

TABLE 1. Measurements of oystercatchers.

	<i>H. ater</i> (7♀) ¹	Hybrid	<i>H. leucopodus</i> (8♀) ²
Exposed culmen	73.0–83.4 (77.4) mm	84.5	73.5–84.8 (78.2)
Bill depth	15.0–16.5 (15.9) mm	12.0	8.5–10.8 (9.8)
Bill depth/length	.20–.22 (.21)	.14	.11–.13 (.12)
Wing (flat)	255–280 (267.5) mm	260 ³	253–263 (257.1)
Tarsus	54.2–62.6 (56.9) mm	59.6	44.0–50.4 (48.9)
Weight	775–790 g ⁴	700	585–610 ⁴

¹ From Magellanic Region of Chile, Argentina.

² From Magellanic Region of Chile, Argentina, and Falkland Islands.

³ Slightly worn.

⁴ Two females.

ser primary coverts grayish, rest of underwing largely whitish, but darker and more mottled than in *leucopodus*.

Measurements of the hybrid are compared with those of *ater* and *leucopodus* in Table 1.

DISCUSSION

The relatively large size of the hybrid and its intermediacy in plumage characters between *ater* and *leucopodus* leaves no reasonable doubt of its parentage. Hybridization between *ater* and *palliatu*s can be ruled out on the basis of the slender bill, darker back color, greater extent of the chest band, and the color of the orbital ring; further, the specimen does not match any of a large series of *ater* × *palliatu*s (or *bachmani* × *palliatu*s) hybrids (specimens in San Diego Natural History Museum). Hybridization between *palliatu*s and *leucopodus* can be excluded on the basis of the hybrid's large size, reduced white in the wing, and mottled flanks, belly, undertail coverts, and rump.

Although taxonomists disagree on the number of oystercatcher species that should be recognized, there is no dispute with respect to *ater* and *leucopodus*: they are good species by any standards. *Ater* is a large, stout-billed, heavy-bodied melanistic oystercatcher that is resident on rocky coasts; it feeds principally on mussels and other intertidal mollusks. *Leucopodus* is a small, slender-billed, pied species that inhabits sandy beaches in the Falklands (Woods, Birds of the Falkland Islands, Nelson, 1975) but in southern Patagonia and northern Tierra del Fuego

breeds in pastures; it seems to feed mainly on earthworms. At least part of the population is migratory, as flocks occur as far north as Chubut Province, Argentina, in winter (Jehl et al. 1973).

As Blackish and Magellanic oystercatchers occur sympatrically without known interbreeding along more than 1800 miles of coastline, from Santa Cruz Province, Argentina, southward through the Magellanic region (and the Falkland Islands) and north to Chiloé Island, Chile, the failure of isolating mechanisms in this one case is interesting. I collected the hybrid near the northern edge of *leucopodus*' range in Patagonia. Obviously, the probability of mixed matings is greater near the edge of a species' range, where opportunity for normal mate choice is limited. Recall, however, that all three species of South American oystercatchers overlap in this area, and that *ater* and *palliatu*s hybridize there with appreciable frequency (Jehl, unpubl. data). The mating preference of their hybrids is unstudied, but I would expect such birds to be at a disadvantage and therefore more likely to participate in mixed pairings. It is even conceivable that one dark parent in the *leucopodus* × *ater* cross described above was itself of *ater* × *palliatu*s ancestry. Plumage and mesural characters are inadequate to test this idea.

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BEHAVIOR OF A PAIR OF SANDHILL CRANES ON THE DAY OF NEST DESTRUCTION

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On the morning of 23 May 1967 a Sandhill Crane (*Grus canadensis tabida*) nest was destroyed on Malheur National Wildlife Refuge, Harney County, Oregon. Examination later showed that a raccoon (*Procyon lotor*) had consumed the eggs' contents. I had spent the night near the nest intending to watch

the pair's incubation activity. The following is a description of their behavior on the day of nest destruction.

04:00–06:00 PDT. At 04:18 it was dark when the incubating female gave numerous alarm calls as the eggs were being destroyed by the raccoon. It was not until 05:10 that the pair could be seen. Both members were feeding about 90 m south of the nest. At 05:23 both flew to the nest site. The male landed about 15 m south and assumed an alert posture by standing with the neck extended and the tail lowered, while the female walked onto the nest. She positioned her legs as if getting ready to incubate,

but instead of sitting down she stepped from the nest and began eating egg remains. The male slowly walked south and the female walked in the opposite direction, but she soon returned and consumed more shell fragments. She then walked toward the male, giving alarm calls. The pair fed for 10 min, then again walked toward the nest but continued walking past it. The male stopped near the site and briefly danced. At 05:50 both gave an "arched-neck" threat display (Littlefield, Breeding biology of Sandhill Cranes, M.S. Thesis, Colorado State University, 1968), and copulated shortly afterward.

06:00-10:00. At 06:15 the pair gave a unison call (described by Walkinshaw, Mich. Acad. Sci. Arts Letters 50:75-88, 1965; discussed by Archibald, Proc. Int. Crane Workshop 1:225-251, 1976); the female then initiated nest construction behavior by picking up vegetation with the bill and dropping it back over the shoulder. The pair returned to the nest at 06:40 and picked up shell fragments which they broke in the water, eating the smaller pieces. When they flew back to the nest, the female assumed an "arched-neck" threat display upon landing. More alarm calls were given and after seven minutes they left the site. The pair walked to the south end of their territory and a conflict ensued with a neighboring pair at 08:15. The conflict continued for 40 min before feeding was resumed.

10:00-14:00. A male from an adjoining territory approached the pairs' territory at 11:21. The pair

gave a unison call and performed a "bill-down" threat display (Littlefield 1968) and then resumed feeding after the intruder left. At 13:38 they returned to the nest and gave a unison call. The male walked away, the female stepped onto the nest, stood briefly, then joined the male and both started to feed. Three unison calls were given within nine minutes.

14:00-19:00. At 15:27 several neighboring pairs gave unison calls, as did the pair being observed. Feeding continued until 16:44 when copulation occurred. The pair walked away from the feeding area at 18:08 and gave a unison call. After a brief departure from their territory, the birds fed until dusk.

Copulation occurred twice after the eggs were destroyed. This is the latest known date for Sandhill Crane copulation on Malheur Refuge. Perhaps copulation is normal shortly after a pair has lost a nest, even into June.

During the day of nest destruction, the cranes lost interest in the nest and spent more time feeding. From 05:10 to 12:10 they fed, preened or loafed 68% of the time (284 min), compared with 98.5% (414 min) from 12:10 to 19:10. The pair had left their territory by 1 June and did not attempt to re-nest.

Denzel E. Ferguson and Caryn E. Talbot reviewed and commented on the draft of this note.

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ALARM CALL OF CRESTED GUAN WHEN ATTACKED BY ORNATE HAWK-EAGLE

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On 7 January 1977 my wife and I were watching birds from a Mayan ruin at Tikal, Peten, Guatemala; the steep edge of a plateau enabling us to look into the surrounding forest at mid-tree level. Two Crested Guans (*Penelope purpurascens*), then two more, flew to an open limb 12 m from us. They appeared undisturbed until they suddenly flew off in four directions in response to a hawk my wife saw fly in among them. We then heard an outcry of screams from one of the guans. The screams were so loud and piteous that I wondered if the bird had not been caught and was being killed. Mixed with the screams were guttural sounds and growls that made me wonder whether the bird might not have been caught by a jaguar (*Panthera onca*).

When I crept forward for a closer view, I found the guan perched in the middle of a tree, apparently unharmed, but continuing both the screams and growls. It suddenly flew directly toward me pursued by a hawk. The guan slipped into the center of a medium-sized tree 6 m from me, but the hawk was stopped by the tangle of outer branches. Here it clung with tail outspread and wings beating for

some moments, then left. It was an Ornate Hawk-Eagle (*Spizaetus ornatus*).

While the hawk-eagle clung to the outside of the tree the guan continued its screams and growls, but when the predator left, it immediately changed to "cawk, cawk, cawk" notes at a rate of 144 per minute. These it continued for three minutes. The guan then became silent and began to preen.

The cries of the guan under attack might be rated with the roars of Howler Monkeys (*Alouatta palliata*) as one of the loudest and most dramatic sounds that one is likely to hear in the American tropics.

Alarm calls of passerines have been much discussed; older authors suggested that the bird giving the alarm calls is altruistic, exposing itself for the good of others. More recently Charnov and Krebs (Am. Nat. 109: 107, 1975) and Rohwer et al. (Am. Midl. Nat. 96: 418, 1976) have argued an opposite point of view. None of the ideas developed in regard to passerines appears to fit the situation of the Crested Guan. The loudness and variety of its vocalizations must have informed the conspecifics of its immediate flock, and probably those of other flocks, of the presence and location of the hawk-eagle.

One hypothesis is that the screams and growls cause hawks to fumble attacks, thus increasing the survival chances of the vocalizer. Predators, in general, depend on being undetected by their prey for success. A barrage of sound might, therefore, warn a hawk that it was not only observed, but that its