

NOTES ON THE ROYAL TERN IN URUGUAY

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The Royal Tern (*Thalasseus maximus* [= *Sterna maxima*]) is currently reported in the literature only as a winter visitant on the South American mainland (Meyer de Schauensee 1966), migrating from breeding grounds in North America and the West Indies. A few Royal Terns have been reported as breeding on Caribbean islands near the coasts of Venezuela and Surinam, but these do not form large or regular terneries (Junge and Voous 1955; Phelps and Phelps 1955 [see Voous 1957]; Ansigh *et al.* 1960; French and Collins 1965). There do not appear to be any definite breeding records anywhere on the South American continent or any of its offshore islands south or east of Trinidad (A.O.U. 1957; Cuello and Gerzenstein 1962; Olrog 1963; Koepcke 1964; Meyer de Schauensee 1964; Pinto 1964). Information presented in the following report suggests that Royal Terns may breed much farther south than has been previously thought, and perhaps on or near the coast of Uruguay.

Nonbreeding Royal Terns have already been reported in many places in South America during the period of the Northern Hemisphere summer. In Ecuador, Chapman (see Murphy 1936: 1139) recorded the species as not uncommon on 20 July, but noted that "... the sex organs of all such birds were in a dormant state." Marchant (see Lévêque 1964: 59) also recorded this tern in Ecuador throughout the year, but there was no evidence of breeding. On the Atlantic coast, in Brazil, Saunders (1896:83) reported Royal Terns collected in July and August; Pinto (1938:152) mentioned birds collected in August 1910; Sick and Leão (1965) recorded 30 Royal Terns at Ilha de Santana and Ilha do Francês, Cabo Frío, on 12 July 1963, but found none nesting.

These data by themselves do not support the view that the Royal Tern breeds in these places. Eisenmann (1951) has already shown that banded terns, including Royal Terns, hatched in the United States may be found during the following Northern Hemisphere summer still on or near their winter quarters. However, Junge and Voous (1955) express the view that some large eggs (60-64 × 43 mm) from Brazil ascribed by von Ihering (1900) to *Sterna eurygnatha* "... probably belong

to *Sterna maxima*." On the other hand, Pinto (1964) avoids any statement that the Royal Tern breeds in that country.

For Argentina, a search of the literature has yielded two relevant records. Grant (1911) mentions an adult male Royal Tern "in full winter plumage" collected at Río Ajó, Argentina, on 1 March 1910. Wetmore (1926) reported that a male in full plumage was obtained near Cape San Antonio (Prov. Buenos Aires, Argentina) on 4 November 1920. I have asked Dr. Wetmore about details of this specimen and for his opinion concerning its status. He tells me (*in litt.*):

I have made a careful examination of the specimen to find that it is an individual with nuptial feathering practically complete. On a close scrutiny, the following still remain from the prenuptial plumage: a spot of white about 3 mm. long at the base of the culmen, 4 or 5 very short older feathers adjacent, and two others of the older stage in the center of the fore crown at the anterior level of the eyes. Also the second tail feather from the outside on the left has not been renewed. The crown shows a few tiny scattered spots of white on its anterior area, but the posterior half and the long crest are wholly black. . . . Measurements are as follows: wing (chord) 380, tail 184, exposed culmen 61.7, tarsus 34.1 mm. . . . The condition of the plumage at the date of November 4 was a surprise for me and I have wondered since whether there might be breeding colonies in this southern area. . . . I assure you that it is *maximus* and not the race found on the coast of Africa.

On the basis of these observations from several sources it seems that the status of the Royal Tern in Uruguay merits further study. I have therefore assembled the information available on this subject.

URUGUAYAN OCCURRENCES

Royal Terns have been observed and collected along the Atlantic coast of Uruguay during most of the months of the year. Measurements of the skins in Uruguayan collections are given in table 1. The mean and range of measurements (in mm) of the wing chord and exposed culmen, respectively, are as follows: 4 ♂♂, 361.7 (346-368), 62.8 (55.7-66.4); 9 ♀♀, 376.8 (344-381), 63.1 (58.7-69.0).

In addition to these specimen records, I have obtained sight records of Royal Terns in Uruguay through most of the year, including the austral early spring and summer when birds breeding in or near the area might be

TABLE 1. Measurements (in mm) of skins of *Thalasseus maximus* in Uruguay

Specimen Number ^a	Date	Sex and age ^b	Wing (Chord)	Tail	Culmen	Tarsus	Middle toe ^c
1638	28 May 1961	♂ Sub.	366	162	66.4	34.3	25.3
1639	28 May 1961	♂ Ad.	346	137	65.6	35	26
1640	28 May 1961	♀ Sub.	357	165	58.7	32.8	26.7
1641	28 May 1961	♀ Sub.	370	142	62.2	34.3	25.1
1642	28 May 1961	♀ Juv.	355	135	61.2	35.7	26.4
1643	11 June 1961	♀ Sub.	344	192	67.8	33.2	24.8
1644	11 June 1961	♀ Ad.	359	185	62.9	36.2	24.3
547	18 March 1957	♀ Ad.	370	140 ^d	69	34.4	23.7
574	27 January 1959	♀ Ad. (P)	375	150	61.7	35	24.8
613	17 March 1963	♀ Ad.	371	190	64.9	35	24.8
617	5 August 1963	♀ Sub.	375	165	61	35.8	25.6
459	20 September 1959	♀ Sub.	360	160	61.6	34.9	25.9
763	20 September 1959	♂ Ad.	367	195	63.5	33.6	25.9
100	9 February 1967	♂ Juv.	368	147 ^d	55.7	34.4	24
487	16 February 1967	♀ Ad.	381	147	63.2	34	25.4
488	16 February 1967	♀ Ad.	380	185	67.4	34.4	24

^a Specimens 1638 to 1644 are from the collection of the Museo de Historia Natural de Montevideo; nos. 547, 574, 613, and 617 are in the private collection of the author; nos. 459 and 763 are in the collection of the Sociedad Taguató; nos. 100, 487, and 488 are in the collection of the Sociedad Guazúbirá and were obtained at Arroyo Solís (Dep. Maldonado). Specimens 1638 to 1644 were obtained at the mouth of Arroyo Pando (Dep. Canelones); no. 547 was collected at Coronilla (Dep. Rocha), no. 574 at Arroyo Sauce, no. 613 at José Ignacio (Dep. Maldonado), no. 617 at Playa Penino (Dep. San José), no. 459 at Arroyo Solís (Dep. Maldonado), no. 763 at La Paloma (Dep. Rocha).

^b Abbreviations: Ad. = adult; Sub. = subadult or immature; Juv. = young or juvenal.

^c Excluding claw.

^d Feathers obviously worn.

expected to be present. The sight records are arranged according to months of the year.

January. Dep. Maldonado: Laguna del Sauce, 27/1959, 8 birds. Dep. San José: Playa Penino, 14/1960, 3 birds; 19/1960, 6 on the wing. **February.** Playa Penino, 29/1960, 1 bird; 11/1960, 1 bird; 20/1964, 1 adult feeding a "young" one; 25/1964, 6 (2 "young" fed by adults). **March.** Dep. Maldonado: Laguna José Ignacio, 17/1963, 5 birds; Playa Buenos Aires, 25/1964, 32 flocking (4 "young" fed by adults); 5/1966, 6 (2 "young" fed by adults); José Ignacio, 23 and 24/1967, 7 birds (4 "young," 1 fed by an adult). **May.** Dep. Maldonado: Punta del Este, 17/1961, 1 bird. Dep. Canelones: Arroyo Pando, 29/1961, 24 flocking on the beach. **June.** Dep. Montevideo: Arroyo Carrasco, 22/1961, 18 flocking; Playa Pocitos, 6/1966, 1 bird; Punta Carretas, 10/1966, 6 birds; Estacada, 10/1966, 8 birds; Trouville, 10/1966, a flock of 15. **July.** Dep. Maldonado: José Ignacio, 16/1961, 1 bird; Arroyo Maldonado, 17/1961, 2 birds; 5/1966, 9 birds; José Ignacio, 5/1966, 8 birds; Playa Buenos Aires, 5/1966, 7 birds; Laguna del Sauce, 7/1966, 23 flocking. Dep. Montevideo: Arroyo Carrasco, 5/1963, 3 birds; 12/1966, 21 flocking. **August.** Dep. Maldonado: José Ignacio, 5/1963, 6 birds; Punta del Este, 25/1964, 4 birds. Dep. Montevideo: Estacada, 11/1966, 22 flocking. **September.** Dep. Maldonado: Arroyo Maldonado, 17/1961, 8 birds (5 with wholly black pileums); José Ignacio, 19/1962, 4 birds; Punta del Este, 16/1963, 6 terns with wholly black pileums; José Ignacio, 23/1966, 2 birds. Dep. Rocha: La Paloma, 23/1966, 2 birds. **October.** Dep. Maldonado: José Ignacio, 12/1964, 1 bird. Dep. Montevideo: Playa Pocitos, 14/1966, 1 bird. **December.** Dep. Maldonado, Punta del Este, 27/1966, 1 bird.

It should be noted that the absence of records in April is due to the lack of field work by the author. The paucity of records in October, November, and December results from a real relative scarcity of birds during those months.

FEEDING YOUNG

As I have mentioned in the preceding section at least 10 "young" Royal Terns being fed by adults were seen on five occasions, and, in all, 15 were recorded through February and March (late summer and early autumn in the Southern Hemisphere), on the Atlantic coast of Uruguay. The young birds being fed were able to fly. It is assumed that they were "young" because they had white foreheads and crowns with dark streaks and a semilunar dark band extending from behind the eye to the occiput, but the feathers of this region did not form any conspicuous crest. The wings were darker or grayer than in adults and also showed a broad and whitish cross-band at the level of the middle coverts (clearly seen when the birds were sitting and the wing was bent). The tail was darker and shorter than in adults. Observations were made with binoculars (8 × 40) at distances between 40 and 60 meters when the birds were sitting or flying. Feeders were birds displaying lighter plumage, with conspicuous crests and with white forehead and anterior crown.

PLUMAGES

Among the 16 skins in Uruguayan collections whose measurements and other data were mentioned in table 1 there are four that deserve special attention.

JUVENAL PLUMAGE

This plumage is exemplified by skin no. 100 in the collection Guazúbirá of Montevideo, ob-

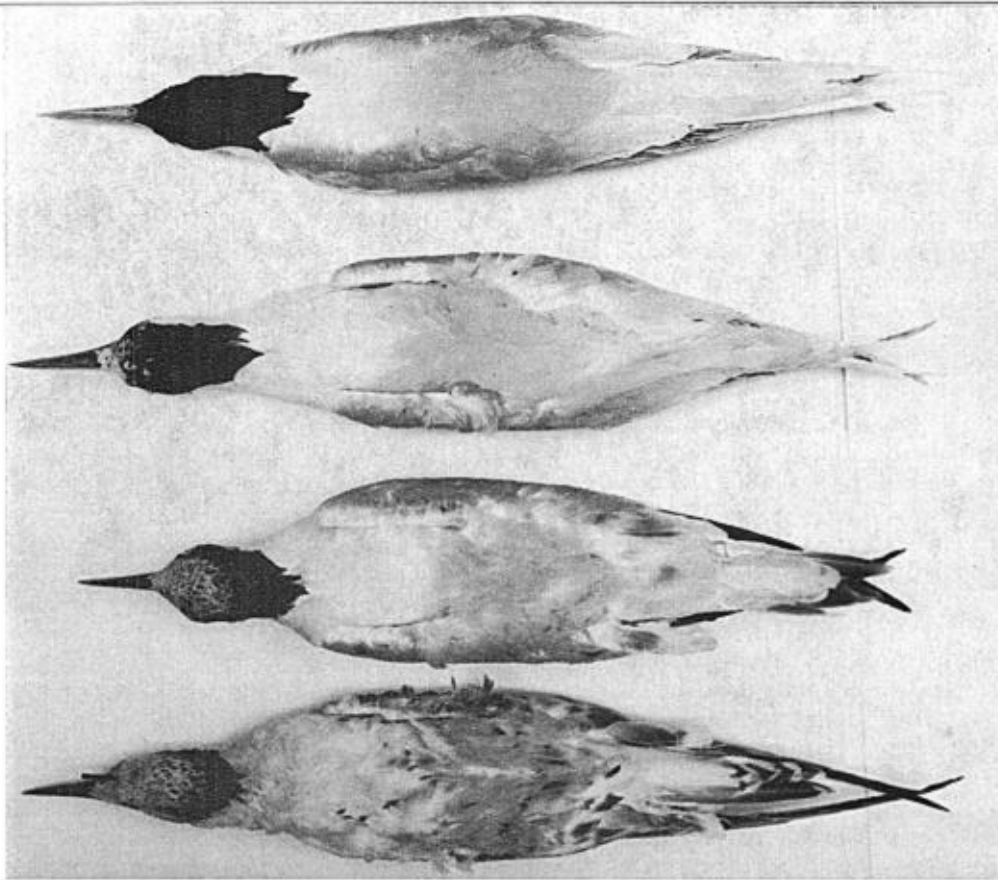


FIGURE 1. Representative plumages of Royal Terns collected in Uruguay. From top to bottom: no. 763, adult male (September); no. 1644, adult female (June); no. 1642, juvenal in first winter plumage (May); no. 100, juvenal in first covering of true feathers (February). See table 1 for additional details.

tained in February (see table 1 and fig. 1 for details). Above: forehead and anterior crown creamy white, posterior crown of the same color but with dusky streaks on the shafts; occiput with dusky or wood brownish (OOS-11/4° of Villalobos-Dominguez 1947) feathers edged with cream. Neck all around, mantle, under surface of the trunk, lining of the wing, and upper and under tail coverts creamy white, with only a few spots of dusky on a few feathers of the mantle. Lower back and rump faint creamy white washed with pale dusky gray. Wings: primaries and secondaries slate gray (U-9/1° of Villalobos-Dominguez 1947) edged with white; inner webs of the three outer primaries with a grayish-black broad streak next to the shaft, the remainder of the inner webs of primaries and secondaries white. Alula and upper greater coverts of primaries slate gray with narrow white tips; greater coverts of secondaries and lesser coverts of the wing drab gray (OOS-14/2°); median secondary coverts creamy white tinged with light drab (OOS-18/2°), forming

a whitish or light band across the upper wing. Rectrices: the outer ones slate gray with white tips and bases of the inner webs; the inner feathers are white with crescentic dusky subterminal spots.

FIRST WINTER PLUMAGE

An example of this plumage is skin no. 1642, in the collection of the Museo de Historia Natural de Montevideo, obtained in May (see table 1 and fig. 1). The plumage is generally similar to the adult one in winter, but the crown is grayish white with dusky spots or streaks and the nuchal crest is brownish black. The wings have brownish-gray primaries, secondaries, and greater coverts; the tertials and lesser coverts are grayer than in the adult. The outer rectrices are brownish gray, but otherwise as in the adult; a growing streamer is dark gray in this specimen.

ADULT WINTER PLUMAGE

Skin no. 1644, in the collection of the Museo de Historia Natural de Montevideo, obtained in June, illustrates this plumage (see table

1 and fig. 1). The forehead is white with some tiny spots of black, but the anterior crown is black heavily streaked with white because of the broad white edges of the feathers. The posterior crown and occipital crest have long black feathers. The back and wings are pale gray. The four outer primaries have a dark gray streak on their inner webs, near the shafts. The tail is deeply forked, and grayish white or paler than the back. The rest of the body is pure white.

NUPTIAL PLUMAGE

This plumage is shown by skin no. 763, in the collection of Sociedad Taguató, obtained in September (see table 1 and fig. 1). The plumage is similar to the adult winter one described above, but the bird has completely glossy black pileum with conspicuously elongated nuchal feathers.

REMARKS AND CONCLUSIONS

The data assembled above show that the Royal Tern is a common resident in summer, autumn, winter, and early spring of the Southern Hemisphere in Uruguay. In the latter season (August and September) some adult birds are in nuptial plumage, and in later summer (February and March) "young" in their first true plumage have been observed and collected. Both facts seem strongly to suggest the possibility that there are breeding colonies on the Atlantic coast of South America in or near Uruguay. This viewpoint was also expressed by Junge and Voous (1955:243) as a result of similar observations of *Sterna eurygnatha* on the Brazilian coast, where breeding of this species was confirmed recently by Sick and Leão (1965). Wetmore's conjectures concerning the breeding of the Royal Tern in Argentina have already been mentioned.

The scarcity of birds during mid and late spring in Uruguay (October, November, and December) suggests that some dispersal of this population occurs at that time and that the birds go to breeding grounds perhaps in the islands just off the coast of Uruguay, or perhaps in the sandy and muddy islets in the extensive brackish lagoons of the Uruguayan coast, or perhaps to more southern latitudes in Argentina. It seems improbable that spring migrants from Uruguay go to the warmer regions of Brazil to breed. The spring-migrant birds seem to return to Uruguay in summer and early autumn when feeding of "young" was observed. These returned birds seem to remain as winter residents in Uruguay to the next spring. The possibility that some Uruguayan birds may be wintering terns from North America and the West Indies, or from

the islands just off the northern coast of South America (for instance, Trinidad, Curaçao, Bonaire, Aruba), cannot be denied, but the probability of this seems to be small on the basis of the evidence now available. Banded specimens from the United States have not been collected in the southern latitudes of the Atlantic coast of South America. Phelps and Phelps (1958) reported a single Royal Tern banded in South Carolina collected in mainland Venezuela. But Pinto (1964) mentions none for Brazil, and has assured me recently (*in litt.*) that as far as he knows there is no record of northern banded specimens recovered anywhere on the Brazilian coast. Uruguayan and Argentinian specimens are in nuptial plumage at a period of the year (August, September, and November) when North American and Caribbean breeders would not be because these birds display this dress and breed from March to May and June (Bent 1921; Junge and Voous 1955; Phelps and Phelps 1955; Voous 1957; French and Collins 1965). Young in their first winter plumage are seen in February and March in Uruguay, while in the United States they are observed in July and August (Bent 1921; Bull 1964: 255). As far as is known, the breeding populations of the offshore islands of Venezuela and Surinam are too small to extend to the extensive coasts in southern latitudes. In relation to this viewpoint, Voous (*in litt.*) expressed to me the opinion that probably the majority of northern migrants in Brazil and Uruguay ". . . in general originates from more northern parts of the Caribbean, including the Bahamas and the coast of the United States." If most of our Royal Terns were of North American or Caribbean origin we might record the highest density of population in October, November, and December; but the birds are scarce or absent during this period. The reverse might be expected through March, May, and June, but in these months we find the highest density in our records.

Therefore we can assume tentatively that most Uruguayan Royal Terns belong to a different population breeding in the Southern Hemisphere. In order to examine this hypothesis we need more field work not only in Uruguay but also in Brazil and Argentina. Nonvolant chicks, nests, eggs, or nesting birds must be obtained, and a thorough examination of the gonadal condition of adults must be made.

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