Field identification of forms of Lesser Golden-Plover

J. L. Dunn, J. Morlan, and C. P. Wilds

Recently Connors (1983) argued that the two races of Lesser Golden-Plover *Pluvialis dominica* are actually full species. This argument has been accepted by Hayman *et al.* (1986) and reportedly by the British Ornithologists' Union. The American Ornithologists' Union (1983, 1984, 1985) has not accepted this proposed split.

Connors was able to separate 96% of breeding-plumaged specimens, using a discriminant function analysis of measurements. The percentage of intermediate birds was the same in areas far from the zone of contact as it was in areas close to this zone. Connors was unable to detect a cline of intergrades or a hybrid zone, and he concluded that the two taxa must be reproductively isolated through assortative mating.

Connors proposed the English name "American Golden-Plover" for the North American form *dominica* and "Pacific Golden-Plover" for the Asiatic and Pacific form *fulva*. This arrangement is followed by Hayman *et al.* In this paper we use the names *fulva* and *dominica* to designate these taxa without taking a position on their actual taxonomic level. For an argument against the proposed split, see DeBenedictis (1984).

Breeding Range

Dominica breeds in North America from the Bering Sea across northern Alaska and Canada east to Baffin Island. As late as 1900 it was an uncommon breeder in the Anadyr Range and in the Chukchi Peninsula in extreme northeast Siberia, but it was extremely rare west of the Bering Straits by 1939, when Portenko (1981) found a nesting pair on Wrangel Island.

Fulva breeds in Alaska along the Bering sea and up the northwest coast to Point Barrow, on the Chukchi Peninsula south to the Gulf of Anadyr, and along the Arctic coast of Siberia west to the Yamal Peninsula and south to the tree line (Portenko 1981).

Winter Range

Dominica winters entirely in South America, from Bolivia, Paraguay and southern Brazil south to northern Argentina and (rarely and irregularly) northern Chile (Blake 1977). There are no definite winter records of *dominica* in North America; a specimen from Texas in January (Oberholser 1974) requires confirmation.

Fulva winters in eastern Africa south to Tanzania (especially in Ethiopia and Somalia); in very small numbers from Israel to Oman; around the Indian subcontinent to southeast Asia, southern China, Indonesia, Australia, and New Zealand; and throughout the Pacific from the Philippines to Hawaii and the Tuamotu islands (American Ornithologists' Union 1983, Cramp and Simmons 1983). It also winters regularly in small numbers in a few locations in coastal California.

Migration

Dominica's southbound migration route is mainly across Canada to northern Ontario, then over the Atlantic to the Lesser Antilles and northern South America. It is an uncommon transient along the North American east coast from Newfoundland and Nova Scotia to North Carolina, but is rarely reported farther south. Some juveniles follow a route south through central North America.

In spring almost all birds travel through interior South America, up Central America, and across the Gulf of Mexico, making landfall in the Gulf states. Final passage is primarily up the Mississippi and Missouri valleys and across the Canadian prairie provinces to the breeding grounds.

Fulva's migrations are more diffuse, in apparently direct flights across the Pacific and Siberia. In North America, it is an uncommon migrant down the west coast.

Vagrancy

Dominica is a rare migrant along the North American west coast, mostly in autumn, and along the east coast in spring. It is almost annual in autumn as a vagrant to the British Isles and continental Europe. There are several sight records from west and northwest Africa (Urban *et al.* 1986),

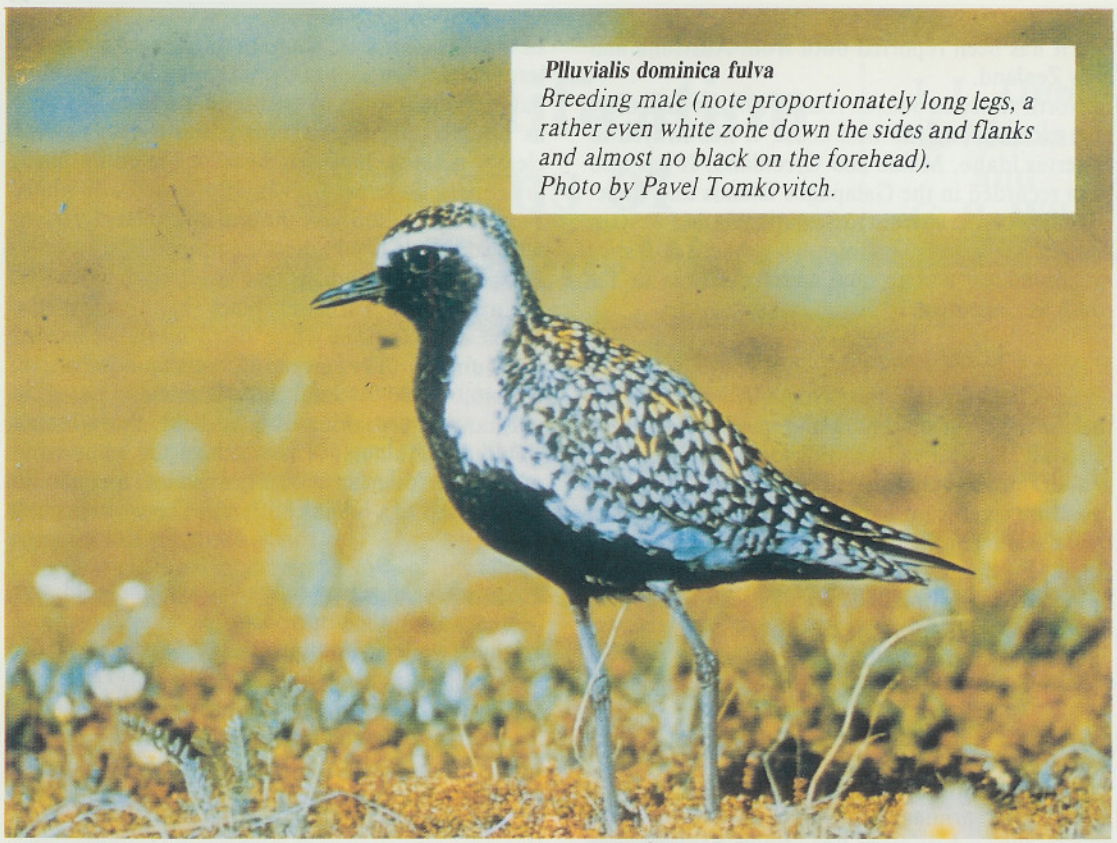
and it has been reported both from Australia and New Zealand.
In North America outside Alaska *fulva* is extremely rare except along the west coast. It has strayed to Alberta, Idaho, Maine and Greenland. It has also been recorded in the Galapagos Islands and Chile. *Fulva* is a casual vagrant to Scandinavia and western Europe, including the British Isles, where *dominica* predominates, and to southeastern Africa as far south as Capetown.

Habitat
Observations by JLD near Nome, Alaska, indicate that *fulva* breeds on tundra and marsh edges along the coast and river valleys, while *dominica* occurs on well-drained mountain slopes. Connors, however, found no significant habitat differences, with both forms nesting on well-drained tundra and mountain slopes. Further studies on the breeding grounds are needed to clarify possible habitat selection there. In migration both forms occur together on grazed pastures in California.

Field Separation
Structure: The best character is the number of exposed primaries past the folded tertials. *Dominica* has a longer primary projection, with four or five clearly exposed primary tips. *Fulva* has a shorter primary projection, with only three exposed primary tips on the folded wing. On both forms the outer two primaries are nearly equal; thus, very close views or sharp photographs may be necessary to establish the difference. We do not advocate using this distinction on molting birds that are missing tertials or primaries or on worn birds on which heavily abraded tertials may reveal an additional primary. Nevertheless, on freshly molted birds in equivocal or intermediate plumages primary projection may be the best single field character.
Fulva averages smaller and slimmer than *dominica* but has a proportionally longer bill and slightly longer legs. These differences are difficult to use with precision, although they may be useful as preliminary clues.
Breeding plumage: The best character in breeding males is the pattern of the underparts. *Fulva* has a small white patch on each side of the breast continuing as a line down the flank, and the undertail-coverts are largely white, recalling Greater Golden-Plover *P. apricaria.* Breeding male *dominica* has larger, bulging patches on the sides of the breast often nearly meeting across the front; otherwise the underparts are entirely black.
In breeding females, plumage differences are much less evident, but *dominica* still shows bulging white patches on the sides of the breast in the same shape as on breeding males. This pattern is much less clearly defined, however, because the entire black area on the underparts is variably flecked with white. Female *fulva* often have the underparts largely white with very little black, mostly confined to the belly.
In both sexes *fulva* differs from *dominica* in having, on average, a narrower black band across the forehead, so that the white nearly meets the base of the culmen. (The mean difference, however, is 0.9mm, and the measurements overlap substantially, making this a field character of dubious usefulness). The width of the white band across the forehead is highly variable, and should not be used as a reliable difference between the two forms.

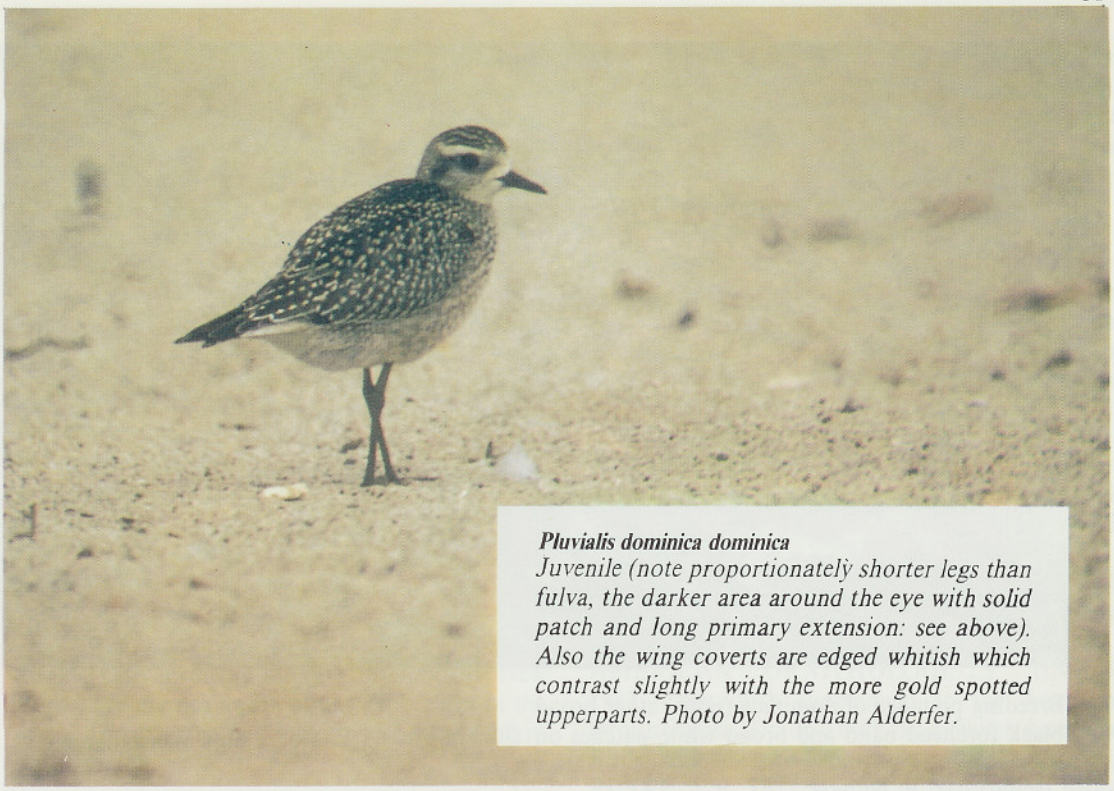
Fulva often appears brighter above, the gold and white spots on the upperparts averaging larger and brighter, while on *dominica* the gold and white spots are smaller, resulting in a generally darker overall coloration. There appears to be some difference in the amount of contrast between the mantle and the wings in the two forms. On *fulva* the predominantly gold-spotted mantle often contrasts with the predominantly white-spotted wings. On *dominica* the mantle tends to be less spotted with gold and the wings more gold-spotted, resulting in a pattern with less contrast. This difference is presented here as only a tentative observation needing further confirmation.

Juvenile and winter plumages: The upperparts are much more yellow in *fulva*, again suggesting Greater Golden-Plover. *Dominica* is much grayer (except on the rump) recalling Black-bellied (Grey) Plover *P. squatarola.*
In *fulva* the entire facial area is usually suffused with yellow. In *dominica* yellow is usually absent on the face or confined to a slight wash on the supercilium. *Dominica* has a solid dark area of variable width from just in front of the eye through the ear-coverts. *Fulva* has a pale area immediately around the eye, and the ear-coverts tend to form a distinct post-ocular spot separated from the eye.
On *fulva* the nape is paler, less streaked, and much yellower than on *dominica.* The cap and mantle of *dominica* are darker with smaller gold spots, giving it a better-defined cap and darker area on the upper back. *Dominica* usually lacks yellow on the nape except for a small amount near the top on individuals with a yellow-tinged supercilium.

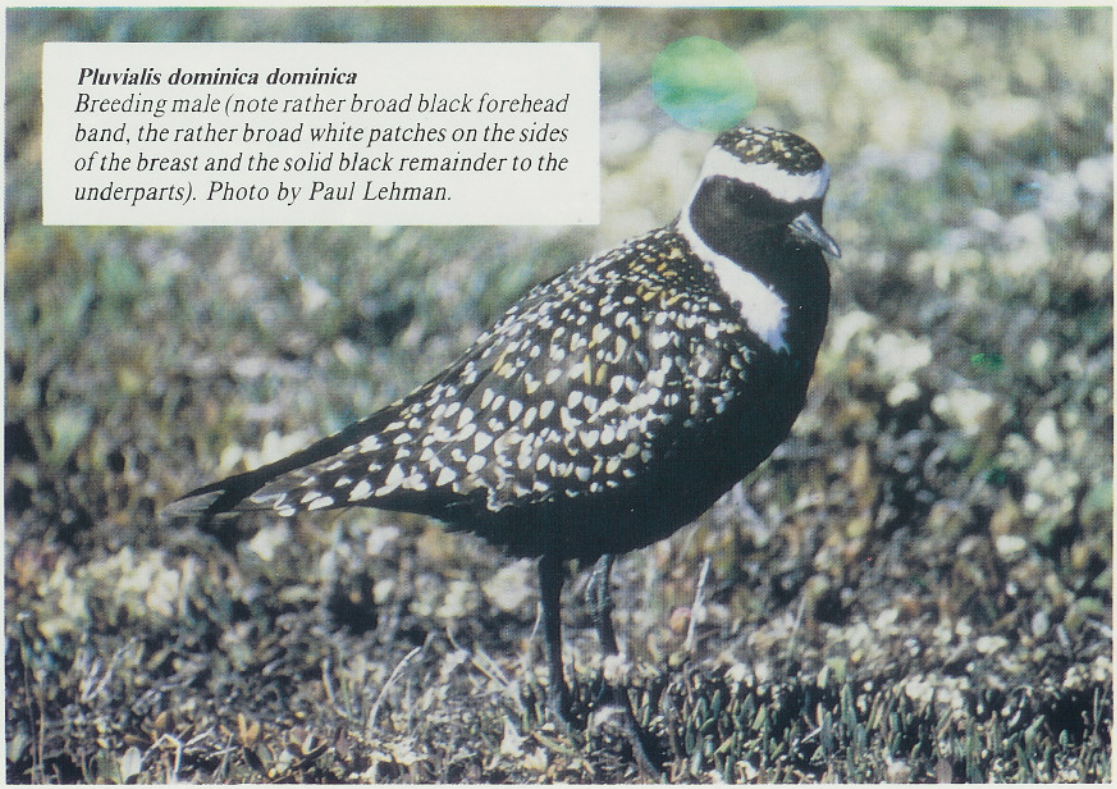


Plluvialis dominica fulva
Breeding male (note proportionately long legs, a rather even white zone down the sides and flanks and almost no black on the forehead). Photo by Pavel Tomkovitch.

Pluvialis dominica fulva
Juveniles (Note less dark around face, the bright gold upperparts including the wing coverts, and rather short primary extension with only three exposed primaries past the longest tertial). Photos by Ed Harper.



Pluvialis dominica dominica
Juvenile (note proportionately shorter legs than fulva, the darker area around the eye with solid patch and long primary extension: see above). Also the wing coverts are edged whitish which contrast slightly with the more gold spotted upperparts. Photo by Jonathan Alderfer.



Pluvialis dominica dominica
Breeding male (note rather broad black forehead band, the rather broad white patches on the sides of the breast and the solid black remainder to the underparts). Photo by Paul Lehman.

Breeding plumage of dominica (note rather broad black forehead band and broad white patches on sides of breast). Photo by Alan Wormington.

Juvenile dominica (note dark eye patch extending in front of and behind eye that almost connects to post ocular spot. Also note the long primary extension with fully four exposed primaries past the longest tertial). Photo by Alan Wormington.

Most birds can be separated by overall color and pattern, but a substantial number of individuals show ambiguous plumage patterns or appear intermediate. On such problem birds, we recommend using the number of exposed primaries past the tertials, discussed above. Some birds are best left unidentified, given the current state of our knowledge. Caution is especially needed in sight-records of birds outside their respective ranges.

It should be noted that juvenile Black-bellied Plovers in fresh plumage may appear extensively gold-spotted on the upperparts and buff-washed on the breast, causing confusion with *dominica*. In addition to structural differences, the paler crown and short, ill-defined supercilium of *squatarola* are useful field characters.

Voice

A thorough study of the vocalizations of both forms is badly needed. Both apparently have complicated repertoires. A study by Urner (1933) described 20 distinct calls given by migrant *dominica* in New Jersey. We are not aware of any differences in the vocalizations of the two forms which are useful in identification.

Discussion

Much additional work needs to be done on the breeding grounds to further clarify the taxonomic status of the two forms. In particular, differences in display and vocalization may be critical in determining isolation mechanisms that may prevent hybridization in the areas of contact. The percentage of mixed pairs and the success of hybrid offspring are currently unknown. Hybridization would certainly complicate field indentification, particularly on the North American west coast where hybrids would be most likely to occur.

Additional work is also needed in field identification. Many of the points we suggest here need further testing and corroboration in the field and in the museum. Other characters may be discovered which may clarify field identification and possibly shed light on the taxonomic status of the two forms. It is particularly important to be able to distinguish true hybrids from extreme variants within a population. There is enough variation in the plumages of these forms to make confirmation of hybridization a difficult and controversial subject. We urge that intermediate birds should not be interpreted as hybrids until the variability of known plumage characters becomes clear. We also suggest great caution in identifying any individual that does not show the typical pattern of one type or the other, particularly in the case of out-of-range birds. We hope that further fieldwork in western North America may help to clarify the identification and status of these two forms, as this is the only area where both forms regularly occur together.

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J. L. Dunn, 4710 Dexter Drive, Apt. 7, Santa Barbara, CA 83110, U.S.A.

J. Morlan, 417 Talbot Avenue, Albany, CA 94706, U.S.A.

C. P. Wilds, 3331 N Street NW, Washington, DC 20007, U.S.A.