The Digital Camera as an Identification Tool

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Computer and optical technology are increasingly becoming useful tools for birders. One example of this is the use of digital cameras for the confirmation of field identifications. This article describes the use of a digital camera in the identification of a first state record for New Hampshire.

On August 7, 2003, a shorebird identified as an adult Little Stint (*Calidris minuta*) in breeding (alternate) plumage was discovered by Mike Harvey in Rye, N.H. On August 10 Peter Capobianco rediscovered and photographed the bird. He was able to obtain numerous images from a distance of about 35-45 feet in good light as the bird fed on the rocky intertidal area of the beach. The basic image of the bird is shown in Figure 1. The camera used was a Nikon D100 SLR with a Sigma 170-500 zoom f 4-6.3 lens with a 1.4 X teleconverter. The digital camera was rated at six megapixels.

Figure 1. Little Stint (all photographs by Peter Capobianco)

Because the bird was in sharp focus, and the pixel capability of the camera was excellent, Peter was able to enlarge the image in the picture to analyze fine details of structure and plumage features. He was then able to compare these details with information in standard field guides and eventually post a web site showing these details in order to receive input from shorebird experts.

The field separation of Little Stint from its close relative, the Red-necked Stint (*Calidris ruficollis*), requires care; however, the cautious observer should also consider the more common *Calidris* species when attempting to identify this species as well. The clarity of the images obtained during the observation of this individual, along with the ability to zoom in on small portions of the image, made it possible to analyze distinctions not always easy to see in the field. This feature emphasizes the

value of a digital camera when trying to distinguish between similar species. Analysis of the Little Stint images revealed the following characteristics:

1. The prominent black centers of the scapular feathers, as shown in Figure 2, is characteristic of Little and Red-necked stints and helps to eliminate more common "peep" species.

Figure 2. Scapulars

Figure 3. Toes

2. The nonwebbed (nonpalmated) toes, as shown in Figure 3, are also characteristic of both Little and Rufous-necked stints. This helps to separate this species from the two *Calidris* species that have partially webbed toes, Semipalmated Sandpiper and Western Sandpiper. Least Sandpipers also have no webbing between their toes, and they possess yellow legs, unlike the other species.
3. The patterns of feather flecks and reddish wash on the necks of Little Stints and Red-necked Stints also vary. Red-necked Stints have a more prominent and extensive reddish wash that extends above the level of the necklace of dark flecks. Little Stints have a more limited reddish wash, as shown in Figure 4. (Since the original images were in color,

Figure 4. Neck and throat

this feature was more distinct than in the black-and-white reproductions.)

4. The white throat and chin that are characteristic of Little Stints are also apparent in Figure 4.

The analysis of digital images provided invaluable information to the New Hampshire rarities committee in evaluating the record. In the past, a first state record of a species difficult to identify might have resulted in the taking of a specimen; however, as the detail of these photos demonstrates, it is often no longer necessary to collect a bird in order to confirm its identification. If one can get close enough to shoot a bird, then it should also be possible to take digital pictures that will reveal what needs to be shown to identify the bird.

Digital cameras have several advantages over traditional cameras. Conventional film cameras do not make it possible to enlarge images on the spot. Also, digital cameras allow one to take as many images as desired with no additional cost of film and processing. All one needs to do is to keep the desired views and scrap the rest. Ease of enlargement is another clear advantage of a digital camera. And finally, digital cameras let one review a photograph and then zoom in on a feature that may be difficult to see on a moving bird, such as the lack of palmation on the toes.

Digital images enable rapid sharing of problem identifications. With a film camera, pictures need to be duplicated and distributed by mail, whereas digital images can be posted on a web page for viewing within minutes. In addition, with a high-resolution digital camera, a section of a photograph can be easily cropped and included on the web page for focused discussion. The application of this technology allows for the identification of rare birds to be confirmed much more rapidly than ever before.

The level of detail that can be captured, along with the ability to quickly analyze and share the images that digital cameras provide, significantly enhances one's identification armamentarium. Also, with the close-up capacity of a digital camera, it is possible to better appreciate the delicate and beautiful features of the birds around us.

References

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