Vagrancy and Identification of First-cycle Slaty-backed Gulls

North American birders face a formative identification ***puzzle*** *. . .*

A 9,000-word article on immature gulls! What were they thinking at *Birding* magazine? I can picture two responses: (1) It's about time; and (2) No thanks. If you're in the former camp, Enjoy. If you're in the latter camp, I would respectfully request that you at least read through the authors' introductory remarks and scan through some of the images. Even though this article is "just" about a single age-class of a rare bird, it brings out issues and ideas with broad relevance to our enjoyment and appreciation of birds.

Because of the length of this article, we could not fit it all in the print version of the magazine. The entire article is available here to ABA members in this expanded digital edition.

—Ted Floyd

NOTE: Words and terms in boldface are defined in the glossary at the end of the article.

A highly coastal scavenger, hunter, and kleptoparasite of northeastern Asia, the Slaty-backed Gull displays an impressive propensity for vagrancy. In recent years, it has fueled the reveries of birders throughout North America and beyond. Records are scattered across the continent, with most of those away from Alaska involving birds in their second **plumage cycle** and older, with their eponymous slaty backs. But what about younger birds?

Efforts have been made to work out the identification of first-cycle birds on the ID-Frontiers listserv (birding.aba.org/maillist/IDF) since the 1990s, and several publications have examined the topic (Pyle 1997, Zimmer 2000, Moores 2005). Two excellent major gull guides (Malling Olsen and Larsson 2003, Howell and Dunn 2007) have helped, too. Nevertheless, identifying first-cycle Slaty-backed Gulls remains an ID challenge for birders in North America and elsewhere.

Four problems beset accurate first-cycle Slaty-backed Gull identification. First, the hybridizing population of **American Herring Gulls** and Glaucous-winged Gulls from Glacier Bay to Cook Inlet, Alaska, produces birds that can approximate most of the plumage traits of Slaty-backed (Howell and Dunn 2007). Second, Slaty-backed itself is believed to hybridize with Glaucous-winged Gulls and **Vega Herring Gulls** (King

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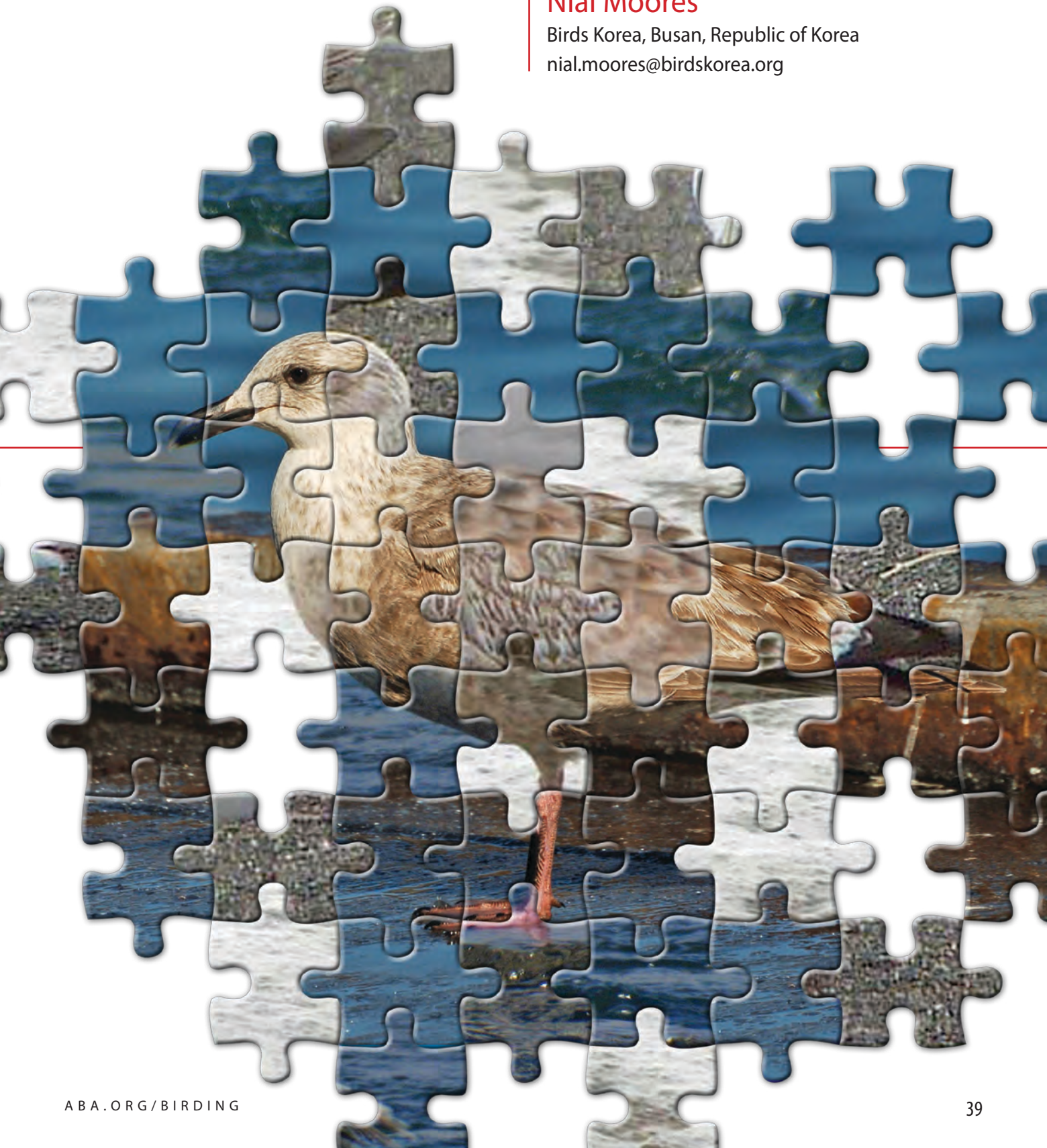

Fig. 1. First-cycle Slaty-backed Gull. Had this bird shown up at your local lake or landfill, would you have been able to identify it? Note that the wings are short and broad, the contrast between the inner and outer primaries is minimal, a dark smudge sets off a thick white crescent below the eye, the head is blocky, and the bill base is deep. *Chōshi, Chiba, Japan; February 16, 2007. Photo by © Osao Ujihara and Michiaki Ujihara.*

and Carey 1999, Malling Olsen and Larsson 2003). Third, Slaty-backed is tremendously variable in plumage and structure in its **first plumage cycle**, even for a large gull (Moores 2005). Fourth, little research has been done on molt strategies and the extent of expected variation in first-cycle Slaty-backed within its main breeding and wintering ranges.

Here we examine the identification of first-cycle Slaty-backed Gulls, with particular emphasis on separation from birds in the Glaucous-winged–American Herring Gull hybrid spectrum. We then discuss the identification of various photographic records of first-cycle Slaty-backed Gulls and of other, more confusing or controversial individuals in North America. Our findings are based on Pyle and McKee's combined six decades of gull study in California and Moores' 25 years in Korea and Japan.

We have chosen the semi-popular name "**Cook Inlet Gull**" over the awkward "American Herring x Glaucous-winged Gull hybrid" because the latter is often misconstrued to indicate that one of the individual's parents was a Glaucous-winged Gull and

Variability and Individual Specialization

All things being equal, Darwinian selection pushes a population toward an "optimal phenotype," the collection of traits best suited for an organism's environment. So what is going on with all this individual variation in gulls? Da Cunha and Dobzhansky (1954) laid the groundwork for what Van Valen (1965) established as the niche variation hypothesis (NVH). Variation is maintained if different alleles are favored by selection in different habitats; organisms exploiting a wide variety of habitats tend to be more variable, due in part to the advantages of individual specialization in reducing intraspecific competition. This hypothesis has been widely disputed but has also received considerable empirical support (Lacy 1982, Bolnick et al. 2007). As pointed out by Bolnick et al., studies rejecting NVH tended to focus only on morphological traits, ignoring behavior as a key component of phenotypic plasticity.

Watanuki (1989, 1992) uncovered significant individual variation in adult male Slaty-backed Gull diets. He termed some males hunting-biased; these individuals engage in depredation of Black-tailed Gull chicks and cannibalism. The fish they obtain tends to be bottom-dwelling species, which are scavenged from human fishing activities. Other males, termed fishing-biased, obtain more top-dwelling fish and tend to hunt Rhinoceros Auklet chicks. Watanuki noted that locating accessible auklet chicks requires the birds to spend long periods walking through vegetation and checking burrows. This is an entirely different activity from hunting gull chicks, which is a game of penetrating the aggressive defense tactics of the parents. Watanuki (personal communication) does not believe there is a genetic component to this individual diet specialization. Diet specialization may not yet be developed in young birds, but these birds do exploit a great variety of food resources.

Slaty-backed Gull numbers in many colonies of the Russian Far East increased toward the end of the 20th century, in some cases dramatically (Kondratyev et al. 2000). However, many fisheries in the North Pacific have crashed and shifted recently. If we accept the proposals of the NVH, we then might intuitively surmise that individuals with extreme traits experience a disadvantage when specific food resources are depleted, a result that has been demonstrated in spadefoot toads (Martin and Pfennig 2012). Is vagrancy associated with other behavioral traits, or even with physical traits that have affected a gull's life or traits which it has learned to take advantage of? Is vagrancy itself an extreme behavioral expression of underlying genetics? Large gulls provide a perfect arena to explore some of these intriguing questions.

Fig. 2. First-cycle American Herring Gull. Compared to Fig. 1, note the longer, narrower "hand," the strong contrast between the dark outer primaries and pale bases to the inner primaries, and the narrow inner wing. *Lake Michigan, Michigan; August 17, 2014. Photo by © Amar Ayyash.*

the other was an American Herring Gull. In reality, many of these birds are the products of intermediate parents, so it is apposite to use a relatively well-known name that refers to any individual intermediate between these two species. Mlodinow (2012) detailed the identification of these hybrids in the North American interior, but did not cover distinctions from vagrant Slaty-backed Gulls.

Variability of "Large White-headed Gulls"

Why do large gulls display so much individual variation? Even within a single **feather generation**, untangling variation in initial plumage color from variation in feather degradation (wear and fading)—which is tied to latitude of wintering, behavior, diet, and fitness—is no simple task. For first-cycle birds, throw in variation in the timing and extent of the **preformative molt** (the **incomplete molt** out of **juvenile plumage**), along with the resultant variation in plumage patterns of **formative** feathers replaced at different times during the fall and winter, and the puzzle becomes truly dizzying. Of particular importance to those dealing with vagrants are geographic trends in the durability and length of **retention** of juvenile plumage in large northern gulls. In populations toward the northern end of the breeding range, juveniles tend to grow stronger, more wear-resistant feathers and delay their preformative molts.

Identifying first-cycle Slaty-backed Gulls is not unlike identifying accipiters, as there are few cut-and-dried field marks. With practice, however, we can learn to apply a whole suite of structural and plumage characteristics that makes the identification of many individuals possible. Hybridization and high variability force us to leave some gulls unidentified, but that does not mean we should shy away from those displaying a wide variety of traits that add up to one reasonable conclusion, if there are no clear signs of hybridization.

TABLE 1. Structure of a Typical American Herring Gull.

Bill	Long (except in young juveniles and some small females) and narrow-based, with mild to moderate gonydeal swelling; downward curve of nail typically begins slightly anterior to the nostril.
Head	Flat to shallowly rounded crown; shallow forehead slope.
Body	Long, narrow, and thin-chested.
Legs	Moderate to long; fairly thin.
Folded Primaries	Panel long and fairly broad; P7 usually extends beyond tail tip.
Spread Primaries	Sharply triangular (relaxed glide) to narrowly rounded (fully spread); outer primaries moderate to long.
Inner Wing	Moderate to narrow, with fairly straight trailing edge to secondaries on relaxed gliding wing.

TABLE 2. Structure of a "Cook Inlet Gull" (Hybrid American Herring x Glaucous-winged Gull).

Bill	May be typical of either parent species; occasionally appears short and thick, much like Slaty-backed; downward curve of nail usually begins slightly anterior to the nostril.
Head	Dome-shaped to wedge-shaped, with a variable forehead slope, but typically does not show a noticeably concave forehead.
Body	Thin-chested to bulky, but not strikingly front-heavy or pot-bellied.
Legs	Short to long; relatively thin.
Folded Primaries	Panel generally longer and broader than in Slaty-backed.
Spread Primaries	Varies from similar to American Herring to similar to Glaucous-winged; hand generally more triangular than Slaty-backed in comparable wing positions, with longer outer primaries.
Inner Wing	Lacks pronounced skua-like bulge at trailing edge of secondaries in a relaxed glide.

Structure

The Slaty-backed Gull shares structural attributes with other scavengers that spend most of the year in windy, high-latitude seas. Indeed, the species prefers marine habitats in its native range (Moores 2005). It shows some convergence of structural traits with the larger species in the skua/jaeger genus *Stercorarius*. The extent to which this convergence is due to environmental factors, instead of adaptations for kleptoparasitism and hunting, is unclear; Slaty-backed engages in the latter activities extensively (Watanuki 1992,

Senzaki et al. 2013). Slaty-backed's structure departs from some of the tendencies favored for long-distance gliding and use of thermals in gulls with longer migrations to lower-latitude, less-maritime environments in winter. Instead, it structurally stands out as a true seabird, with its barrel-shaped body, short outer primaries, short legs, and short, thick bill (see Fig. 5).

Note that structural differences between males and females of each gull species can be striking and may swamp interspecific differences. In addition, judging traits such as wing structure can be difficult in the field, and still photos can give remarkably misleading impressions. It is best to work with a large series of photos of each individual. The representative photos we have chosen of vagrants may appear distinctive, but we would not consider them diagnostic had they not been backed up by other photos showing a series of different perspectives and angles of each individual. As always, the urgency to document a vagrant should never supersede good birding ethics and respect for others trying to see the bird.

Fig. 4. Apparent first-cycle Cook Inlet Gull. The long outer primaries are suggestive of American Herring. Note the finely speckled coverts (more like Glaucous-winged) and an intermediate wing pattern. There is little contrast between the outer and inner webs of P2–P4 toward their bases, unlike in most Slaty-backed Gulls, and most Slaty-backeds by this date have contrastingly paler rumps. *Santa Cruz, California; January 10, 2005. Photo by © Jeff Poklen.*

Wings • The exposed panel of the Slaty-backed Gull's primaries is short and narrow, and this is noticeable on both the folded and the partly spread wing (Figs. 10, 27). The narrow look is lost when the primaries are fully spread, but a distinctive appearance is maintained: The trailing edge is broadly rounded, giving the "hand" a blunt look (Figs. 1, 13). The longer outer primaries of American Herring gives the partially spread hand a more cone-shaped look (Figs. 2, 7), while the fully spread wingtip looks rounded, but narrower and more elongated than that of Slaty-backed (Fig. 12). Glaucous-winged is intermediate between these two; its outer primaries are shorter than in American Herring, and the fully spread hand can look nearly as broad as in Slaty-backed, but the overall appearance of the hand remains subtly more triangular (Fig. 3).

The typical approach to measuring primary length on the folded wing is to assess the position of the tip of the seventh primary (P7) from the inside in relation to the tail tip. The longest clearly visible primary on a large gull's folded wing is P9 (the very tip of the outermost primary, P10, may also be barely visible). P7 is easily located by counting inward. In American Herring Gull, the tip of the tail tends to fall between P6 and P7, while in Glaucous-winged and Slaty-backed, it most often falls between P7 and P8 (Figs. 8, 17). But this mark can be dependent on the bird's stance and the posture and flex of the wings.

The folded wings of several gull species, including Western and Slaty-backed, commonly show a **secondary skirt**. This is shown when the tips of the middle and outer secondaries extend well beyond the tips of the **greater coverts** (Figs. 17, 28). In American Herring, these secondaries are usually all but invisible underneath the greater coverts (Fig. 9). In Glaucous-winged, the tips of the middle secondaries are often visible as a small wedge but

Fig. 3. First-cycle Glaucous-winged Gull. Note the dark look to the rump caused by the density of barring and the "waxy" gray look to the tail, neither shown by pure Slaty-backeds in Asia. In pure Glaucous-winged, too, the hand is more triangular than in Slaty-backed (given equivalent wing positions), and the trailing edge to the secondaries lacks a prominent skua-like bulge. "Cook Inlet Gulls" (hybrid American Herring x Glaucous-winged Gulls) can show the bulkier build, shorter wings, a thicker bill, rather plain greater coverts, and pale inner webs to the primaries of this parent species, thus looking closer to Slaty-backed than does a pure American Herring Gull. *Santa Cruz, California; November 7, 2013. Photo by © Jeff Poklen.*

not as a full skirt. Again, take care to assess the effects of wing position: Even a slightly-opened wing will expose the secondaries of any gull, and even then, this is at best a "soft" character that might help draw your attention to a potential Slaty-backed Gull.

The secondary skirt is partly a product of the longer middle secondaries of the Slaty-backed Gull. Because the innermost secondaries (including the **tertials**) are relatively short, the result is a distinctly convex trailing edge to the spread secondaries. Depending on the wing position, this feature may appear as a distinct bulge or even a point. This look and the short primaries give the bird an especially skua-like quality, particularly in combination with the barrel-shaped chest and short, thick bill (Figs. 5, 21).

The wings of Slaty-backed can take on a long, narrow look when the **humerus** is extended and the secondaries are folded inward toward the body. More typically, the wings look short and broad-based (Figs. 1, 13, 21). This look is distinctly different from the American Herring Gull's long and angular wing shape (Figs. 2, 7). Glaucous-winged and some Cook Inlet gulls are trickier, but still the hand is a bit more triangular (given comparable wing positions), the

TABLE 3. Structure of a Typical Glaucous-winged Gull.

Bill	Deep with strong expansion at gonydeal angle; downward curve of nail usually begins slightly anterior to the nostril.
Head	Rounded crown and forehead; forehead meets bill at relatively abrupt angle.
Body	Chunky but well-proportioned; not obviously front-heavy or pot-bellied.
Legs	Short to long; relatively thin.
Folded Primaries	Panel short to moderate, fairly broad; P7 often falls short of tail tip.
Spread Primaries	Sharply triangular (in glide) to rounded (spread); hand of moderate width; outer primaries moderate in length.
Inner Wing	Moderate to broad, with fairly straight trailing edge to secondaries on relaxed gliding wing.

TABLE 4. Structure of a Typical Slaty-backed Gull.

Bill	Deep-based and often shorter than on other large gulls, with mild to moderate swelling at gonydeal angle; looks slightly drooped due to smoothly rounded nail that typically begins to curve downward directly above the nostril.
Head	Blocky or smoothly rounded; lower forehead often concave, so that angle with bill is shallow and the feathering looks dorso-ventrally "pinched" behind the nostril.
Body	Bulging chest creates front-heavy appearance when relaxed or walking. In more alert positions, usually decidedly pot-bellied.
Legs	Short to fairly long; often widely spaced and notably thick.
Folded Primaries	Panel conspicuously narrow and short; P7 often falls short of tail tip; abruptly pointed look to rear end.
Spread Primaries	Hand looks small and pointy (in glide) to broadly rounded (spread); outer primaries moderately to decidedly short.
Inner Wing	Moderate to broad, often with skua-like bulge or point at mid-secondaries of relaxed gliding wing.

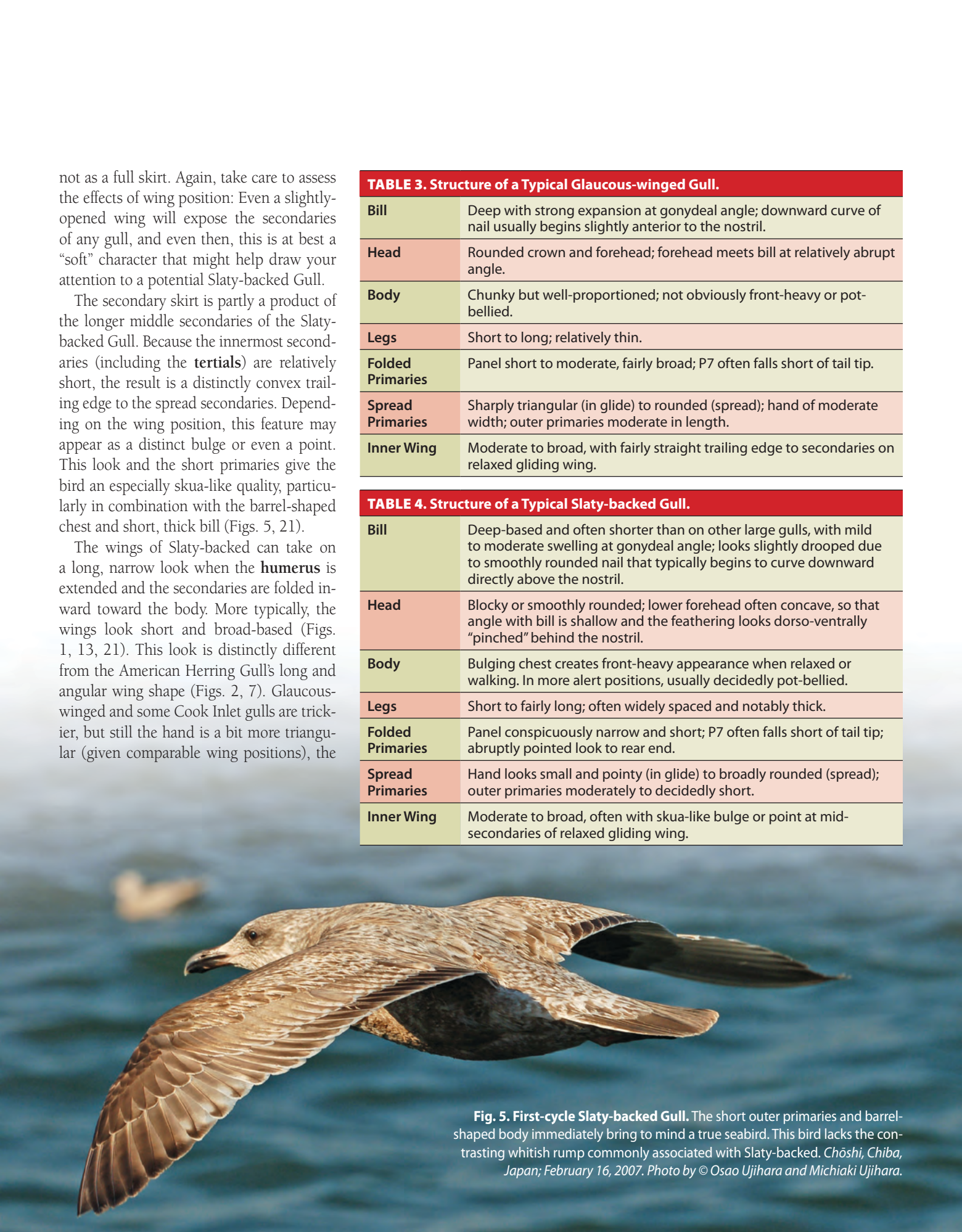

Fig. 5. First-cycle Slaty-backed Gull. The short outer primaries and barrel-shaped body immediately bring to mind a true seabird. This bird lacks the contrasting whitish rump commonly associated with Slaty-backed. *Chōshi, Chiba, Japan; February 16, 2007. Photo by © Osao Ujihara and Michiaki Ujihara.*

Fig. 7. First-cycle American Herring Gulls. These are variable! The cone-shaped hand and narrow arm are maintained on these two gliding birds, despite the differing wing positions, the bills are long and thin, and the contrast between the inner and outer primaries is strong. *Sault Ste. Marie, Ontario; October 2010. Photo by © Kirk Zufelt.*

Fig. 6. Apparent first-cycle Cook Inlet Gull (center, facing right). This bird's structure resembles that of an American Herring Gull, with a fairly slender chest and a long primary projection. The muddy and speckled wing coverts and brown primaries indicate some Glaucous-winged genes. The long primaries, narrow chest, thin legs, and shallow slope to the forehead differ from most Slaty-backed Gulls. Note that the low-angle lighting conditions make the legs of all the gulls in this image look vividly pink. *Orick, California; January 31, 2014. Photo by © Tristan McKee.*

outer primaries average longer, and the trailing edge of the spread secondaries appears more shallowly convex (Figs. 3, 14, 16).

Bill and Head Shape • Smaller Slaty-backed Gulls, typically females, have short and stout (deep-based) bills compared to American Herring Gulls, and the gonydeal angle is inconspicuous (Fig. 8). The larger, longer-billed birds, generally males, can show a moderate gonydeal angle (Fig. 1, 27) and closely approach some Glaucous-winged bills. The bill often appears subtly drooping or downward-angled, due to the long downward curvature of the nail. This curve tends to start above the nares, or "nostril" (Fig. 10), whereas the downward curvature typically begins just anterior to the nostril in our other taxa (Fig. 9). As in the California Gull, the Slaty-backed's **gape** is often distinctly and abruptly decurved, giving the bird a "disapproving mien" (Moores 2005; Fig. 8). Glaucous-winged, American Herring, and Cook Inlet gulls tend to have a straight or more gently curved gape (Fig. 15). High variability makes all these bill-related features "soft" supporting characteristics, however.

Fig. 8. First-cycle Slaty-backed Gull. This bird appears to have molted in largely formative head and breast feathering (whitish), with the remainder of the feathering largely juvenile (brownish). Note the scattered formative back feathers with large dark centers and white tips, the deep-based bill with little gonydeal expansion, the front-heavy look, and the sharply decurved gape line. *Chōshi, Chiba, Japan; February 3, 2007. Photo by © Osao Ujihara and Michiaki Ujihara.*

Female Slaty-backed Gulls are round-headed, whereas males tend to have a blocky or wedge-shaped look to the head (Pyle 2008). In both cases, the lower forehead is sometimes noticeably concave, and feathering extends well out toward the nostril, giving the feathered area a "pinched" look at the bill base (Figs. 8, 29). In comparison, both sexes of American Herring have fairly flat crowns and shallow, even slopes to the forehead (Fig. 9), although females appear a bit more round-headed. Glaucous-winged typically has an evenly sloped or rounded forehead that terminates at the bill in a steeper angle. A Cook Inlet Gull could potentially combine these shapes into a Slaty-backed–like head. This is another feature more likely to contribute to the overall look

Left: Fig. 9. First-cycle American Herring Gull (foreground, facing right). This large presumed male has a fairly flat head, a long, relatively thin-based bill, a fairly long primary projection, and a plain face, compared to most Slaty-backed Gulls. The legs are long and a characteristic white-hooded appearance is developing, contrasting with the smooth brown under-parts. *Arcata, California; February 2, 2014. Photo by © Tristan McKee.*

Right: Fig. 10. First-cycle Slaty-backed Gull. The front-heavy, hunched posture of the Slaty-backed Gull is especially noticeable on a walking bird. This look is emphasized by the short outer primaries, which give the rear end an abruptly pointed look. Note also the short, deep-based bill and the largely juvenile plumage on this late date. *Chōshi, Chiba, Japan; February 3, 2007. Photo by © Osao Ujihara and Michiaki Ujihara.*

that draws one's attention to a Slaty-backed than a strong supporting factor in its identification.

Body Shape, Legs, and Stance • All gulls look long-necked when alert; the Slaty-backed Gull looks just a little more dramatically so than most. The barrel chest bulges forward in the alert position. In more relaxed poses, the bird takes on a bulky, front-heavy appearance, accentuated by the stubby-looking, abruptly pointed rear end (Figs. 10, 27). Slaty-backed often exhibits a hunched-forward posture, especially while walking (Fig. 10). In a slightly more alert position, the bird often looks pot-bellied (Figs. 17, 27), especially if it is a short-legged individual. By contrast, American Herring Gulls and many Cook Inlet Gulls look thin through the chest and "weighed back" by the longer primaries (Figs. 6, 9). Glaucous-winged Gulls and some Cook Inlet Gulls can be bulkier, but they come across as well-proportioned, without the obvious front-heavy, stubby-winged look of Slaty-backed.

The legs of Slaty-backed Gull vary in length but are often widely spaced (apparently an adaptation to windswept coastal rocks; Moores 2005), and the gait is often described as waddling or goose-like. A hunched-over bird waddling through the flock with its head low and an exaggerated side-to-side swing to the gait is worth a second look. A particularly short and thick-legged look is also characteristic of Slaty-backed, but is not always evident. Short legs can also be seen on some female Glaucous-winged

Fig. 11. Apparent first-cycle Cook Inlet Gull. The smooth, gingery look to the under-parts, plain face, and fairly thin-based bill distinguish this individual from Slaty-backed. Note that the preformative molt is surprisingly delayed, with only a handful of formative scapulars and back feathers evident. Normally, only heavily faded Slaty-backeds show primaries and tertials this pale brown in color. The hunched posture of begging juvenile gulls can recall the resting posture of Slaty-backed, and birds may beg throughout their first winter—especially when being fed by humans! *Arcata, California; February 11, 2014. Photo by © Tristan McKee.*

Gulls. Note that the Western Gull shares a number of structural similarities with Slaty-backed, and the hybrid population with Glaucous-winged can produce Slaty-backed–like birds as well (discussed separately below).

Plumage

Primary Pattern • The primaries of Slaty-backed are often compared with those of first-cycle Thayer's Gull, both species exhibiting a "Venetian blind" pattern (Figs. 1, 13). This striped effect is caused by the contrast between the dark brown outer web and pale tan or whitish inner web of each primary. In reality, the pattern is more complex, with dark sub-terminal bands typically wrapping onto the inner webs of each primary, along with small white fringes at the primary tips. The pale area on the inner web terminates in a rounded tongue-tip against the dark sub-terminal band, and this pattern can lead to a "string of pearls" effect on the outer primaries, recalling an adult Slaty-backed. The Venetian-blind pattern is strongest from P2 into the central primaries (P5–P6), while P1 is slightly darker and more diffuse. Often there are elongated pale sub-terminal spots on the outer webs of at least P2–P4, which can also be shown by American Herring. Due to largely pale inner webs with dark near the tips, the under-side of the primaries resembles Thayer's of this age: Slaty-backed is all pale with a dark border along the trailing edge of the outer primaries (Figs. 21, 26).

The primaries of Cook Inlet Gulls can combine the pale inner webs of Glaucous-winged with the dark outer webs of American

Fig. 12. First-cycle American Herring Gull. Only when the primaries are fully spread does the hand appear rounded, but it is still longer and narrower than in Slaty-backed. Beware that the outer primaries of American Herrings are a bit pale near the bases of the inner webs, which becomes slightly exposed in this wing position. *New Buffalo, Michigan; December 7, 2013. Photo by © Amar Ayyash.*

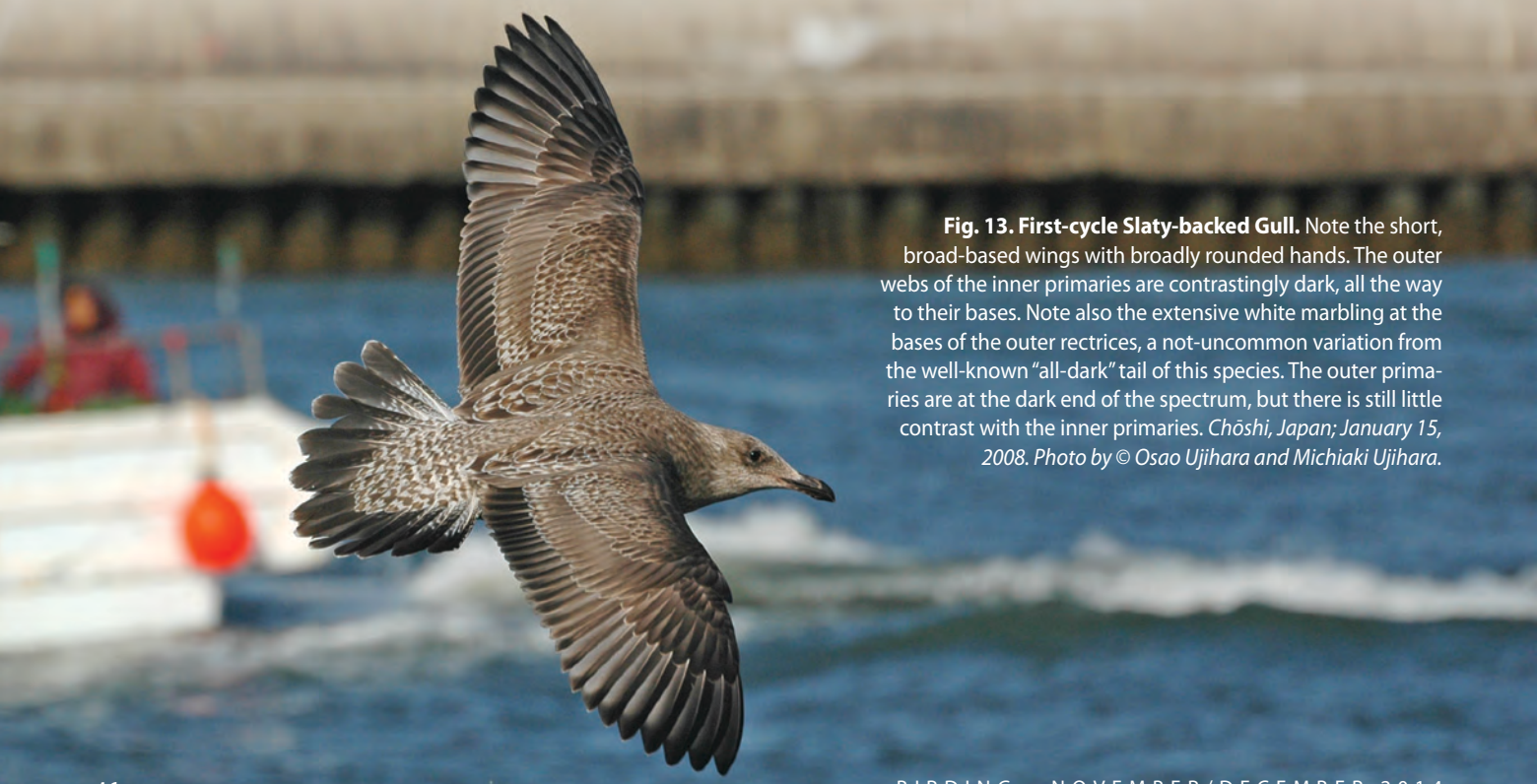

Fig. 13. First-cycle Slaty-backed Gull. Note the short, broad-based wings with broadly rounded hands. The outer webs of the inner primaries are contrastingly dark, all the way to their bases. Note also the extensive white marbling at the bases of the outer rectrices, a not-uncommon variation from the well-known "all-dark" tail of this species. The outer primaries are at the dark end of the spectrum, but there is still little contrast with the inner primaries. *Chōshi, Japan; January 15, 2008. Photo by © Osao Ujihara and Michiaki Ujihara.*

Herring, thus creating a Venetian-blind pattern much like that of Slaty-backed. We have consistently found that the uniformly pale primaries of Glaucous-winged contribute either a muted, washed-out look or a Venetian-blind pattern, but, as expected, P2–P4 remain pale or pale with dark sub-terminal spots on apparent Cook Inlet Gulls (Figs. 4, 14, 16). Some of the darkest fresh juvenile American Herrings show only a faint primary window, including fairly dark bases to the outer webs of P2–P4, but their solid blackish outer primaries make them unlikely to be confused with Slaty-backed Gulls. This brings up two scenarios that we consider "worst-case."

One is a Cook Inlet Gull that manages to take on some of the paleness from the inner webs of the outer primaries of Glaucous-winged but remains at the dark extreme of fresh American Herring in the inner primaries. Even at this dark extreme, the outer webs of P2–P4 are duller and more diffuse in American Herring, lacking bold contrast with the pale tongues on the inner webs and the elongated pale sub-terminal spots on the outer webs.

The second scenario is a faded Slaty-backed that has lost this contrast between the webs on the inner primaries. Such a bird, especially a vagrant, may have to be left unidentified unless structural clues and/or formative upper-part feathers (see below) are sufficiently distinctive.

TABLE 5. Plumage and Soft Part Colors of a First-cycle American Herring Gull.

Bill	Black, with pink or dull red developing in basal two-thirds over winter, sometimes sharply demarcated from black tip.
Legs	Fleshy pink to dull reddish pink.
Eyes	Dark until spring, when they may begin to pale slightly.
Head Pattern	Plain face, sometimes with slightly darker auriculars; may develop demarcated white head over course of winter.
Neck and under-parts	Brown, fading to whitish over course of winter, revealing diffuse streaked pattern.
Juvenile scapulars	Dark brown with white fringes and typically some notching, which may create bold holly-leaf pattern.
Median and lesser coverts	Dark centers or anchor-shaped interior markings; white fringes and/or notching.
Greater coverts	Dark brown interiors with white fringes and variable, but usually heavy, notching throughout.
Tertials	Dark brown with white fringes, notches, and sub-terminal markings.
Primaries: folded	Blackish brown when fresh, fading to dark or medium brown by spring; white tips lacking or tiny.
Primaries: dorsal, spread	Blackish brown outer primaries contrast with pale inner primary window, with bases of outer webs of P2–P4 pale or diffusely dark; pale bases to inner webs of outer primaries create indistinct "Venetian blind" pattern when hand is fully spread.
Primaries: ventral, spread	Mostly dark outermost primaries create dark wedge from below.
Secondaries	Blackish brown outer webs, pale inner webs; often appear silvery from below; from above, dark secondary bar contrasts boldly.
Rump and upper-tail coverts	Vermiculated or barred brown and white; usually shows little contrast with back or tail until plumage is faded in late winter.
Tail	Dark brown, often with white barring at bases of outer rectrices; occasionally shows white barring across entire tail base.

Head, Neck, and Under-parts • Slaty-backed commonly shows a contrasting dark smudge through the eye and often onto the auriculars (Figs. 1, 13, 29). American Herring tends to be plainer on the face (Fig. 9), while Glaucous-winged can have a dark smudge through the eye and onto the cap, or sometimes onto the auriculars (Fig. 3). In the classic Slaty-backed look (Figs. 1, 26), the dark smudge is set off by a whitish half-collar on the side of the neck and a whitish area around the bill, as well as a

Fig. 14. Apparent Cook Inlet Gull (taking off); same bird as in Fig. 6. The primaries are longer and more muted in pattern than in Slaty-backed, the trailing edge to the secondaries is straighter, and the head is flatter and more American Herring–like. *Orick, California; January 31, 2014. Photo by © Tristan McKee.*

Left: Fig. 15. Apparent first-cycle Cook Inlet Gull. With its late retention of juvenile upper-part feathering, very plain greater coverts, and short-looking legs, this gull is a bit tricky. The thin-based bill, tan-washed body and wings, American Herring–like shallow slope to the forehead, plain interiors to the median and lesser coverts, and fairly long primaries all point away from Slaty-backed, however. *Davis, California; January 14, 2013. Photo by © Steve Hampton.*

bold white crescent under the eye. The head and neck of Slaty-backed are unremarkably brown in fresh juvenile plumage; by late winter, however, a largely white or very blotchy look can develop. These large, distinct blotches convey a different look from finer streaking of American Herring and the indistinct smudginess of Glaucous-winged gulls. Some Slaty-backeds that have molted or faded to white on the under-parts retain a distinctive "collar" of coarse blotches (Pyle 1997; Fig. 21). The belly can either whiten or remain contrastingly dark brown (Fig. 8); in the latter case, it often contrasts with a weakly marked paler vent (Moores 2005).

TABLE 6. Plumage and Soft Part Colors of a First-cycle "Cook Inlet Gull" (hybrid American Herring x Glaucous-winged Gull).

Bill	Black, with variable pink or dull reddish developing in basal two-thirds during winter; rarely shows much demarcation from black tip.
Legs	Fleshy pink to blackish red; may have dark scutes ("shins") of Glaucous-winged.
Eyes	Dark until spring or later.
Head pattern	Plain face or with variable dark smudge over eye, usually less contrasting than Slaty-backed; may develop demarcated pale head over course of winter.
Neck and under-parts	Brown to grayish tan, fading to whitish over winter or spring. Streaking and blotching tends to be fine or smudgy, not distinct and coarse.
Juvenile scapulars	Grayish tan to dark brown with white fringes, speckling, and/or notching.
Median and lesser coverts	Grayish tan to dark brown interiors; variable white fringing, speckling, and/or notching.
Greater coverts	Grayish tan to dark brown with white fringes and variable white interior markings; occasionally shows plain panel at bases of greater coverts.
Tertials	Dark brown to grayish tan with white fringes or tips and sub-terminal markings.
Primaries: folded	Grayish tan to dark brown, with variable white fringes.
Primaries: dorsal, spread	Typically shows shadow of American Herring-like pale inner primary window, and outer webs of P2–P4 not contrastingly dark to the base.
Primaries: ventral, spread	Pale or with limited dark in outer primaries; can mimic American Herring or Slaty-backed pattern.
Secondaries	Grayish tan to dark brown outer webs, pale inner webs; pale from below with variably contrasting secondary bar from above.
Rump and upper-tail coverts	Brown or grayish tan with white speckling or vermiculations; typically displays little contrast with back and tail except in faded plumage in late winter.
Tail	Grayish tan to dark brown, sometimes with white barring at bases of outer rectrices.

Scapulars and Back • The juvenile scapulars of Slaty-backed are dark brown with white fringes; some white notching along the edges and internal markings can occur, but the bold "holly-leaf" pattern common to American Herring is generally lacking. Some Glaucous-winged and Cook Inlet gulls show fine speckles or a pale tan color on the scapulars, which differ from Slaty-backed. Unfortunately, the juvenile scapulars of many American Herring and Cook Inlet gulls are, to our eyes, identical to typical juvenile Slaty-backed scapulars. The preformative molt is spread over much of the fall and winter in American Herring, Glaucous-winged, and Cook Inlet gulls, while Slaty-backed often retains full juvenile upper-part feathering through January or February.

The pattern to formative back feathers and scapulars in gulls depends on their timing of replacement relative to hormonal pigment deposition signaling (see Pyle 2013). Replaced formative feathers are more juvenile-like when replaced in fall and become increasingly adult-like when replaced in winter through early spring. By the second **prebasic molt** in summer, the signaling is for more juvenile-like feathers again, and this pattern (incoming feathers showing more juvenile-like characters in fall and more adult-like characters in spring) repeats through later cycles but with

an underlying trend toward adult-like feathers until **definitive plumage** is reached (Pyle 2008). In American Herring, formative back feathers appear more juvenile-like when replaced early but are adult-like pale gray with black shaft streaks when replaced later in winter or spring. Formative back feathers of Slaty-backed are muddier (juvenile-like) when replaced early (Fig. 8) and show broad dark centers with pale tips when replaced later (Fig. 23), which is when most of these feathers tend to be replaced in this species. These fresh, dark-centered back feathers with white fringing appear to be a strong indicator of Slaty-backed in winter and spring (Pyle et al. 2011).

Preformative scapular molt mirrors the patterns of back molt, but there are several important pitfalls. In all the gull taxa considered in this article, formative scapulars are fairly plain at the edges with blackish shaft streaks, anchor-markings, or blotches in their interiors. Nonetheless, the scapulars may be helpful when used in conjunction with presumed timing of the molt of the feather and its exact position in the scapulars. When American Herrings show blackish or charcoal blotches in the formative scapulars, these are typically concentrated in the middle and lower scapulars that are replaced in the early stages of this molt, and thus appear to manifest more of a juvenile characteristic, but are often even darker. Assessing the wear on these scapulars can help ascertain if they are dark-centered feathers replaced earlier in American Herring or later-replaced scapulars in Slaty-backed.

Another potential avenue for confusion is that Slaty-backed can retain some juvenile scapulars and back feathers very late into the first cycle, and these feathers often fade to white. Even more confusingly, some advanced Slaty-backeds begin molting as early as September (Moores 2005), and the formative feathers can fade to off-white with dark shaft-streaks by late winter (see Fig. 30). These feathers can be very similar to later-molted scapulars of American Herring, but they tend to show more wear and less contrastingly crisp shaft-streaks.

Greater Coverts and Tertials • Juvenile greater coverts and tertials are retained throughout the first cycle in all of the gull taxa considered here. One of the first things that jumps out on a fresh juvenile Slaty-backed Gull is a bold, solid dark bar across the base of the greater coverts. There is white mottling at the tips of the greater coverts and often toward the bases of the innermost feathers in this tract (Figs. 1, 13). Some apparent first-cycle Slaty-backeds in Asia have extensive white mottling throughout the greater coverts. Conversely, American Herring tends to have white markings throughout the greater coverts, but some birds show nearly

Right: Fig. 16. Apparent Cook Inlet Gull; same bird as in Fig. 15. The inner primaries are contrastingly pale, the hand is fairly triangular when spread, and the trailing edge of the secondaries is relatively straight, all of which support the observer's conclusion that this was not a Slaty-backed Gull. *Davis, California; January 14, 2013. Photo by © Steve Hampton.*

TABLE 7. Plumage and Soft Part Colors of a First-cycle Glaucous-winged Gull.

Bill	Black, with faint pinkish or dull red base developing in late winter.
Legs	Fleshy pink to blackish red, often with dark scutes ("shins").
Eyes	Dark.
Head Pattern	Grayish tan with dark smudge over eye, often onto cap, and sometimes onto auriculars.
Neck and under-parts	Grayish tan with fine white barring or vermiculations, fading to whitish in spring.
Juvenile scapulars	Grayish tan with white fringes and fine notches and/or speckling.
Median and lesser coverts	Grayish tan with white fringing, marbling, and/or speckling.
Greater coverts	Grayish tan with white fringes; variable white interior marbling and speckling.
Tertials	Grayish tan with white fringes or tips and sub-terminal markings.
Primaries: folded	Grayish tan with distinct white fringes when fresh, fading to whitish by spring.
Primaries: dorsal, spread	Grayish tan, showing little or no contrast with rest of wing.
Primaries: ventral, spread	Whitish or silver.
Secondaries	Grayish-tan outer webs, white inner webs, appearing pale from below and uniform with the rest of the wing from above.
Rump and upper-tail coverts	Grayish tan with fine white speckling or vermiculations.
Tail	Entirely grayish tan or with diffuse white area (sometimes barred) at bases of outer rectrices.

Fig. 17. Faded first-cycle Slaty-backed Gull. Even without many remaining plumage details, the structural traits (especially the short, narrow primary panel and bill shape) and the vividly rosy legs indicate Slaty-backed. *Odawara, Kanagawa, Japan; April 2, 2001. Photo by © Osao Ujihara and Michiaki Ujihara.*

solid bases to these feathers. Glaucous-winged shows variable fine speckling on grayish-tan greater coverts with whitish tips. A bird with a striking dark bar across the bases of the greater coverts is well worth a second look, but it is far from confirmed as a Slaty-backed Gull.

The greater coverts in Slaty-backed are notably prone to fading, and by spring, they can be quite white (Fig. 17). This happens, albeit a bit more slowly, in most similar gulls as well. The dark anchor-marks in the median coverts tend to be more persistent in Slaty-backed, but the median coverts of some birds can fade to unmarked white or tan by spring. First-cycle Slaty-backed has dark brown tertials with slightly scalloped white tips (Figs. 8, 23). American Herring tends to show more extensive white notching along the edges of the tertials (Fig. 9), whereas the tertials of Glaucous-winged have fairly plain tan or grayish interiors with variable white speckling and mottling at the edges. Tertial patterns are so variable, and the Slaty-backed's pattern is so commonly emulated by Cook Inlet Gulls (Fig. 6), that we do not recommend placing any weight on it.

Rump and Upper-tail Coverts • Many fresh juvenile (and some older) Slaty-backed Gulls have non-contrasting white-barred brown rumps and upper-tail coverts, not differing significantly from those of American Herring Gulls (Fig. 5). As the plumage fades over the course of the winter, the background color of these areas in Slaty-backed becomes increasingly whitish (though it usually retains a little dark brown barring; Fig. 1), contrasting distinctly with the lower back. Because both American Herring and Glaucous-winged typically have non-contrasting brown rumps with white barring or speckling, the presence of strong rump–back contrast on a moderately fresh bird can help to call attention to a potential Slaty-backed. More faded American Herrings in late winter often approximate this look, however, and bright lighting can exaggerate the white rump barring on even fresh juveniles.

Tail • The tail of Slaty-backed is generally described as solid dark brown, but many show distinct white barring or marbling

Fig. 18. Unidentified first-cycle gull. This bird displays many Slaty-backed traits, but the considerable contrast between the moderately long inner and outer primaries suggests American Herring genes, and the warm gingery tones to the upper-parts do not fit Slaty-backed, precluding this from being a clear identification. *Lake County, Illinois; December 2, 2012. Photo by © Amar Ayyash.*

TABLE 8. Plumage and Soft Part Colors of a First-cycle Slaty-backed Gull.	
Bill	Black, with variable pink developing in basal two-thirds over winter; does not develop sharply demarcated pattern until second cycle.
Legs	Fleshy pink to vibrant rosy pink; dark shins are unusual, but are often shown by individuals that have other atypical features.
Eyes	Dark until spring, when they may begin to pale slightly.
Head Pattern	Either brown, fading to white over course of winter, or contrastingly pale except for dark-brown smudge around eye, which offsets fairly thick white crescent under eye; often shows whitish partial collar behind auriculars and diffuse white area around bill base.
Neck and under-parts	Brown, fading to white over course of winter, often retaining brown belly and/or coarse brownish smudges on neck and chest.
Juvenile scapulars	Dark brown with white fringes and normally only limited notching.
Median and lesser coverts	Dark sub-terminal marks, often triangular or anchor-shaped; white fringes; dark sub-terminal marks often remain distinct as rest of plumage fades.
Greater coverts	In fresh plumage, dark brown bases contrast with white tips and white-fringed median coverts; variable white notching is concentrated on inner feathers; entire greater covert panel fades to white by spring.
Tertials	Dark brown with white tips or partial fringes and sub-terminal markings.
Primaries: folded	Blackish, often with narrow pale fringes when fresh, becoming dark brown or brown, with increasingly broad pale edges over course of winter and spring.
Primaries: dorsal, spread	From above, strong "Venetian blind" pattern due to contrast between dark outer webs and pale inner webs of all primaries (except dark sub-terminal markings on the inner webs and small elongated pale sub-terminal spots on outer webs); bases of inner webs of P2–P4 remain contrastingly dark; overall effect is reduced contrast between inner and outer primaries when compared to American Herring.
Primaries: entral, spread	Pale except for contrasting dark line along trailing edge of outer primaries.
Secondaries	Dark brown outer webs, pale inner webs; appear pale from below, with moderately contrasting secondary bar from above.
Rump and upper-tail coverts	Vermiculated or barred blackish brown and white in fresh plumage; rump often appears whitish in late fall; contrast with back and tail moderate, increasing over course of winter.
Tail	Dark brown, often with white barring or marbling at bases of outer rectrices.

at the bases of the outer rectrices (Moores 2005), much like that found in American Herring (Fig. 13). Rarely, apparent Slaty-backeds can show white barring or mottling across the entire tail base. We believe that such tail-banded individuals would be very difficult to establish as vagrant records, due to the possibility of Vega Herring x Slaty-backed hybrids. Wear on the upper-tail coverts may expose more of the paler tail-base as the first cycle progresses (Moores, personal observation).

Soft Part Colors

Pink or dull reddish coloration can begin to develop at the base of the first-cycle Slaty-backed's otherwise black bill as early as October. By February, many birds have extensive pink bases (Moores 2005). Thus, bill color is not particularly helpful in distinguishing Slaty-backed from American Herring or Cook Inlet gulls, except that a sharply demarcated bill in early winter is indicative of American Herring genes. Leg color varies from pale fleshy pink to deep rosy pink. Although the deep rosy legs are fairly distinctive (Fig. 17) and generally not found in Glaucous-winged or American Herring, the absence of this intense color does not rule out Slaty-backed, because dull-legged birds also occur in Asia. Also note that low light angles can make any gull's legs appear vibrant (Fig. 6). The eyes of Slaty-backed remain dark through most of the first cycle (Moores 2005), with some paling by late spring (Malling Olsen and Larsson 2003).

Other Confusing Hybrids

Not all of these differences apply to Vega Herring x Glaucous-winged hybrids. In particular, it is crucial to confirm that dark brown extends to the base of the central rectrices on any vagrant. A Vega Herring x Glaucous-winged hybrid most likely shows pale tan or white across the base of the tail. Other dangers, es-

Fig. 19. Unidentified first-cycle gull. The upper-sides of the primaries have a stunning Venetian-blind pattern, more striking than on any Slaty-backed we have seen, for the inner webs are whitish rather than pale tan, and the inner primaries lack dark sub-terminal bands. In addition, there are some relatively fresh, pale gray, American Herring–like lower scapulars with contrasting dark shaft streaks, and the standing bird showed rather long primary projection and a small bill. Moores has never knowingly seen a Slaty-backed in Asia similar to this bird; neither has Pyle nor McKee seen a similar Cook Inlet Gull on our West Coast. This bird remains mysterious. *Washington County, Utah; February 22, 2009. Photo by © Rick Fridell.*

pecially in the East, are Great Black-backed x American Herring and Kelp x American Herring hybrids. These birds can take on many Slaty-backed traits. However, all these parent species share solidly dark outer primaries, so hybrids should lack the Venetian-blind effect and pale under-sides of the primaries of Slaty-backed. Details of wing structure in such hybrids are also unlikely to duplicate Slaty-backed, especially the length of the primaries and middle secondaries.

Western x Glaucous-winged hybrids ("Olympic" or "Puget Sound" gulls) must be eliminated with care. Their plumage is typically quite muted and non-contrasting; only rarely do the inner and outer webs of the primaries create a strong Venetian-blind effect. In those cases, a larger bill with a distinctly expanded gonys, longer outer primaries, and a more triangular hand indicate a hybrid, while vividly pink, widely separated legs, a concave forehead, a blotchy breast pattern, a narrow primary panel, a stubby, abruptly pointed rear end, and/or a front-heavy appearance indicate Slaty-backed. When dealing with relatively small-billed female Slaty-backed candidates, the possibility of American Herring x Thayer's hybrids should also be considered.

Fig. 20. First-cycle Slaty-backed Gull (flying left). The dark bases to the inner primaries reduce the contrast with the Venetian-blind outer primaries in the characteristic Slaty-backed pattern. The dark-centered, pale-fringed, and freshly molted formative scapulars and back feathers are unlike American Herring and Cook Inlet gulls in late winter. See text for more discussion of this bird. *Windsor, Connecticut; February 20, 2013. Photo by © Keith Mueller.*

Fig. 21. First-cycle Slaty-backed Gull; same bird as in Fig. 20. The blotchy "collar" on the upper breast is characteristic of Slaty-backed in late winter. Note the skua-like appearance caused by the bulging secondaries, the rounded trailing edge to the hand, the short, stout bill, and the heavy chest. *Windsor, Connecticut; February 20, 2013. Photo by © Nick Bonomo.*

The possibility of Slaty-backed x Glaucous-winged and Slaty-backed x Vega Herring hybrids renders it difficult to ascertain the true limits of first-cycle Slaty-backed variation. Moores (2005) and others have noted that adult Slaty-backed Gulls are considerably less variable in appearance than first-cycles and rarely show signs of hybridization. One possibility is that decreased fitness of hybrids leads to their early death, but this would be surprising in the gull world, where there is little evidence of hybrid inferiority. The opposite (hybrid vigor) is known to be the case in some parts of the Western x Glaucous-winged hybrid zone (Good et al. 2000). There is general consensus among experts in Asia that Slaty-backed hybrids are infrequent, so the chances of encountering such a bird in North America must be slim.

Based on his study of many thousands of typical Slaty-backed Gulls within their normal range, Moores (2005) proposed the following traits as indicators of potential hybridization with Vega Herring or Glaucous-winged in first-cycle birds: (1) any obvious structural oddness (long-legged look, long primary extension in birds with fully grown tails, etc.); (2) any atypical patterning on the scapulars and mantles (including Vega Herring–like or **Mongolian Gull**–like black barring on a gray "background"); (3) any odd bare parts coloration, most obviously any extensive black on the webbing of the feet and/or on the shins (typical of Glaucous-winged, but shown very rarely if at all by Slaty-backed); (4) any grayish wash to the head or under-parts (typical of Glaucous-winged); and (5) any obviously atypical primary pattern.

Thayer's vs. Slaty-backed

Large male Thayer's Gulls bear a superficial resemblance to small female Slaty-backed Gulls. The following traits of Thayer's usually prevent this from being a serious problem: (1) heavy checkering on the greater coverts and tertial edges; (2) thinner bill; (3) longer primary projection; (4) "coffee with cream" tone to plumage; (5) smaller size; and (6) slimmer body.

Fig. 23. First-cycle Slaty-backed Gull (determined by paint on its tail); same bird as in Figs. 20–22. Additional fresh slaty scapulars have grown in over the preceding month, and the legs have deepened a bit in color. *Windsor, Connecticut; March 16, 2013. Photo by © Suzanne Sullivan.*

Fig. 24. Unidentified first-cycle gull. The upper-sides of the inner primaries are darker than in American Herring, but the primaries are very pale from below. This bird also has a relatively dark greater covert bar and many structural characteristics of a female Slaty-backed (but see text). *Arcata, California; February 3, 2014. Photo by © Tristan McKee.*

Fig. 22. First-cycle Slaty-backed Gull (left); same bird as in Figs. 21, 22. Compared to a first-cycle American Herring Gull (right), note the thicker bill and chest of the Slaty-backed, the longer middle secondaries, the steeper forehead, the blotchy collar on a white background, and reduced contrast between the inner and outer primaries. *Windsor, Connecticut; February 20, 2013. Photo by © Nick Bonomo.*

Fig. 25. Unidentified first-cycle gull; same bird as in Fig. 24. The exposure in this image makes the upper-sides of the primaries look paler than in the previous one, but still the contrast between the inner and outer primaries is minimal. This bird's short, broad-based wings are decidedly Slaty-backed–like, but the bird shows a number of unusual traits, and no consensus on its identification has emerged among experts. *Arcata, California; February 2, 2014. Photo by © Tristan McKee.*

Two Controversial Gulls: Windsor, Connecticut, and Arcata, California

Mark Szantyr picked out a Slaty-backed candidate in Windsor, Connecticut, in February 2013 (Figs. 20–22), and it was re-found at Silver Lake, Massachusetts, in March 2013 (Fig. 23). The expert evaluations from around the world were elucidating. In terms of its primary pattern, fresh incoming formative slaty-centered scapulars, wing structure (especially its long middle secondaries), and blotchy, barrel-shaped chest, this bird fit Slaty-backed well. A number of concerns were raised, especially the dull pink legs, dull reddish bill base, white barring at the bases of the outer rectrices, and not-so-short primaries. As described above, these traits are all regular in Slaty-backed Gulls in Asia and are not normally considered signs of hybridization by experts there. When this individual (as determined by paint on its tail) was later re-found in Massachusetts by Suzanne Sullivan, it displayed even more extensive slaty gray in the upperparts and somewhat deeper pink legs. Our primary remaining concern was eliminating a Great Black-backed x American Herring or Kelp x American Herring hybrid. Taking into account the extent of paleness on the inner webs of the outer primaries, the short wings, and the long mid-secondaries, we believe these hybrids can be eliminated comfortably, leading to our conclusion that the bird is identifiable as a Slaty-backed Gull.

A dark-bodied juvenile gull arrived in Arcata, California, in November 2013 and obligingly remained downtown until March 5, 2014 (Figs. 24, 25), creating much confusion among

Fig. 26. Apparent first-cycle Slaty-backed Gull. This bird displays a short, stout bill, Venetian-blind primaries, a broadly rounded hand, vivid pink feet, a dark mask offsetting white areas under the eye, around the bill, and on the neck side-collar, a Thayer's-like pattern under the primaries, and a contrasting white rump. Although some of the most critical Slaty-backed traits are displayed, the series of photos was too short to identify this bird conclusively. *Marion County, Iowa; November 2000. Photo by © Aaron Brees.*

Fig. 27. First-cycle Slaty-backed Gull. Note the front-heavy appearance, broad, rounded chest, dark formative back feathers with pale fringing, short and narrow primary panel, stout bill with minimal gonydeal expansion, dark eye mask setting off a distinct white crescent under the eye, and plain greater coverts. *Half Moon Bay, California; January 3, 2006. Photo by © Alvaro Jaramillo.*

observers and reviewers of the photos. Experts variously proclaimed it a typical American Herring Gull, a female Western Gull, and a Cook Inlet Gull. Some aspects of the bird's wing structure, bill and head shape, primary pattern, hunched and waddling gait, and bold dark greater covert recall a small female Slaty-backed, and its preformative molt of back feathers and scapulars was delayed through its departure. Concerns once again included dull reddish coloration developing at the base of the bill in January, fleshy pink leg color, and some white barring on the outer rectrices, along with an only mildly contrasting paler rump. Again, none of these traits preclude the bird from being a Slaty-backed. However, Moores can attest that the bird did not fit Asian Slaty-backed Gulls well, particularly due to the fine-grained "biscuit-brown" under-parts, the diffuse dark trailing edge to the primaries, and the lack of an obvious "disapproving mien." No consensus on this bird's identification has yet been reached.

Well-documented Lower 48 Records of First-cycle Slaty-backed Gulls

Only two records of first-cycle Slaty-backed Gulls from California (Heindel and Garrett 2008), one from Washington state (Mlodinow and Aanerud 2008), and one from Texas (Carpenter 2011) have been endorsed by bird records committees in the Lower 48. (Of course, there are numerous accepted records of older birds, especially adults.) Luke Cole (1962–2009), Alvaro Jara-

Left: Fig. 28. First-cycle Slaty-backed Gull (center, facing left). This bird shows the characteristic potbellied appearance, short, thick legs, short and droopy bill, lack of replaced back feathers at this late date, short, narrow primary panel, and large secondary skirt. An under-wing image of this bird shows Thayer's-like pattern. *Russian River Mouth, California; February 15, 2009. Photo by © Todd Easterla.*

Right: Fig. 29. First-cycle Slaty-backed Gull. Note the front-heavy posture, thick legs, dark mask and white crescent under the eye, deep-based bill, distinctly concave forehead, narrow primary panel, and plain greater coverts. Flight photos of this bird show a typical Slaty-backed wing structure and primary pattern. *Orick, California; January 24, 2014. Photo by © Tristan McKee.*

millo, Ron Thorn, and Martin Reid have been instrumental in working out identification criteria for these birds.

We consider two other birds photographed in California (Figs. 28, 29) to be first-cycle Slaty-backed Gulls as well. A bird photographed by Aaron Brees in Iowa in November 2000 (Fig. 26) was the earliest apparent first-cycle Slaty-backed documented in the Lower 48, but with only a few photos, we believed the possibility of photographic artifacts and misleading impressions from having too few angles on the bird was too great for conclusive identification. A number of other individuals scattered around the country had apparent Slaty-backed traits but were unusual in one way or another (Figs. 18, 19, 30) or were simply faded and lacking in plumage details (several birds in Texas, where the intensity of sunlight increases fading), to the extent that we believed they should best be left unidentified. Slaty-backed is also rare but regular in the northwestern Hawaiian Islands, and several first-cycle birds have been identified there (Pyle 1997, Pyle and Pyle 2009).

Conclusions

The Windsor and Arcata cases illustrate our pursuit of a veritable Holy Grail for gull enthusiasts: "the typical first-cycle Slaty-backed Gull." Whether such a creature exists is open to question. Gull migration, range expansion, and vagrancy do not lend themselves to simple generalizations involving innate behavioral traits. Like true seabirds, gull movements are strongly influenced by ephemeral food sources. Locating and exploiting these resources through the seasons and the many miles traveled is an extended learning process for these birds. Intuitively, we can expect a long-lived, intelligent, individual bird to do what it is good at. That is to say, a bird will repeat a successful foraging endeavor. Is its success dependent on its phenotypic traits?

Absolutely, but can we extend this logic to vagrancy questions? For instance, would a Slaty-backed at the long-winged, light-bodied extreme for the species learn that its optimal migration and foraging strategy is to travel longer distances,

Fig. 30. Unidentified first-cycle gull. Our analysis closes with a bird that should inspire caution in gull-watchers. Although its structure provides a very good match to Slaty-backed (perhaps excepting the quite distinct gonydeal angle), the contrast between the inner and outer primaries is rather distinct, and it was not accepted as a Slaty-backed by the California Bird Records Committee (CBRC). The CBRC's caution boiled down to the extent of molt by late December and the silvery formative scapulars with crisp black shaft-streaks (Pyle et al. 2011). This look is characteristic of scapulars grown later in the preformative molt of American Herring Gull. The earliest molting first-cycle Slaty-backeds can grow in some formative scapulars with black shaft-streaks and grayish-brown edges, which might fade to approximate this look by late winter, but they tend to be muddier, while the contrast of the shaft-streaks is particularly crisp in this case.

Note that the head and under-parts are also very advanced and whitish; perhaps this was an early-fledged Slaty-backed from the southern end of the range, with an advanced preformative molt and heavy fading due to its time in the California sun or an oceanic crossing, although the formative feathers seem rather fresh for this. Alternatively, it may have been an exceptionally short-winged and pot-bellied Cook Inlet Gull or even a hybrid involving Slaty-backed. If we all continue working on these problems, perhaps birds like this will someday become identifiable. *Half Moon Bay, California December 31, 2008. Photo by © Matt Brady.*

giving it a better shot at the "big food score" without using as much energy as its "typical" conspecifics? Do individuals with extreme morphological or behavioral traits need to wander more to find specific resources? What about the interactions of molt and migration, and the increased feather fading that occurs in sunnier climes? Should we really expect vagrants to have a set of typical traits? These birds are already displaying their exceptional nature through vagrancy itself. But even with our common local gulls, when we look closely enough at any individual, we tend to find something unexpected—an odd quirk or variation—regardless of the bird's identity or that imaginary thing we call genetic purity. These mutations in structure, plumage, and behavior are the raw materials gull populations need in order to exploit new resources and new lands.

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Glossary

Words and terms appearing in boldface in the main text are briefly defined here.

- **American Herring Gull.** American subspecies (*smithsonianus*) of the circumpolar Herring Gull, differing from Old World Herring Gulls by largely brown tail in first cycle, among other more-subtle characters.
- **auriculars.** Also known as ear coverts, the patch of feathers immediately behind and below the eye.
- **Backcross.** Offspring of a hybrid and a pure individual of one of the hybrid's parent species; sometimes called an F2 hybrid.

- **Cook Inlet Gull.** Any individual with mixed American Herring Gull and Glaucous-winged Gull heritage; named for an area in Alaska where extensive hybridization occurs.
- **Definitive plumage.** The mature or "adult" plumages, attained in most large gulls in their fourth year.
- **Feather generation.** The group of feathers following a particular molt, e.g., juvenile, formative, basic, and alternate feather generations; more than one generation of feathers may be present at a time.
- **First cycle** (first plumage cycle). An age class; begins with the first prebasic molt and ends at the beginning of the second prebasic molt, when the bird is about one year old.
- **Formative** (formative plumage). A first-cycle plumage following juvenile plumage, attained through a partial preformative molt.
- **Humerus.** A bone at the wing base, held against the body below the scapulars; feathers called "humerals" are visible just inward from the secondaries and tertials on the fully-stretched wing.
- **Gape** (gape line). The "mouth line," a slit running back from the base of where the upper and lower mandibles meet.
- **Gonys** (gonydeal, gonydeal angle). A point jutting down to a variable degree along the lower edge of a bird's lower mandible.
- **Greater coverts** (greater secondary coverts). The lowest band of wing coverts, covering the bases of the secondaries; large and often boldly patterned.
- **Hand** (i.e., on spread wings). The outermost, backward-angled portion of a bird's wing, consisting of the carpal area, primary coverts, and primaries.
- **Incomplete molt.** When not all feathers are replaced during a molt; for example, head and body feathers may be replaced, but not the flight feathers.
- **Juvenile plumage.** The first coat of full feathers (not down), attained before a bird fledges through what is now considered the first prebasic molt.
- **Lesser coverts** (lesser secondary coverts). Small feathers forming several rows between the median coverts and scapulars on the folded wing.
- **Median coverts** (median secondary coverts). Band of mid-size feathers across the middle of the wing, between the lesser and greater coverts.
- **Mongolian Gull.** An Asian taxon (subspecies *mongolicus*) of the Herring Gull complex; extensively white on head and under-parts in first cycle.
- **Nail.** The slightly raised, downward-curving tip of a seabird's upper mandible; culminates in a sharp hook.
- **Plumage cycle.** Approximately one-year period extending from a prebasic molt to the following prebasic molt; typically runs from summer–fall to the following summer–fall.
- **Prebasic molt.** In gulls and many other birds, the annual complete replacement of all feathers, beginning with the first prebasic molt; usually happens summer–fall.
- **Preformative molt.** The first "inserted" molt in most birds, following the juvenile plumage; occurs only in the first plumage cycle.
- **Primaries** (P7, P8, P9, etc.). The longest and outermost flight feathers of the wing, numbered from the innermost (P1) outward (gulls have 10 primaries); on the folded wing, they extend beyond the tail tip.
- **Primary panel**. The primaries taken as a whole, either folded or spread.
- **Rectrix** (rectrices). The flight feathers of the tail; gulls have 12.
- **Retained** (retention, retained plumage). Feathers remaining from an earlier plumage; juvenile feathers can be retained in formative plumage, basic feathers can be retained in alternate plumage, etc.
- **Scapulars.** Large feathers covering the juncture of the back and the upper-wing.
- **Secondaries** (S1, S2, S3, etc.). The row of flight feathers forming the trailing edge of the wing, between the primaries

and body; numbered from S1 inward.

- **Secondary skirt.** Portion of the secondaries extending beyond the greater coverts on folded wing; appears as a solid dark bar in first-cycle gulls, extending down and forward from tertials.
- **Tertials.** The innermost secondaries, numbering three in gulls, adjacent to the body on the spread wing; prominent on folded wing, with primaries projecting beneath them.
- **Vega Herring Gull** (Vega Gull). East Asian representative (subspecies *vegae*) of Herring Gull complex, uncommon in northwestern ABA Area; has darker back and more-distinct tail band in first cycle than American Herring Gull.
- **Webs** (outer webs, inner webs). Panels created by the barbs and barbets on either side of the feather shaft, with inner webs toward the body and outer webs away from the body.