

## GENERAL NOTES

**The *pikai* Plumage of the Least Tern.**—In a previous paper concerning plumage sequences of the Least Tern (*Sterna albifrons*) we mentioned the presence on southern California breeding grounds of birds which were intermediate in head pattern and bill coloration between first alternate (*portlandica*) plumage and definitive alternate (nuptial) plumage (Massey and Atwood 1978). At the time we had no conclusive banding data regarding the age of these birds, and suspected that such individuals, referred to as being in *pikai* plumage (Lawrence 1853, Cullen 1957, Grant et al. 1971), might be 2-year-olds that had failed to fully acquire definitive alternate plumage. However, we did not exclude the possibility that *pikai* individuals were "hormonally advanced" 1-year-olds in a first alternate plumage distinct from *portlandica*.

As a result of ongoing research on the endangered California population, we have now obtained a minimum of 11 recoveries of color-banded, known-aged Least Terns in *pikai* plumage, and all have been one year of age. Furthermore, of at least 40 known 2-year-olds which have now been recovered within the breeding range, all have acquired full definitive alternate (nuptial) plumage with no evident tendencies toward *pikai* characters.

Therefore, both *portlandica* and *pikai* plumages should be considered representative of the species' first-summer plumage. This plumage is best described by wing characteristics, which consist of dark gray cubital bar and dark gray inner, as well as outer, primaries. Head characteristics of the first alternate plumage appear quite variable, with *portlandica* (black bill and black eye stripe extending back on head to form nuchal collar) and *pikai* (yellowish bill with varying amounts of dusky or blackish and head pattern approaching that of nuptial plumage but with considerable white flecking in the black crown) merely being two extremes of a single continuum.

California Least Tern banding operations were conducted under authorization of state and federal banding permits and Endangered Species Banding Permit PRT-8-207-B-C issued to Charles T. Collins.

### LITERATURE CITED

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**Avian Predation on Winter Stoneflies.**—Stonefly (Plecoptera) larvae comprise a significant part of the diet of trout and other freshwater fishes (Eddy and Underhill 1974), but little is known of terrestrial mortality in these insects. Many species emerge during late winter and early spring when ambient temperatures at northern latitudes are frequently near or below freezing and snow cover is present. As they emerge to mate, slow moving adults are conspicuous against the snow, making them vulnerable to avian predators.

From 19-25 March 1980, I observed four species of birds feeding on stoneflies (*Taeniopteryx nivalis*) emerging from the Chippewa River and one of its tributaries near Mt. Pleasant, Michigan. Ambient temperatures ranged from -4° to +6°C during observation periods, and water was free of ice. Patches of snow persisted on banks protected from direct sunlight, but 5 cm of snow fell on 25 March.