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### FIRST RECORD OF THE EUROPEAN GOLDEN- PLOVER (*PLUVIALIS APRICARIA*) IN NEW MEXICO WITH NOTES ON AGE, PROVENANCE, AND *PLUVIALIS* MOLT

JODHAN FINE, 4304 Rio Grande Blvd. NW, Albuquerque, New Mexico 87107;  
jodhanfine22@gmail.com

RAYMOND L. VANBUSKIRK, 10524 Princess Jeanne Ave. NE, Albuquerque,  
New Mexico 87112; newmexicobirder@gmail.com

JACK B. PARLAPIANO, 1341 Camino Cerrito SE, Albuquerque, New Mexico  
87123; parj220@aa.edu

MATTHEW J. BAUMANN, Department of Biology and Museum of  
Southwestern Biology, University of New Mexico, MSC03-2020, Albuquerque,  
New Mexico 87131-0001; mbaumann22@gmail.com

On 2 October 2020, Tony B. Godfrey alerted the New Mexico birding community about an interesting plover of the genus *Pluvialis* at Maxwell National Wildlife Refuge, Colfax County, northern New Mexico (36° 34' 15" N, 104° 34' 54" W, elevation 1840 m). The refuge is located in an open basin enclosed from the west by the Sangre de Cristo Mountains and from the east by high, scattered mesas. The refuge contains 3699 acres of playa lakes, short-grass prairie, woodlots, and crop fields. This plover had apparently been photographed by another birder at the same location several days earlier, on 28 September, but it was originally reported as a Black-bellied Plover (*Pluvialis squatarola*) via [www.eBird.org](http://www.eBird.org) and therefore wasn't flagged for attention by that site's reviewers for the date and location. Photos from 28 September were not submitted until many days after the observer's initial report. The series of photos taken by Godfrey on 2 October displayed pale underwings and bright white axillaries, the latter unique among the species of *Pluvialis* to the European Golden-Plover (*P. apricaria*; see this issue's outside back cover). In addition to the white axillaries, the thin bill, bright golden plumage, and short primary projection further supported the identification and eliminated both the Black-bellied Plover and American Golden-Plover (*P. dominica*). The last *Pluvialis* considered was the Pacific Golden-Plover (*P. fulva*), which is phenotypically similar and has a history of vagrancy, including to inland locations in the western United States. For example, there are four accepted records from Arizona, three from Utah, and one from Idaho (Rosenberg et al. 2017, <https://ibrc.idahobirds.net/rare-bird-reports/3-a-03-pacific-golden-plover>, <http://www.utahbirds.org/RecCom/RareBirdsIndex.html>). The Pacific and European Golden-Plovers both have similarly short primary projections, but the smaller bill, shorter legs, more prominent white bases to the inner primaries, and especially the white axillaries and underwing coverts are diagnostic field marks of the European Golden-Plover. Given that the latitude of Maxwell National Wildlife Refuge (~36° N), similar to that of the southernmost portion of the European Golden-Plover's winter range, it is plausible that the Maxwell plover could have survived the winter on the refuge. However, on 26 October, exactly four weeks after the bird was originally found, a strong cold front moved through the state, bringing temperatures of nearly -18° C and substantial snow. The plover was not seen after this date, and it is unknown whether it was killed or pushed to a more suitable location.

The European Golden-Plover breeds at northern latitudes from Iceland and the British Isles east through Scandinavia, the Taymyr Peninsula in northwestern Russia,

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and Siberia to ~100°E longitude. It spends the winter months in western Europe, the British Isles, across the Mediterranean, and locally along the far northwest coast of Africa (Hayman et al. 1986, Wiersma et al. 2016). The European Golden-Plover is rarely found in North America away from the far northeastern portion of the continent, where it is an uncommon but regular visitor. It is a local breeder in northeastern Greenland and a regular vagrant to other parts of that island (Boertmann 1994). It is a nearly annual vagrant in Newfoundland and Labrador, sometimes showing up by the hundreds, especially in spring after strong northeasterly winds. There are very few fall records in that province. The species is casual in the French territory of St. Pierre and Miquelon in spring. Quebec has one spring and two summer records, and there are one spring and two fall records from Nova Scotia (Howell et al. 2014, [www.eBird.org](http://www.eBird.org), accessed 10 January 2021). A European Golden-Plover in Massachusetts in 2021 marked the first spring record for the United States. There are single fall records from Maine and Delaware, two summer records from New Jersey, and four from Alaska, which are all from June, except a January specimen (University of Alaska Museum 12100) that represents the first substantiated record from the Pacific (Piston et al. 2001, Gibson et al. 2003, Howell et al. 2014, [www.eBird.org](http://www.eBird.org)). The report of a European Golden-Plover from late January in Santa Barbara, California, was endorsed by experts from Europe but was ultimately rejected by the California Bird Records Committee (Benson et al. 2020).

New Mexico is a highly unusual and unexpected location for a European Golden-Plover. Until the occurrence at Maxwell, there had never been a New World record of a European Golden-Plover away from a coast, much less in a landlocked U.S. state thousands of miles from any previous record. Needless to say, this bird represents a first state record for New Mexico and the first record of European Golden-Plover for interior North America. It also represents the fifth record for the western United States.

Excellent photos of the New Mexico European Golden-Plover show details of the upper wing feathers useful for ageing the bird (Figure 1). The European Golden-Plover follows a complex alternate molt strategy, including a partial preformative molt early in the first year of life and a prealternate molt (O'Brien et al. 2006). Interestingly, Jukema et al. (2014) reported that it regularly retains secondary and primary coverts for more than a year, an aspect of molt not regularly seen in any other species of shorebird. The Maxwell plover was in active primary molt, replacing p9, while p10 had yet to be replaced. The latter was heavily worn, narrow, pointed, and light brown, suggesting that it was a juvenile feather grown shortly after hatching (1 in Figure 1). The median primary coverts, carpal coverts, and greater coverts showed prominent contrast between two generations of feathers. The greater coverts appeared to contain multiple generations of retained feathers: two heavily worn, brownish, juvenile feathers near the outer portion of the tract (2 in Figure 1); seven worn, grayish, and pale-edged formative feathers in the middle section of the tract (3 in Figure 1); and a new feather of the second basic plumage between the two generations of feathers (4 in Figure 1). This pattern appeared to be symmetrical in both wings, suggesting it was not related to accidental feather loss. The carpal covert was replaced with a fresh second basic feather that contrasted starkly with the juvenile and formative feathers in the greater coverts (5 in Figure 1). The median primary coverts clearly showed at least two generations of feathers: multiple brownish feathers in the middle section of the tract, which appear to be juvenile feathers, and two fresh, blackish, second basic feathers in the innermost part of the tract (6 in Figure 1). The presence of black feathers of the alternate plumage on the belly and breast, the three generations of feathers in the secondary coverts, and the molt limit in the outer primaries rule out the possibility that this individual had hatched the year it was observed. They indicate that it was in its second calendar year of life undergoing a second prebasic molt out of its first alternate plumage.

*Pluvialis* plovers can often be reliably identified by the presence of flight-feather

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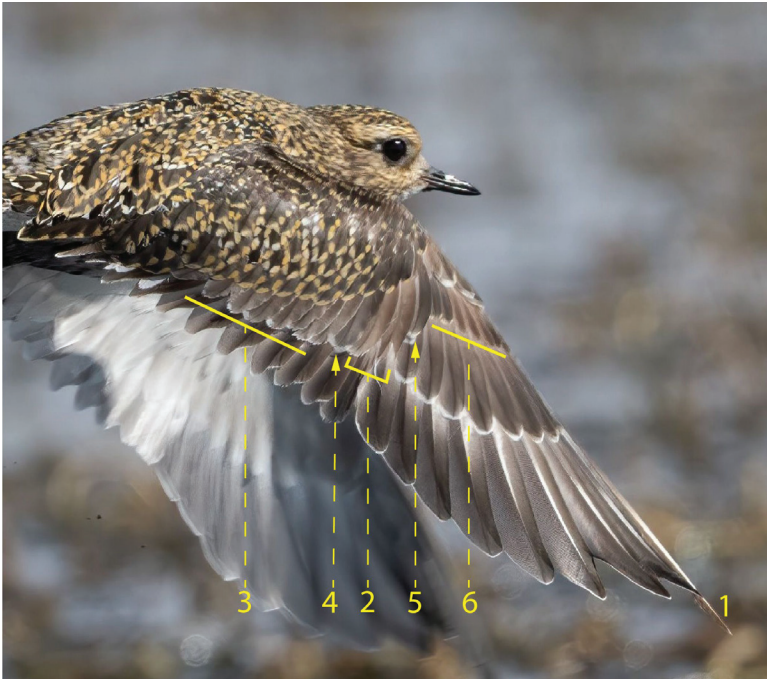


FIGURE 1. Detail of the spread wing of the New Mexico European Golden-Plover (*Pluvialis apricaria*), showing three generations of feathers. 1, Worn and tattered juvenile p10; 2, two heavily worn, presumed juvenile greater coverts; 3, seven greater coverts presumed to represent the formative plumage; 4, new feathers of the second basic plumage between the two generations of coverts; 5, fresh carpal covert of the second basic plumage; 6, two generations of feathers in the median primary coverts.

*Photo by Larry Sansone*

molt and wear in conjunction with the timing and location of observations (Jaramillo 2004). The European Golden-Plover typically retains juvenile primaries and replaces them during the second prebasic molt, a pattern also reported in Pacific and Black-bellied Plovers of similar ages (Johnson 1985, O'Brien et al. 2006). Primaries retained for this amount of time can be readily identified by their extremely worn appearance, as exemplified by the outermost primary on each wing of the Maxwell plover. The American Golden-Plover is unique in the genus *Pluvialis* in replacing all primaries on the winter grounds—even juveniles—as part of a delayed prebasic molt. Therefore, that species should not be encountered in primary molt away from its South American winter range, and it should not show extensively worn primaries at any age, as is often seen in other species of *Pluvialis* in their second fall (Jukema et al. 2011). Finally, adult Pacific Golden-Plovers molt their primaries on the winter grounds nearly two months before American Golden-Plovers do (Jaramillo 2004). For these reasons, careful documentation of molt and the extent of wear in golden-plovers' primaries, especially during fall migration, is useful for species identification. In North America, symmetrical flight-feather molt or extensive primary wear

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presumably eliminates the American Golden-Plover as a possibility. It is important to note that the absence of flight-feather molt is not nearly as useful as the presence of *symmetrical* flight-feather molt in identifying the species of *Pluvialis* in the fall since fall migration precedes any flight-feather molt in juveniles of all species in the genus.

The sequence of primary molt in the Icelandic and continental populations of the European Golden-Plover differs, and this difference might provide insight into the geographic origin of the Maxwell plover. Machín et al. (2018) reported Icelandic populations to complete primary molt on the breeding grounds before departing them. Conversely, continental populations begin molt of their primaries on the breeding grounds, then suspend it typically after replacing 4 or 5 inner primaries, before departing to complete molt at stopover or wintering sites. Siberian and Alaskan breeding populations of the Pacific Golden-Plover differ similarly, likely as an adaptation to the differing pressures of trans-continental versus trans-oceanic migration, respectively (Jukema et al. 2015). The Maxwell plover was in active primary molt, which suggests that it originated from continental Eurasia and not from Iceland. Given its lengthy stay at Maxwell, it is possible that it may have been staging at this location while it completed molting. Continental populations migrate the farthest and travel to the southernmost end of the species' winter range on the Mediterranean coasts of Europe or Africa and make abrupt long-distance flights in response to cold weather (Machín et al. 2015). Long-distance migrants from the continental population are more likely to produce a vagrant so far out of its normal range than is the Icelandic population, which makes a shorter flight to the British Isles for the nonbreeding season (Hayman et al. 1986, Wiersma et al. 2016). However, European Golden-Plovers presumably from Iceland have been observed in active primary molt upon arrival in Ireland between the months of August and October (K. Mullarney pers comm.). Furthermore, given the variability of molt among contour feathers between individuals or populations, due to age or environmental variables, especially in migratory shorebirds (Conklin and Battley 2012, Remisiewicz et al. 2017), active primary molt alone may not be a character reliable enough to reveal the origin of the Maxwell plover.

We thank Larry Sansone for providing an excellent photograph, Peter Pyle for providing useful comments about the bird's age, and Tony Godfrey for his timely alert to the New Mexico birding community about the Maxwell plover. Jon Dunn provided valuable information about the California European Golden-Plover record. Jessie Williamson, Michael L. P. Retter, Adam Searcy, and Killian Mullarney provided helpful reviews of the manuscript.

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“Featured Photo” by © Jack B. Parlapiano of Albuquerque, New Mexico: European Golden-Plover (*Pluvialis apricaria*), Maxwell National Wildlife Refuge, New Mexico, 28 September–25 October 2020, representing the first record of this species for New Mexico and the second for western North America. Note the diagnostic clean white axillaries. Pectoral Sandpiper (*Calidris melanotos*) in the background.