "hardly sufficient" to warrant their own genera, and placed Reichenbach's *Thalassarche* genus, including *cauta*, back into *Diomedea*. Ridgway proposed the genus *Thalassogeron* for those albatrosses (which included the *cauta*, though Ridgway did not mention it) having the "culminicorn widely separated from the laterıcorn by the interposition of a strip of naked skin behind the nostril" (Baird et al. 1884). The taxon we now call *Thalassarche salvini* was first described as *Thalassogeron salvini* by Rothschild (1893:lviii) on the basis of its smaller bill and tarsus measurements and grayer head and neck than the type Rothschild called *T. cauta*, of Gould.

Australian ornithologist Gregory M. Mathews adopted Ridgway's *Thalassogeron* genus for the Shy Albatross, naming it *T. cautus cautus* (Mathews 1912). Mathews considered two previously described species, *T. salvini* and *T. layardi*, as subspecies of the *T. cauta*: *T. cautus salvini*, breeding on Bounty Island, New Zealand, and *T. c. layardi*, described by Salvin from off the Cape of Good Hope, South Africa. Shortly thereafter, Mathews (1916) moved *cauta* into its own genus, *Diomedella*, based on the "large amount of bare skin between the frontal feathering and the culminicorn as well as between the culminicorn" (Mathews and Iredale 1921:47). Loomis (1918) placed the Shy Albatross in *Thalassarche* (to which it has returned 80 years later), and determined that *Thalassogeron layardi* was actually a variation of *Thalassarche cauta*.

Mathews (1927) maintained *cauta* in its own genus as *Diomedella cauta*. He described two subspecies, *D. c. cauta* and *D. c. salvini*, subsuming his earlier subspecies *D. c. rohui* and *D. c. wallaca* into *D c cauta* Mathews (1934) later explained that *cauta* deserved its own

Figure 1. Shy Albatross, off Point Arena, California, 24 August 1999. Photo by Luke W. Cole.

genus on the strength of "the naked skin between the square base of the culmen and the feathers wide [similar to other mollymawks], but the fleshy transverse bar at the based of the ramicorn is continued along the ramus, causing a distinct angle; this character is shared by no other bird in the family." He also opined that "it should be quite easy to name [=identify] any perfect adult bird, and almost as easy from seeing only the bill." Alexander (1928) followed Loomis (1918), and described two subspecies, *Thalassarche cauta cauta* and *T. c. salvini*. He also echoed Loomis in noting that *T. layardi* = *T. cauta*, a conclusion also reached by Murphy (1930), who felt that *T. layardi* was probably *T. c. salvini*.

Murphy (1930) described three races of *T. cauta*, including the newly discovered *T. c. eremita* which Murphy had found nesting on Pyramid Rock off the Chatham Islands. *T. c. eremita* differed from *T. cauta* in size (wing mean = 546 mm, range = 534–562 mm, $n = 7$ males, 9 females), and in having an "entirely bright yellow" bill. Oliver (1930) kept the Shy Albatross in *Thalassarche*, describing two subspecies, *T. cauta cauta* and *T. c. salvini*, and gave the newly described "Chatham Island Mollymawk" full species status as *T. eremita*. Falla (1933) described *steadi* to science from New Zealand waters, and Mathews (1946) placed it as *Diomedella cauta steadi*.

Murphy (1936) changed course and concluded that all albatrosses except sooty albatrosses belonged in the genus *Diomedea*, and described three "well-marked" subspecies of *D. cauta*: *D. c. cauta*, *D.c. salvini*, and *D.c. eremita*. Mathews and Hallstrom (1943) went to the opposite extreme, dividing Diomedeidae into nine separate genera, continuing with *Diomedella* for *cauta*. Mathews (1948) then decided that bill color did not have "generic value" and declaring "we must lump," abruptly placed all albatross (including the sooty albatrosses) into a single genus, *Diomedea*. Oliver (1955) went against this grain and retained *Thalassarche* for the mollymawks.

In 1965, a group of 15 prominent ornithologists from four continents, expressing frustration with the "confusion" in the taxonomy of Procellariiformes, which they largely blamed on Gregory Mathews, reached consensus on a standard taxonomy for the order (Alexander et al. 1965). Noting that Mathews had devised "a series of inconsistent new classifications and succeeded in reducing international usage for the group to chaos," the group reworked the albatross taxonomy and included just two genera in the family Diomedeidae, *Phoebetria* for the sooty albatrosses and *Diomedea* for all others (Alexander et al. 1965). This taxonomic scheme, a return to that suggested by Coues (1866) nearly 100 years before, remained the standard for the next 30 years.

Most recent authorities have recognized three subspecies in the *cauta* complex: *D. c. cauta*, *D. c. eremita* and *D. c. salvini* (Harrison 1985, 1987b, Howard and Moore 1991, del Hoyo et al. 1992, Simpson and Day 1994, Enticott and Tipling 1997), although the recognition of a fourth subspecies, *D. c. steadi*, was questioned by some (Marchant and Higgins 1990, del Hoyo et al. 1992) and acknowledged by others (Brothers et al. 1997).

Nunn et al. (1996) found that the traditional genus *Diomedea* was polyphyletic (had more than one origin), and that the species within *Diomedea* actually fell within three genera, *Thalassarche* (resurrected from Reichenbach 1850) for the southern mollymawks, *Phoebastria* (for north Pacific albatrosses) and *Diomedea* (the Great Albatrosses). *Diomedea cauta* became *Thalassarche cauta*. The A.O.U. (1997, 1998) adopted the new generic-level nomenclature with respect to *T. cauta* (as well as Nunn et al.'s 1996 suggested taxonomy for the other seven albatross species recorded in the A.O.U. area).

Robertson and Nunn (1998) further found that there were clear phylogenetic and morphological differences to separate the 14 species of albatross into 24 full species. This led to their suggesting the splitting of the Shy Albatross complex into four new species: Chatham Albatross, *Thalassarche eremita*, from the former *D. c. eremita*; Salvin's Albatross, *T. salvini*, from the former *D. c. salvini*; White-capped Albatross, *T. steadi*, from the former *D. c. cauta*; and Shy Albatross (which Robertson and Nunn called "Tasmanian Mollymawk"), *T. cauta*, also from the former *D. c. cauta*. They noted that the four new suggested species from the *cauta* complex are the "most difficult to study" due to the isolation

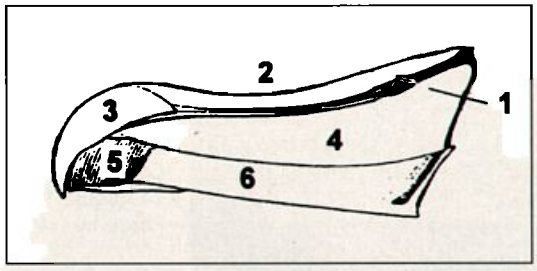

Figure 2: Diagram of an albatross bill. 1) Nostrils; 2) Culminicorn; 3) Maxillary unguis; 4) Latericorn; 5) Manibular unguis; 6) Ramicorn; Drawing from Murphy (1936).

of their breeding sites, and are the most recently described taxa among all albatrosses. This suggested split has been acknowledged by some seabird researchers (Brothers et al. 1998, Croxall and Gales 1998, Gales 1998) and opposed by others (Bourne 1999, Bourne and Warham 1999). It has not been adopted by the A.O.U. (1998). For consistency and ease of reference, I will follow Schodde et al. (1978) and Croxall and Gales (1998) and use "Shy Albatross" to refer to *T. cauta*, and "albatross" rather than "mollymawk" when referring to other (sub)species. When using *T. cauta* in this paper, I am using it in the strict sense to refer only to the taxon formerly known as *Diomedea cauta cauta*.

Throughout this taxonomic flux, the albatross has kept a name—both common (Shy) and scientific (*cauta*, Latin for wary or cautious)—that Gould based on the bird he encountered shying away from the vessel on which he was traveling (Terres 1991). Gould (1865) remarked that "it was most difficult to procure, for it seldom approached our ship sufficiently near for a successful shot." Although some continue into modern times to erroneously report the bird as not following ships (Alexander 1928, Shackleton and Stokes 1968), the name is a misnomer as the bird is a regular ship-follower (Oliver 1930, Serventy et al. 1971, Harrison 1985, 1987b) and is not shy at all (Le Souëf 1895). In fact, the Shy can be "unusually bold" (Barton 1979)—bolder than other albatross species (Richards 1909)—and competes "greedily" for food off fishing boats (del Hoyo et al. 1992; pers. obs.). Indeed, the four North American records of the *cauta/steadi* complex are from close encounters with birds that came to a ship. Le Souëf (1895:415) appears to have coined the name "White-capped Albatross" for the species complex, noting it would be "far more suitable" as the albatross was not shy and the white-capped feature was "very striking."

OUR ENCOUNTER WITH THE BIRD OFF POINT ARENA, CALIFORNIA

The boat *The Tracer* left Bodega Bay at 0545 PDT on a trip designed by Debra Shearwater to explore underbirded areas, and headed north and west into Mendocino County coastal waters. Around 1200 PDT, we stopped and chummed for seabirds at 38°57'N, 123°56'W. The boat was surrounded by about 50 Black-footed Albatrosses, *Phoebastria nigripes*, and numerous Pink-footed Shearwaters, *Puffinus creatopus*, Northern Fulmars, *Fulmarus glacialis*, and Western Gulls, *Larus occidentalis*. A fishing "drag boat" passed by about half a mile away, and minutes later the shout went up from the stern of our boat—"Laysan Albatross! Laysan Albatross!" A large, dark-mantled, light-bodied albatross flew in from the direction of the drag boat. As people were able to better see the bird, a murmur went through the observing crowd that the bird was not, in fact, a Laysan Albatross, *P. immutabilis*. Somebody called out "Shy Albatross!" and pandemonium ensued.

The bird landed in the wake of the boat among the Black-footed Albatrosses and ate bait fish (anchovies) we tossed off the stern, acting aggressively toward other birds competing for the food. It circled the area several times, landed farther away, and finally departed back toward the drag boat. We observed the bird from approximately 1200 to 1235, taking many photographs and capturing video and audio recordings. The bird called several times, a loud *graack* that was captured on several video recorders.

The bird was subsequently reported on 25 September and 4 October 1999 at locations farther south, once off the Sonoma County coast, and once at the Sonoma-Marin County line by the fishing-boat operators who staffed our 24 August boat. It was not seen again by birders attempting to find it (D. Nelson pers. comm.).

Figure 3. Shy Albatross off Point Arena, California, 24 Aug 1999. Photograph by Robert J. Keiffer.

Figure 4. Shy Albatross off Point Arena, California, 24 August 1999. Photograph by Luke W. Cole.

DESCRIPTION

The bird was a large albatross, thick through the neck and bulky in the body, perhaps 20% larger than Black-footed Albatrosses seen nearby, and having a much thicker neck (Fig. 1). The head was white, with a faint gray wash from the cheeks up and across the nape. There was a prominent horizontal rectangular indentation (skull and feathering) around the eye, giving the bird a heavy-browed look. The top of this indentation began just below the top of the bill and ran directly above the eye and back behind the eye. The bottom of the indentation began at the juncture of the maxilla and mandible and ran straight back underneath the eye into the auricular region (Fig.1). The eye was dark, and there was a dark brown or black smudge in the lores. The bill was massive and complex (see Fig. 2). The top of the bill, or culminicorn, was yellow basally, trending quickly to gray-white (Fig. 1, Fig. 3). The base of the culminicorn was edged with a ridge of black skin, which also lined the edge between the nostril tube and the latericorn, or side-plate of the maxilla. The latericorn was gray-white basally, trending toward light yellow distally. The prominent tip of the bill, or maxillary unguis, was yellow. The mandible (ramicorn) appeared to have some orange-yellow basally, then quickly turned to light yellow with what appeared to be a red or dark tip to the lower nail, or mandibular unguis. The gape extended back from the base of the bill in a line in the feathering under the eye and was visible when the bird called. The line of the gape defined the bottom of the horizontal patch around the eye mentioned above.

The breast, belly, undertail, and rump were white. The underwings were white, with a small but noticeable dark mark on the leading edge of the underwing where it joined the body (Fig. 4). There was a narrow dark edging to the white underwing. The upperwing and back were dark gray, trending toward light gray in the upper back. There was a distinct contrast between the dark-gray wings and white body, but the light-gray back smoothly faded into the white hind neck (Fig. 1). The tail was gray, though a lighter gray than the upperwings. The feet were grayish-pink, with lighter pinkish webbing.

On the upper wing, the outer five or so primaries had white shafts and some white in their outer webbing. The bird was molting its flight feathers on both wings. The primary molt appeared to be symmetrical, with the outer four primaries being old, the inner primaries fresh, and a gap or missing feather in between (Fig. 3; B. McKee pers. comm.). It also had a prominent notch in the secondaries, and another, larger notch among the humerals.

DIAGNOSIS

The Point Arena bird's clean white underwings and black pre-axillary mark narrow its identity to one of the southern mollymawks of the genus *Thalassarche*, which used to comprise the species-group then known as *Diomedea cauta*. Below, I discuss its specific identification within that genus, after ruling out other possibilities among albatrosses. The most common albatross off northern California, the Black-footed, is easily distinguished by its dark overall coloring. The Point Arena bird's large size and pure-white underwings with narrow black border eliminate the superficially similar Layan Albatross, seen regularly in winter off California. The other "expected" albatross of the northern Pacific, Short-tailed, *Phoebastria albatrus*, is easily distinguished in all ages by bill size and color, and mantle and head coloration.

Even without the diagnostic dark pre-axillary mark, it is also easy to rule out other albatross species. The combination of the bird's white head, gray mantle and white body, as well as its bill size and color, eliminate the great albatrosses, *Diomedea* spp. (all taxonomy following Nunn et al. 1996 and Robertson and Nunn 1998). Its clean white head and bill coloration eliminate the Black-browed, *Thalassarche melanophrys*; Gray-headed, *T. chrysostoma*; Yellow-nosed, *T. chlororhynchos*, and other *Thalassarche* spp. outside the former *Diomedea cauta* species-group; and the Waved Albatross, *Phoebastria*

TABLE 1: MEASUREMENTS OF LIVE *THALASSARCHE CAUTA* AND *THALASSARCHE STEADI*
Taken by C.J.R. Robertson (all measurements in mm)

Albatross Island, Australia (*T. cauta*)			
	wing	m	561 (535-590)[a]
		f	553 (515-578)
	culmen	m	130.64 (121.8-139.3)
		f	127.16 (121.6-132.3)
	tarsus	m	91.1 (83.9-97.7)
		f	87.8 (82.9-92.3)
Disappointment Island (*Auckland Islands*), New Zealand (*T. steadi*)			
	wing	m	604 (590-620)
		f	596 (585-625)
	culmen	m	134.9 (129-141.8)
		f	130.6 (124.4-135.6)
	tarsus	m	96.0 (91-103.7)
		f	94.1 (88-101)

All samples for each sex, both species are n=30-35.
[a]Only one Albatross Island bird had a wing greater than 580 mm.
Source: C.J.R. Robertson, unpubl. data.
N.B.: Earlier subsets of these data (49 birds) were published in Marchant and Higgins (1990:310).

irrorata. The sooty albatrosses have all dark bodies.

The only birds with the dark pre-axillary mark shown by the Point Arena bird are four *Thalassarche* mollymawks generally considered subspecies of *Diomedea cauta*. The Point Arena bird's white head eliminates two members of the Shy Albatross complex, the Salvin's and Chatham Albatrosses, which both have gray heads in all plumages. Salvin's and Chatham Albatrosses also have more dark on the undersurface of the outer primaries than shown by the Point Arena bird (Marchant and Higgins 1990, del Hoyo et al. 1992). Chatham Albatross has a smaller, bright yellow bill, unlike the Point Arena bird (Marchant and Higgins 1990). Our bird is thus identifiable as part of the species pair *T. cauta/T. steadi*, which are often inseparable at sea (R. White pers. comm.).

THALASSARCHE CAUTA VERSUS *THALASSARCHE STEADI*

Examining several characteristics of the Point Arena bird, I believe it is identifiable as a Shy Albatross, *sensu stricto*. Field guides, both popular (Slater 1970, Simpson and Day 1994) and seabird-specific (Harrison 1985, 1987b), do not illustrate differences between *T. cauta* and the similar *T. steadi*. This omission is probably a result of *steadi's* ambiguous taxonomic existence; not all believe that *T. steadi* is a valid species, or even a subspecies. Marchant and Higgins (1990), for example, note that *T. steadi* is "doubtfully separable from *cauta*." Based on the data reported here, however, I follow Robertson and Nunn's (1998) suggested taxonomy to focus attention on the at-sea identification and distribution of each taxon, although I am aware that this taxonomy is controversial.

Because there are no published works delineating how to separate *T. cauta* from *T. steadi*, I set forth several hypotheses by Australian and New Zealand biologists suggest of how these birds may be differentiated, in the field and in hand, although further work is clearly needed. The following discussion is based on communications from Chris J. R. Robertson of the New Zealand Department of Conservation and Tim Reid of the Tasmanian Department of Parks and Wildlife, two biologists with significant field and museum experience with the Shy Albatross complex (e.g., Brothers et al. 1997, Robertson and Nunn 1998). I also conferred with Gary Nunn, whose studies (along with Robertson) of the mitochondrial DNA of albatrosses have been instrumental in current scientific understanding of the taxonomy of the *Thalassarche* complex and who also has field experience with the Shy Albatross complex.

There are differences between the taxa—of varying degrees of reliability—in bill color, cheek and neck color, and size. There are also differences, not useful in the field, in DNA and in timing of breeding. Knowledge of the *cauta/steadi* complex has evolved since Marchant and Higgins (1990) wrote that separation of *steadi* and *cauta* in the field is "not possible." It may now be characterized as "not impossible," although it is highly problematic. Tim Reid (pers. comm.), for one, does not believe that any feature, either singly or in combination, is reliable, or that *cauta* and *steadi* can be told apart at sea.

Bill Coloration and Shape. In adult birds, there is a clear difference in the coloration of the culminicorn between New Zealand birds (*T. steadi*) and Australian birds (*T. cauta*; C. J. R. Robertson, G. Nunn pers. comm.). Adults of the Australian *cauta* "all have the same density of yellow in the nail, unguis, and base of the culmen plate joined between on the culmen plate by a variable intensity of pale lemon yellow" (C. J. R. Robertson pers. comm.). Adults of the New Zealand *steadi*, by contrast, have yellow in the nail and unguis only; the base of the culminicorn is horn-colored (C. J. R. Robertson, G. Nunn pers. comm.). This feature may remain obvious in dry museum skins (C. J. R. Robertson pers. comm.). The bill coloration field mark is not described in the literature. Indeed, many works with detailed descriptions of the bird do not even mention yellow in the culminicorn of *cauta*. For example, Mathews (1912) called the bill "bluish horn," although this bird was "collected off the Australian coast" and thus could be *T. steadi* (Mathews 1921). He later described adult bill color as "the culminicorn, and the ramus of the ramicorn is light horn; the latericorn, the cutting-edge, and the next two-thirds of the ramicorn are grey-blue" (Mathews 1934:812). Gould (1841, 1865) is an exception. In his type description noted that the bill was "light vinous-gray or blueish horn colour, except on the culmen, where it is more yellow, particularly at the base." Marchant and Higgins (1990) illustrated the head of *T. cauta* (as *D. c. cauta*) and showed the yellow in the base of the culminicorn, but did not include an illustration of *T. steadi*. Serventy et al. (1971) note that Australian breeding birds have a yellow culmen, but were not more specific.

The color of the base of the culminicorn is perhaps the only definitive characteristic observable in the field (C. J. R. Robertson, G. Nunn, pers. comm.). Tim Reid (pers. comm.) remains skeptical of this field mark, however, believing there to be some overlap in bill coloration between birds exhibiting plumage characteristics of *T. steadi* and *T. cauta* (see below).

A second bill difference may be helpful in the field. According to

TABLE 2: PUBLISHED MEASUREMENTS OF *T. CAUTA* AND *T. STEADI*

Source	Species/Location	Number	Sex	Wing	Culmen	Tarsus
Hedd et al.(1998)	*D.c. cauta sensu lato*/	13	male	592 mm (552-720)	137.8 (130.9-146.5)	91.1 (84.4-95.6)
	Aust. waters	29	female	585 mm (540-696)	132.8 (125.8-138.0)	88.6 (82.6-94.9)
Serventy et al (1971)	*D.c.cauta*/Aust.	unknown	combined	556 mm (523-585)	128 (117-135)	88 (80-95)
Murphy (1930)	unk./Aust. & N.Z.	9	combined	564.8 mm (552-579)	134.1 (129-140)	92.4 (89-96)
Mathews (1912)	"off Aust. coast"	1	ad. male	590 mm	137	86
Le Souëf (1907)	*D.c. cauta*/Albatross Island	1	unknown	22 inches [= 559 mm]	6 inches [= 152 mm]	3.25 inches [= 83 mm]
Coues (1866)	unknown	1	unknown	22.0 inches [= 559 mm]	4.75 inches [= 121 mm]	3.25 inches [= 82.5 mm]
Gould (1841)	Aust. (type specimen)	1	female	21.5 inches [= 546 mm]	4.5 inches [= 114 mm]	3 inches [= 76 mm]

Note: Gould and Coues's measurements for culmen and tarsi fall below the lowest value in Table 1 for *cauta* (or *steadi*) culmen and tarsi, while Le Souef's culmen measurement is larger than any culmen ever reported and his tarsus measurement lower than any in Table 1. These data are probably an artifact of different measuring methodologies among different generations of ornithologists, which can result in different measurements even for the same bird (see, e.g., Hedd et al. 1998). Additionally, it is unclear from the literature if Coues's measurements were of Gould's type specimen (although they differ from Gould's measurements), or of a second bird.

Reid (pers. comm.) the mandibular unguis of adult *T. steadi* remains dark gray to black (and thus contrasts with the sides of the bill to form a dark tip to the mandible), while most (but not all) adult *T. cauta* have the same gray as the sides of the bill with a distal yellow wash adjacent to the yellow of the tip; this field mark is not definitive, however, because some adult *T. cauta* with dark gray bill tips (including the mandibular unguis) have been observed feeding young on the breeding grounds at Albatross Island (Johnstone et al. 1975, Bartle 1975, T. Reid pers. obs.). Confusing matters, subadults of both taxa have a dark gray mandibular unguis (and lessening amounts of dark gray on the maxillary unguis). In terms of bill shape and structure, Robertson (pers. comm.) also reports a "less definitive feature is that the base of the culmen in *steadi* tends to be straighter sided and squarer topped in both skins and live birds in the hand."

TABLE 3. MEASUREMENTS OF FIVE *DIOMEDEA CAUTA CAUTA* COLLECTED OFF AFRICA
(all measurements in millimeters)

Collected	Wing	Culmen	Tarsus	Present location
South Africa (1896)	562	136	89	British Museum
Tamatave, Madagascar (11 Nov 1954)	591	134	96	Paris
Farafangana, Madagascar (4 Sep 1963)	580	130	96	Paris
Reunion (17 Sep 1948)	590	129	96	Paris
Reunion (20 Aug 1890)	580	127	95	Brussels

Source: Bourne 1977.
N.B.: Salvih s original reported measurements for the South African bird were wing 22 inches [=559 mm], culmen 5.4 inches [=137 mm], and tarsus 3.5 inches [=89 mm]. Mathews 1912.

Cheek and neck color. According to Marchant and Higgins (1990), *T. cauta* has a gray wash to the cheeks and ear coverts so that a fairly distinct white cap is formed. Paradoxically, on *T. steadi* (the "White-capped" Albatross) the gray wash is faint or absent, so that the whole head looks whiter, "with a less distinctly capped impression" (T. Reid, pers. comm.). Reid also remains skeptical of these field marks, having observed birds with yellow culminicorns and whiter heads, and dark culminicorns with grayer heads.

Size. Although this difference is too subtle to be useful in the field, the Australian *cauta* are smaller as a group than the New Zealand *steadi*, with smaller average culmen, tarsi, and wing chord measurements (Table 1). The defining characteristic appears to be wing size, in which Robertson and Nunn (1998) reported that there is no overlap between *cauta* and *steadi*. However, this conclusion may be premature (Table 1; *cf.* Table 2).

Using the differential size of wing chords of *T. cauta* and *T. steadi* to differentiate the birds as separate taxa is not without complications. In terms of methodology, the measurement of birds is an inexact science, particularly live birds. It is an accepted fact that different measurers get different measurements (Hedd et al. 1998). Comparing measurements of two different taxa, by different observers, may either underestimate or exaggerate the differences between them. Data sets of measurements by a single observer of two populations (e.g., Table 1) are important because the comparison groups are consistent. Even with these data, however, differences between the largest *T. cauta* and smallest *T. steadi* in measurements of females is a slight 7 mm (578 vs. 585 mm). There is no difference between the largest *cauta* male and the smallest *steadi* male (590 mm).

The problems extend beyond methodology, however. Examining unpublished data indicates that there is overlap between the two taxa in wing size. Thus far the only systematic comparisons are based on birds from Albatross Island (north of Tasmania, Australia) and Disappointment Island (Auckland Islands, New Zealand), and it appears that the three Australian populations (Albatross Island, the Mewstone, and Pedra Branca) may have size differences among them, with some specimens of the Mewstone birds overlapping with females from New Zealand in measurements of wings (C. J. R. Robertson pers. comm.). Tim Reid (pers. comm.) reports that in measurements (by a single investigator) of live birds at the nesting ground, birds from the Mewstone have significantly longer wings (range = 554–595 mm, n = 20) than those from Albatross Island (range = 515–590 mm, n = 36). These data reveal that there are overlaps between *steadi* and at least some populations of *cauta*. There are no measurements as yet from the colony on Pedra Branca.

To further cloud the picture, Reid (pers. comm.) reports that in the study undertaken by Hedd et al. (1998), there were two distinct groupings of albatross wing lengths, one at 540–606 mm (n = 42), the other at 640–720 mm (n = 27; see also Hedd et al. 1998:Table 1). These ranges of wing measurements indicate birds significantly larger than those reported in Table 1, where *cauta* ranges from 515–590 mm and *steadi* from 585–620 mm. The hypothesis is that the grouping with smaller measurements represents *cauta* and the grouping with larger measurements represents *steadi*, although Reid (pers. comm.) reports that one of the birds from the grouping with larger measurements was banded as a chick on the Mewstone, and therefore presumably is *cauta*.

To sow even more confusion, ongoing genetic work and specimen research indicates that *T. cauta, sensu stricto,* may actually be more than one taxon. The 250 pairs of Shy Albatrosses breeding on Pedra Branca, south of Tasmania, may be genetically distinct from other Shy Albatrosses breeding elsewhere off Tasmania, as well as from *T. steadi*.

Perhaps the one generalization that can be made is that those specimens or live birds having measurements in the lower range are *cauta*, probably from Albatross Island, while those at the high end of the spectrum are probably *steadi*. Those in the mid-range may not be diagnosable by wing measurements. More research is clearly needed in this complex.

Additionally, culmen and tarsus measurements overlap and are thus useful only in conjunction with wing measurements. Reid (pers. comm.) reports specimens with culmen measurements exceeding all measurements of both taxa in Table 1 that fit comfortably within the *cauta* wing measurement grouping.

DNA. Robertson and Nunn (1998) reported, although without data, that the results of mitochondrial DNA cytochrome-b gene sequences supports the separation of *T. cauta* and *T. steadi* into separate species, but their analysis also relies on "clearly unique morphological diagnosable features" such as wing size. The latter may not be supported given the variation in *T. cauta* measurements from Albatross Island and the Mewstone reported above. As Robertson and Nunn (1998) noted, aside from wing morphometrics, "other differences seem less clear-cut" between *cauta* and *steadi*.

Breeding period. There is at least a two-month difference in timing between the egg-laying periods of the two taxa (Robertson and Nunn 1998). There is also a difference in nesting cycle duration. Of the two, *T. cauta* has the shorter nesting-cycle and breeds earlier, breeding in the austral spring, laying eggs from mid-September and hatching in late November and early December (Le Souëf 1895, Robertson and van Tets 1982), with a mean incubation period of 72 days (68–75, n = 15; Robertson and van Tets 1982). The chicks fledge in the austral autumn, late March and early April (Marchant and Higgins 1990, Hedd et al. 1998). The entire process thus lasts about eight months. *T. steadi* takes longer to complete nesting (10 months). It begins in the late austral spring (late November) and fledges chicks early the next spring (August; Robertson in Powlesland 1985, Marchant and Higgins 1990, Brothers et al. 1997).

Conclusion. Despite identification difficulties posed by the *cauta/steadi* complex, the Point Arena bird is identifiable as a Shy Albatross, *T. cauta, sensu stricto,* based on the yellow in the base of the culminicorn,

as well as its cheek and neck coloring. After comparing photos of the Point Arena bird with his photos of *T. cauta* nesting at Albatross Island, Gary Nunn (pers. comm.) concurred with this identification. After a review of photos, Tim Reid (pers. comm.) concludes that although he is not convinced it is *cauta* because of the unreliability of field marks, the bird shows "all of the characteristics of a classic Shy Albatross, with quite grey cheeks giving a capped appearance, a yellow base to the culminicorn and the very little (or no) grey at the tip of the lower mandible." The Point Arena bird's bill color and lack of a partial collar are consistent with adult plumage, though the apparent dark in the mandibular unguis may indicate a young adult. As the sexes are outwardly alike (Marchant and Higgins 1990), it is impossible to know the bird's sex. The call is consistent with MacLean's (1993) and Sinclair's (1984) description of Shy Albatross call as *waak*, which Sinclair describes as "a loud, raucous call." The wing molt—old outer primaries, new inner ones, with a missing feather in between—suggests serially descendant molt, as is expected in the Shy Albatross (Melville 1991).

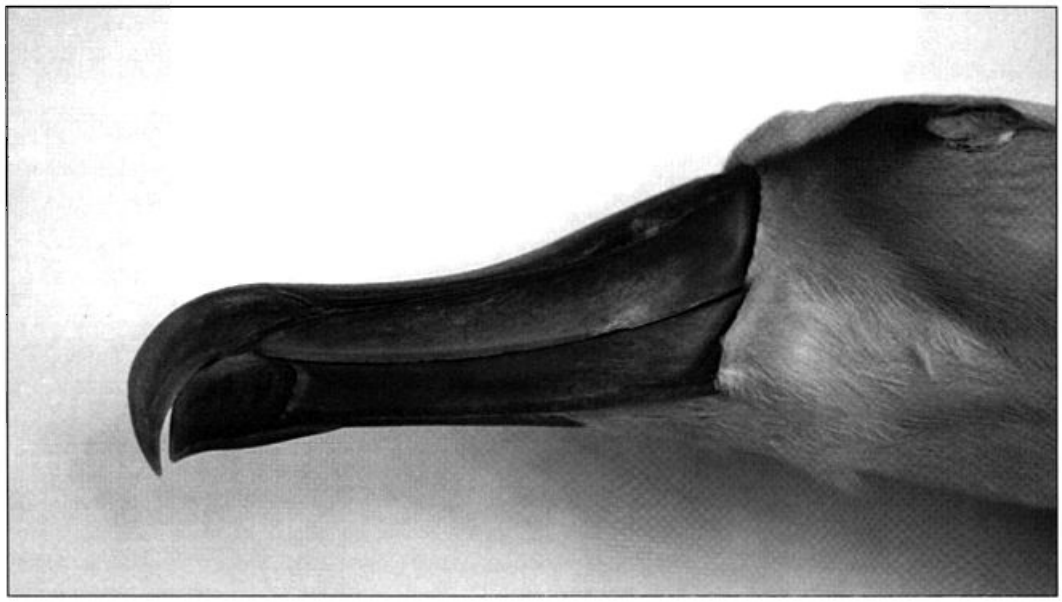

Figure 5. Bill of Shy Albatross collected off Washington State, 1 September 1951 (USNM 420017).

DISTRIBUTION

The Shy Albatross breeds only in Australia, with nesting colonies on Albatross Island off the northwest tip of Tasmania, and on two rocky islands, the Mewstone and Pedra Branca, off its south coast (Croxall and Gales 1998, Trounson and Trounson 1989). Once breeding age is attained, Shy Albatross ranges less widely than do young birds (Brothers et al. 1997, Croxall and Gales 1998).

Band recoveries for birds banded on Albatross Island and the Mewstone show that the Shy Albatross ranges up both coasts of Australia to about 25°S (Brothers et al. 1997). In Victoria and Tasmanian waters it is perhaps the most common albatross (Serventy et al. 1971, Barton 1979), and it is "abundant" off the coast of New South Wales. However, the large numbers of *cauta*-type albatrosses and the measurements of *cauta*-type albatrosses taken in Eastern Australian waters indicate that some on this coast are *T. steadi* from New Zealand (Marchant and Higgins 1990, Brothers et al. 1997, T. Reid pers. comm.). On the other hand, Croxall and Gales (1998:54) reported that *T. steadi* "appears to be confined to New Zealand seas." *T. cauta* from the Mewstone have also been found off New Zealand (Marchant and Higgins 1990). The White-capped Albatross, *T. steadi*, breeds on Disappointment Island in the Auckland Islands group south of New Zealand.

Farther from the breeding grounds, the distribution of *T. cauta* is obscure and is complicated by the taxonomic evolution of the four-member Shy Albatross complex. Most works do not specify which subspecies of the former *Diomedea cauta* complex is being referred to and many at-sea reports are simply of "Shy Albatross" (Tickell 1995). Whereas, as mentioned above, two of the taxa—Salvin's, *T. salvini*, and Chatham, *T. eremita*—can be distinguished in the field from *T. cauta* in adult plumage, separating immatures at sea is difficult (Harrison 1985); indeed, seabird experts disagree on the identity of published photographs of birds of this complex (see, e.g., Harrison 1984, Bourne 1984). Further, even in adult plumage, the White-capped Albatross is only separated from the Shy Albatross by subtle and perhaps not definitive field marks, as discussed above. It thus is an understatement to say that the bird's "migratory strategy and route [are] not well known" (del Hoyo et al. 1992). However, given the suggested split of *T. cauta* and *T. steadi*, and the question of each taxon's dispersal globally, I here focus on records of both taxa from areas away from the breeding grounds.

Even before the paper by Robertson and Nunn (1998), some authors treated Shy/White-capped complex [= *Diomedea cauta cauta*] as different from Salvin's and Chatham Albatrosses, and provided distributional information on this basis. From such sources, it is possible to determine that off the breeding grounds, the Shy/White-capped Albatross is circumpolar and ranges widely at sea in the southern Pacific, Atlantic, and Indian Oceans, north to about 25°S, but parimarily south of 40°S (Harrison 1985, 1987a,b, Tickell 1995). South of Australia and New Zealand, it is found in northern sub-Antarctic waters to at least 52°S (Bretagnolle and Thomas 1987). Both the Shy and White-capped Albatrosses are found in southern African and South American waters.

Africa. Based on band recoveries and specimen measurements, *T. cauta* is certainly and *T. steadi* is almost certainly found off the coasts of Africa. Harrison (1985) reported that "present evidence suggests that *D. c. cauta* wanders west across the Indian Ocean to Cape seas." References to "Shy Albatross" before the proposed split report it to be a "common visitor" to the coasts of South Africa (Sinclair 1984), recorded throughout the year (Liversidge 1959) but achieving the greatest concentrations in the austral winter (August; Shackleton and Stokes 1968, Brooke and Sinclair 1978). It is found as far south as 44°S and as far west as 8°15' E (Van Oordt and Kruijt 1953, Summerhayes et al. 1974, Clark 1987). Dead birds are rarely but regularly found washed ashore on South African beaches (n = 1–5 annually; Cooper 1978, Avery 1979, 1984). Young Shy Albatrosses, *T. cauta*, from the Mewstone occur fairly commonly off South Africa; indeed, four of eight (50%) band recoveries from immature birds banded at the Mewstone, and three of seven (43%) band recoveries from first-year birds banded there, were from South Africa (Brothers et al. 1997). Two birds collected off Natal and Zululand, South Africa, in the 1950s (now in the Durban Museum collection) are described as *D. c. cauta* by Clancey (1978) and, although unsexed, are attributable by wing measurement

(564 mm and 572 mm; Clancey 1978) to *T. cauta*. Adult *cauta/steadi*-type birds are also found off South Africa (Shaughnessy and Frost 1976), but whether they are Mewstone birds remaining there, or *T. steadi* is not yet clear (T. Reid pers. comm.).

T steadi occurs in African waters, based on one presumably definitive specimen from Kenya and a small number of other specimens that are probably *T. steadi*. Bourne's (1977) examination and measurement of five skins in European collections of *cauta/steadi* collected off southeastern Africa included two birds that are generally larger than *T. cauta* and thus probably *T. steadi*, as shown in comparison of the measurements (*cf.* Table 1, Table 3). Incidentally, the South African bird, taken off the Cape of Good Hope in 1896, was first described as a new species, *Thalassogeron layardi*, by Salvin (1896), then later thought to be a Salvin's Albatross (Bourne 1977). Bourne (1977) believed it to be a young *cauta/steadi*; if correct, based on its measurements, it would be *T. cauta*, although its measurements also fit within the range of *T. salvini* (Marchant and Higgins 1990:310).

Aside from these specimens, there are also band recoveries from South African waters of at least three birds banded at sea off New Zealand during the breeding season and thus presumably *T. steadi*. However, *T. cauta* does occur off New Zealand and thus the identity of these birds is not definitive (Brothers et al. 1997). Although White (1973) hypothesizes that they were probably subadult when banded, at least two of the individuals were adults when recovered (5 years 8 months and 11 years 8 months between banding and recovery, respectively, White 1973).

There is some confusion as to which taxa of the Shy Albatross complex (*sensu lato*) occurs off South Africa (Brothers et al. 1997)—early reports claimed only *D.c. salvini* [=*T. salvini*] occurred (Van Oordt and Kruijt 1953). Then several researchers and observers concluded that both *D.c. salvini* and *D. c. cauta* [=*T. cauta/steadi*] were present (White 1973, Brooke and Sinclair 1978 (nominate race "commoner than *salvini*"), Harrison 1984), while others argued that only the *D.c. cauta* occurred (Bourne 1977, 1982, Clancey 1978). This confusion is undoubtedly exacerbated by the fact that most of the band recoveries of *T cauta* from South African waters have been from immature and first-year birds, which can have extensive gray in their heads, as does *T. salvini* (Brothers et al. 1997).

Outside of South African waters, the *cauta/steadi* complex is found off both the east and west coast of Africa. Along the southwestern coast of Africa *T. cauta/steadi* is found off Namibia and regularly north at least to Angola, around 15°S (Summerhayes et al. 1974, Sinclair 1984, Harrison 1985, 1987a, b, Tickell 1995). In this region, it is more common in the austral winter (August-October) than in summer (February), although surveys have found concentrations of up to 100 in autumn, too: March, April, and May (Summerhayes et al. 1974).

Off the east coast of Africa, the *cauta/steadi* complex ranges much farther north, being "possibly regular" in fall in the Pemba Channel off of northern Tanzania (Zimmerman et al. 1996), at approximately 5°S latitude A near-adult female described as *Diomedea cauta cauta* caught in fishing nets off Mombasa at 4°S, on 14 November 1986 provided a first record for Kenya (Cunningham-van Someren 1988). The specimen is now in the collection of the Department of Ornithology, National Museums of Kenya (J. Githaiga-Mwicigi pers. comm.). Based on its measurements—culmen = 136 mm, wing = 610 mm (reported as "61 mm" in error in Cunningham-van Someren 1988), tarsus = 93 mm—the Kenya bird presumably is *T. steadi*.

There is one report of *Diomedea cauta*, possibly a Salvin's (see below), off the coast of Somalia, at 11°50'N latitude (Meeth and Meeth 1988) To date, only *cauta/steadi* of the Shy Albatross complex is confirmed as occurring in East African waters (J. Githaiga-Mwicigi pers. comm) Larry B. Spear (pers. comm.) reported seeing a few *cauta/steadi* wintering off Madagascar, and Enticott and Tipling (1997) mentioned a record of *D. cauta* from Mauritius but provided no details.

South America. The status of the Shy Albatross off South America is similarly murky. Harrison (1985, 1987a,b) reported that the distribution of *D. c. cauta* [= *T. cauta/steadi*] in the southern Pacific ranges as far north as 25–30°S off South America. Harrison (1985) noted that some birds move west across the Indian Ocean and then across the southern Atlantic to coasts of eastern South America, while smaller numbers appear to wander *east* toward the west coast of South America. Tickell (1995) showed *D. c. cauta* ranging up the coast of Chile and Peru from 50°S to 10°S, and del Hoyo et al. (1992) stated *D. c. cauta* occurs commonly off South America. These assessments are not supported by field researchers. Earlier, Murphy (1936:526) stated that only *D. c. salvini* had "thus far been recorded with certainty in South American waters." Slipp (1952) noted that a 1951 record off Washington state (see below) was the first known occurrence of *D. c. cauta* in the waters of the Americas. Larry B. Spear (pers. comm.), in hundreds of hours of surveys in the Peru current, has never seen a *cauta/steadi*, although *T. salvini* winters there in large numbers.

Although *T. salvini* is common in Chile and there are photos and reports of Chatham Albatross, *T. eremita*, in Chilean and Peruvian waters (Haase 1994, A. Jaramillo pers. comm.), A. Jaramillo, P. Burke and D. Beadle (in prep.) do not include the Shy Albatross [=*T. cauta/T. steadi*] in their forthcoming *Field Guide to the Birds of Chile*, as there are no known specimens or photographic records from that country. Howell and Webb will also omit the species in their forthcoming work on Chilean birds (S. N. G. Howell pers. comm.). The *cauta/steadi* complex has not been recorded in the Cape Horn area or Straits of Magellan either (Harrison 1985).

Although not mentioned in Argentina in field guides (e.g., Narosky and Yzurieta 1987), the *cauta/steadi* complex does occur rarely in the South Atlantic. In the waters of the Falkland Islands, *cauta/steadi* is a regular but rare visitor in late (austral) summer, autumn and early winter (R. White pers. comm.). Woods (1988) reported eight sightings of *D. c. cauta* in waters off the Falkland Islands, three in late March 1987, one in April 1986, and four between June and August 1984. The "Seabirds at Sea Team" (whose at-sea surveys covered 50,000 km over an 18-month period starting February 1998 and recorded over 250,000 seabirds) observed a total of 16 "Shy" [= *Diomedea cauta* complex] albatrosses off the Falklands in 1998, 2 in February, 2 in March, 9 in April, 1 in May and 2 in July. Most birds were immatures, several showing characteristics of Salvin's Albatross and several possible *cauta/steadi*; one record is of an adult of the *cauta/steadi* type (R. White and R. Woods, pers. comm.). There is a specimen described as an adult *D. c. cauta* taken off South Georgia on 16 November 1926 in the Liverpool Museum (Bourne 1977, Prince and Croxall 1983). There is one record of *Diomedea cauta* for Brazil, a young female found dead on a beach in Rio Grande do Sul State (30° 55'S, 50° 45'W), extreme south Brazil, in April 1990 (Petry et al. 1991). The specimen is no. 36922 in the collection of the Museu Nacional, Rio de Janeiro, Brazil. Petry et al. (1991) could not determine the subspecies of *D. cauta* and felt it might it be *D. c. salvini* based on underwing pattern. On the basis of its measurements—wing = 580 mm, tarsus = 95.7 mm, culmen = 129 mm (Table 1; cf. measurement for *T. salvini* in Bourne 1977, Marchant and Higgins 1990)—the bird could be either *T. salvini* or *T. steadi*, and is within millimeters of the upper measurements for female *T. cauta*.

At this point, it is unclear whether or not it is *cauta* or *steadi*, or both, which occur in small numbers off Atlantic South America. Birds in the *cauta/steadi* complex have shown a propensity for wandering to the Northern Hemisphere.

NORTHERN HEMISPHERE RECORDS OF SHY ALBATROSS RE-EXAMINED

In addition to the Point Arena sighting, there are five more northern hemisphere records of the Shy Albatross complex. The Somali bird mentioned above was not identified to species, but the other four were report-

ed as the nominate *Diomedea cauta cauta*: one record from the Gulf of Aqaba (Egypt and Israel) and one from Oregon and two from Washington state. A sight report of Salvin's Albatross from California was not accepted by the California Bird Records Committee (Rottenborn and Morlan 2000). Given the suggested split of *D. c. cauta* into Shy Albatross, *T. cauta*, and White-capped Albatross, *T. steadi*, all of these records must be re-examined to determine their taxa. Fortunately, two of the five records are represented by specimens and two more were extensively photographed. In undertaking this re-examination, I focused on the color of the culminicorn, perhaps the only reliable field mark for separating the taxa, as well as wing, culmen, and tarsus measurements in the two available specimens. In the scope of my research, I examined one of the two extant specimens from the Northern Hemisphere. It appears that two records cannot be identified to taxon—one is possibly *T. salvini* or *T. eremita* (Somalia) and one clearly *T. cauta/steadi* (Oregon). Of the remainder, one is *T. steadi* (Washington 1951), and the other two *T. cauta* (Israel/Egypt and Washington 2000). Thus, both *cauta* and *steadi* have occurred in the Northern Hemisphere.

Washington, 1951. The oldest record from the Northern Hemisphere is from Washington state. This bird, reported as *Diomedea cauta cauta*, was an adult female collected on 1 September 1951 by J.W. Slipp, 65 km west of the Quillayute River, Clallam County, Washington (Slipp 1952). This bird—the only specimen from North America—appears to be a White-capped Albatross, *Thalassarche steadi*, which would represent a new taxon for North America (A.O.U. 1998) and the first record of *T. steadi* for the Northern Hemisphere. I base the identification of the bird on its bill coloration from accounts at the time the bird was collected (and examination of the specimen), and on wing, bill, and tarsus measurements.

Bill. After examining the bird in hand, Slipp (1952) wrote that the culminicorn (and the rest of the bill) was "generally light gray with a slight yellowish tinge," with a "rich corn yellow" nail. After examining the specimen (USNM 420017; Fig. 5), I confirmed Slipp's observation: the culminicorn is a grayish horn color from the base to the point where the bill curves downward. From there to the tip of the bill it is yellow with a streak of the grayish horn. The lack of distinct yellow in the base of the culminicorn indicates *T. steadi*. Measurements confirm this identification. Slipp measured the culmen at 136 mm. This is larger than any culmen measurements of a female *T. cauta* or *T. steadi* in the limited data available (Table 1), but the larger culmen also points to *T. steadi*. The largest culmen among *T. cauta* females was 132.3 mm (mean = 127.16 mm, n = ±30); the largest among *T. steadi* females was 135.6 mm (mean = 130.6 mm, n = ±30; C. J. R. Robertson unpubl. data).

Wing. Slipp measured the wing chord at 584 mm, and James Dean of the U.S. National Museum remeasured it at 586 mm in July 2000, which also indicates *T. steadi*. The largest female *T. cauta* measurement is 578 mm (mean = 553 mm, n = ±30), whereas *T. steadi* ranges from 585–625 mm (Table 1), although Hedd et al. (1998) reported female wing chord measurements, presumably from *steadi*, up to 696 mm (Table 2). While the measurements of the Washington bird were taken from a "thoroughly dried skin" (Slipp 1952), I believe they are comparable to the measurements of live birds (Table 1). There are also potentially larger *cauta* than those presented in Table 1 breeding at the Mewstone (see above).

Tarsus. Slipp measured the tarsus at 92 mm. Although the tarsus measurement is in a small zone of overlap between *T. cauta* (82.9–92.3 mm, n = ±30) and *T. steadi* (88–101 mm, n = ±30), it is at the uppermost bound of measurements for *cauta* and well within those for *steadi*. When taken with the wing and culmen measurements this measurement, too, points to *T. steadi*.

Thus, based on the combination of field marks and measurements, the 1951 Washington bird appears to be identifiable as *T. steadi*. C. J. R. Robertson (pers. comm.) independently reached this conclusion based on his research. The presence of the specimen at the U.S. National Museum would allow DNA testing to support this identification.

Oregon, 1996. The second North American record of the *cauta/steadi* complex was a bird well-photographed over the north end of Heceta Bank, 40 km west of Yachats, Lincoln County, Oregon, 5 October 1996 (Hunter and Bailey 1997, 1998). The bird appeared to observers to be in transition from juvenal to subadult plumage (Hunter and Bailey 1997). Hunter and Bailey (1997) provide the following description of the relevant features:

"The photos clearly show a light gray wash on the sides of the lower neck, which, to our knowledge, was not observed by anyone in the field. The bill is large, and nearly featureless gray to gray-green, with a complex of dusky and yellow at the tip, and a narrow black line at the base of the upper mandible. The brightest yellow of the bill is confined primarily to the cutting edge, especially near the tip of the upper mandible, while the upper and lower extents of the tip show dusky smudges."

Matt Hunter (pers. comm.) also described the bill color as "sort of dishwater greenish gray, with a tip of mixed yellow and extensive dusky." Hunter noted that the bill color was between that illustrated for immatures and adults in Harrison (1985) and better matched the photo labeled "subadult" in Harper and Kinsky (1978:21); however, the subadult in Harper and Kinsky has already lost all its gray on the neck and has a bill color indicating a more mature bird compared to the Oregon bird: the bill of the bird in the Harper and Kinsky photo being quite frosty white/gray versus the duller green/gray of the Oregon bird (M. Hunter pers. comm.). Therefore, on present knowledge, it appears that the Oregon bird cannot be identified to taxon as the potential field mark of culminicorn coloration does not emerge until adulthood Some have suggested that this bird is the same individual as the 1999 California record and the 2000 Washington record.

Washington, 2000. The most recent record is also from Washington state: on 22 January 2000, a pelagic birding trip organized by Terry Wahl encountered a *cauta/steadi*-type albatross at 46° 54' N and 124° 54' W off Westport, Grays Harbor County, Washington (B. Tweit, R Shaw pers. comm.). Photographs I have examined (Fig. 6) show the diagnostic features of the *cauta/steadi* complex: dark gray-black mantle, clean white underparts, clean white underwings with a thin black edge and a dark spot at point where the leading edge of the wing meets the body, and a relatively clean white head with a faint gray wash to the nape and cheeks. The bird was observed for about 25 minutes as it fed on chum and flew short distances near the boat. Both Laysan and Black-footed Albatrosses were also present for comparison. Bill Tweit (pers. comm) supplied the following description:

"A large, white bodied albatross. First seen in flight, where the dark brown upperwings grading into a grayish back, sharply contrasting white rump and dark gray rectrices made it clear we were looking at a mollymawk and not a Laysan. White neck also contrasted pretty cleanly with gray back. Upper surface of the outer primaries showed a small white flash. As it banked, I could see the underwing pattern very clearly, with narrow black outlining brilliant white underwings and a circular black dot at the juncture of the forewing and the body.... As it landed near the stern, I got my first good look at the details of the head and beak coloration. The massive beak was a greenish-yellow in tone, with a lighter stripe on the ridge of the upper mandible, and a contrasting bright yellow-orange tip. The iris was dark, accentuated by a darkish line over it and a strong gray smudge behind it. The crown was bright white, while the face and the nape were dusted with grayish that had some hints of yellow-brown. Legs and feet pinkish, darker at the webs Size and shape contrasts with nearby Black-footed and Laysan Albatross were obvious. This was clearly a bigger bird, seemingly 20% or more The chest appeared much more massive in flight, and the beak was much thicker, particularly at the base."

Observers did not closely note the color of the culminicorn, but from the photos it appears to be yellowish, indicating the bird is *T cauta*, a first for Washington State. This identification is also indicated

by the dark cheeks and neck (T. Reid pers. comm.). The inevitable question is, was the bird off Washington in January 2000 the same bird seen off California in August 1999? This question is unanswerable, unless pelagic-trip operators begin catching and banding or otherwise marking vagrant albatrosses.

Israel, 1981. An immature of the *cauta/steadi* complex was seen 20–26 February 1981 from Taba, Egypt and Elat, Israel in the Gulf of Aqaba. The bird was seen again 2 March 1981, and was later found dying on a salt pond at Elat, Israel, 7 March 1981 and was collected (R. Nathan pers comm., Goodman and Storer 1987, Hillcoat et al. 1997). The bird is erroneously reported as "found dead" in several published references including Jennings (1985), Meeth and Meeth (1988), and Snow and Perrins (1998). The specimen is no. 9659 at the Tel Aviv University Museum (Paz 1987). It was reported as nominate *D. c. cauta* (Beaman and Madge 1998). It was a male (R. Nathan, pers. comm.), and its measurements—wing = 583 mm, culmen = 131 mm, tarsus = 90 mm (Y. Yom-Tov pers. comm.)—confirm it as *T. cauta* (see Table 1).

Somalia, 1986. An albatross was seen from a freighter, 18 nautical miles off Cape Guardafui, Somalia (11° 50' N, 51° 35' E), 18 September 1986 (Meeth and Meeth 1988). The observers noted "a large, long-winged albatross The upperwing and back were sooty grey, crown of head and cheeks were light grey. The large white rump was conspicuous. The underparts were white except for the black wing tips, and a very thin dark leading and trailing edge. The bill was grey" (Meeth and Meeth 1988 66) The bird was too far away to see the diagnostic dark spot under the leading edge of the wing. Based on the field marks observed and described, this bird is not identifiable to species within the Shy Albatross (= *Diomedea cauta*) complex. The gray head fits all four members of the complex in juvenal and subadult plumage, and Salvin's and Chatham in adult plumage (Harrison 1985, 1987b), although the black wing tips, especially seen at a distance, suggest a Salvin's Albatross, *Thalassarche salvini* (Bartle 1975, Barton 1979, Bourne 1983) or Chatham Albatross, *T. eremita* (Marchant and Higgins 1990, del Hoyo et al 1992).

STATUS AND MOVEMENTS

The world population of the Shy Albatross is estimated at 55,000–60,000 individuals, although this estimate is of "moderate accuracy only" (Gales 1998:29). The Shy Albatross has suffered from its interactions with humans. The first known encounter with man occurred in 1798, when the explorers Matthew Flinders and George Bass discovered Albatross Island. As Flinders wrote, putting ashore, Bass was "obliged to fight his way up the cliffs of the island with the seals, and when arrived at the top, to make a road with his clubs amongst the albatrosses" (Mathews 1912). The Shy Albatross breeding colony at Albatross Island was decimated, first by seal hunters and later by plume hunters, reducing population from an estimate of 20,000 pairs in the late 19th century (Croxall and Gales 1998, Gales 1998) to ±400 nests in 1894 (Warham 1990) and ±300 nests by 1909 (Gales 1998, del Hoyo et al 1992) The Albatross Island breeding colony has recovered to about 5000 breeding pairs today (Croxall and Gales 1998). The nesting colonies at the isolated rocks of the Mewstone and Pedra Branca, off southern Tasmania, have an estimated breeding population of 7000 pairs and 200–250 pairs, respectively (Gales 1998, Brothers et al. 1998).

How would a Shy Albatross end up off California? As Stallcup and Terrill (1996) noted, in "most situations, one can never know with certainty that a vagrant seabird has arrived at a location without direct human involvement." However, given the distribution and history of wandering in the *cauta/steadi* complex, whereas ship assistance should be taken into consideration (Harrison 1985, Mlodinow 1999), it seems likely that the Point Arena Shy Albatross arrived unaided. Members of the *cauta/steadi* complex have journeyed to the Northern Hemisphere at least three, perhaps four previous times, twice to the northwestern coast of the United States. These earlier records from the Pacific Coast illustrate its potential for long-distance vagrancy (Roberson 1980). It was seen in late August, consistent with the two previous early to mid-fall sightings (1 September and 5 October) in the northern Pacific. Finally, as Slipp (1952:459) concluded about the Washington state record, the albatross' "size and nature would render it a most unlikely captive."

SUMMARY

The bird seen off Point Arena, California, in August 1999 is identifiable as a Shy Albatross, *Thalassarche cauta, sensu stricto.* Examining prior records of the Shy Albatross complex from the Northern Hemisphere and comparing them to known morphometrics of *T. cauta* and the recently-suggested split *T. steadi*, I have concluded that both *T. cauta* and *T. steadi* have previously occurred in the Northern Hemisphere, but that prior to the Point Arena sighting, the only identifiable record of this species complex in North America was a *T. steadi*, off Washington state in 1951. The Point Arena bird thus represents the first definitive *T. cauta* for North America, although a subadult bird of the *cauta/steadi* complex well seen off Oregon in 1996 but not identifiable to taxon, could have been a *cauta*. The 2000 Washington bird may represent a second *T. cauta* for North America, although the fact that it might be the same individual as seen off California cannot be ruled out.

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