Published from 1950 to 2004, the short papers of the *Postilla* series reported on original research by the Yale Peabody Museum of Natural History’s curators, staff, and research associates, and their colleagues, in the natural science disciplines represented by the collections of the Museum’s curatorial divisions.

The *Postilla* series, which ceased publication with Number 232 (2004), was incorporated into the journal *Bulletin of the Peabody Museum of Natural History*, available from BioOne Complete at https://bioone.org/.

Yale Peabody Museum scholarly publications are archived through EliScholar, a digital platform for scholarly publishing provided by Yale University Library at https://elischolar.library.yale.edu/.

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. https://creativecommons.org/licenses/by-nc-sa/4.0/
NOTES ON SOUTH AMERICAN FLAMINGOS

Luis E. Peña*

INTRODUCTION

During the Chilean winter of 1957 we had our first contact with the Andean species of flamingos on an expedition organized by the Yale University Peabody Museum of Natural History to the high ranges of the Andes in the province of Antofagasta, Chile. Later, in the summer of 1957-1958, we visited this region with Dr. Roger Tory Peterson and stayed there for a month studying these birds. In the summer of 1960, together with Dr. William G. Conway, Director of the New York Zoological Park and Mr. Bates Littlehale of the National Geographic Society, we spent another month on this work, and later, during the month of March of 1960, we extended the expedition for an additional few weeks traveling through the Patagonian region of Argentina. Recently, between October 1960 and March 1961, we made another expedition to the Patagonian region, including Tierra del Fuego.

DESCRIPTION AND DISTRIBUTION

Three species of flamingos that live and nest in the mountains in the province of Antofagasta, Chile and the neighboring

* Casilla 2974, Santiago, Chile.
Figure 1. Outline maps of South America showing distribution of *Phoenicocpterus chilensis* Molina, *Phoenicoparrus andinus* (Philippi) and *Phoenicoparrus jamesi* (Sclater).
region of Bolivia have been identified and observed (a fourth species called “Guajchatata” by the natives was not identified):

*Phoenicopterus chilensis* Molina is characterized by the lack of black coloration on the sides and back of the body when it is at rest. The reddest part is on its tail (figure 3 A and B). Geographically it is the most widely spread, having been found on the high Andean ranges of Peru and Bolivia, in the Patagonian region of Chile and Argentina including Tierra del Fuego, in Southern Brazil and in Uruguay. It is the only species that during certain months lives close to the sea. The natives call this bird the “Tococo,” named for its cry.

*Phoenicoparrus andinus* (Philippi) has a black fringe on its tail and has been called the “Black Tail Flamingo.” The winey coloration is very marked at the base of the neck and part of the chest (figure 4 A and B). This species is characteristic of the Andean region between 15° and 27° latitude south. It permanently inhabits the marshes and lakes of brine or of fresh water. It has been found throughout the year in the

---

Figure 2. The camp at Lejía Lake (Antofagasta Andes Range) at 12,200 feet above sea level where *Phoenicoparrus jamesi* (Sclater) was found in large numbers.
Atacama lake in Antofagasta, Chile, in Champaja, Argentina and in Lake Titicaca in Peru and Bolivia. The native name for this species is “Jetete” or “Jititi.”

*Phoenicoparrus jamesi* (Sclater) has two red stripes which fall gracefully over its wings; they are almost plume-like and arise from the upper part of the back. The black plumes are seen only as spots on the sides. The neck and chest are of a very winey color (figure 5 A and B). The colors of the feet and beak as distinguishing features are of less importance, as from a distance one is all too likely to make a mistake, these parts of the body being often covered with mud. This species is typical of the high shallow Andean salt lakes, where they nest in large colonies. It has been observed in the Laguna Colorada, Bolivia, in the Laguna de Lejía, Antofagasta, Chile, and in the Salar de Atacama, Antofagasta, Chile in July 1957. It has also been collected in Lake Titicaca, Peru and Bolivia, and in Abrapampa, Argentina. The native name for this bird is “Chururu.”

**Migration**

Nesting colonies, always homogeneous as to species, on Laguna Colorada and in the Laguna Verde, both on the Bolivian-Chilean border, were visited on different occasions in the months of December, January and February. In general we were able to determine that the resident species of the regions of high altitude is *Phoenicoparrus jamesi*; of the regions of intermediate altitude, *Phoenicoparrus andinus*; and of the lower regions, *Phoenicopterus chilensis*, which wanders into the higher altitudes at intervals.

*Phoenicoparrus andinus* (Philippi) and *Phoenicoparrus jamesi* (Sclater) are both extremely common, numbering in the thousands while *Phoenicopterus chilensis* Molina did not seem to form such large flocks, except perhaps in the Patagonia of Argentina. At the end of spring (November and December) both species of *Phoenicoparrus* are around the high marshes and salt lakes which are over 4,000 meters high and frozen during the winter. At the end of February, March or April they return to the areas of milder climate, the Andean marshes and lakes of lower altitude (2,300 to 3,500 meters). Although
Ph. andinus prefers to nest in the marshes of lower altitudes, we have not confirmed that personally.

Phoenicopterus chilensis Molina invades the Chilean and Argentine Patagonian region up to Tierra del Fuego, the central region of Chile (coast of Santiago province to the island of Chiloé), disappearing totally during the summer months, taking shelter to nest, possibly in the hidden lakes of the central Andean region and the south of Chile and Argentina, but this has not been proved. Nesting colonies of these species are only known in the high mountain range of Antofagasta and the region of Natales, Magallanes (Chile). Formerly there existed a large colony in Laguna del Maule (Chile), but this has disappeared owing to construction work on a dam.

Some strays or small flocks of immatures may be found in the high lakes and marshes in the winter just as they may be found in the low marshes of the Patagonian region in the summer. The few flocks that actually winter in the high region of the Andes lakes and marshes make use of the moderate temperature springs occasionally found there, but these examples are relatively rare. The rest of these marshes are completely frozen and uninhabitable by these birds.

RELATIVE ABUNDANCE OF THE THREE SPECIES

When we were with Dr. Peterson at the Laguna Colorada (Bolivia) during the month of January 1958, we had been able to observe that the number of flamingos that were inhabiting this lake was in the vicinity of 6,000. Of these the following are the approximate percentages:

*Ph. jamesi* .......... 97 per cent

*Ph. andinus* .......... 2 per cent

*Ph. chilensis* .......... 1 per cent

During the last expedition from January 25 to the first of March 1960, the concentration of flamingos on this lake had diminished to possibly not more than 4,500. Making a reasonable estimate, based on the daily visits of flocks that were ar-
riving in the vicinity of our camp, we arrived at the following percentages of the species:

- **Ph. jamesi** .......... 86 per cent
- **Ph. andinus** .......... 2 per cent
- **Ph. chilensis** .......... 12 per cent

As is seen the percentage of *Ph. chilensis* grew noticeably. From our observations, we feel that this is owing to the fact that while it was the egg-laying period for all the birds, it was the final one for *Ph. chilensis*, before they banded together to seek a more temperate climate. For the constancy of the percentage of *Ph. andinus*, the logical conclusion is that this species is only a visitor to these high lakes and that its nesting is probably carried out elsewhere.

As the data that we gathered on our trip to Salar de Aguas Calientes (Chile) illustrated, we found only small groups of flamingos, though this is possibly due to our inability to distinguish the species from the great distances that separated us or to the short time at our disposal (end of February 1960). In the Laguna de Lejía, around the said marsh, we found about 1,500 flamingos, the relative occurrence of the different species being as follows:

- **Ph. jamesi** .......... 1 per cent
- **Ph. andinus** .......... 98 per cent
- **Ph. chilensis** .......... 1 per cent

**PLATE**

Figure 3. A. Schematic drawing showing lateral view of the body of *Phoenicopterus chilensis* Molina and the position of red coloration. B. Dorsal view of *Phoenicopterus chilensis* Molina showing positions of red coloration on its tail.

Figure 4. A. Schematic drawing showing lateral view of the body of *Phoenicoparrus andinus* (Philippi) and the distribution of the red and black coloration. B. Dorsal view of *Phoenicoparrus andinus* (Philippi), "The Black Tail Flamingo."

Figure 5. A. Schematic drawing showing lateral view of the body of *Phoenicoparrus jamesi* (Sclater) and the distribution of the red and black coloration. B. Dorsal view of *Phoenicoparrus jamesi* (Sclater) showing the two red stripes of plumes that fall over its wings and the small areas of black coloration.
It is possible that the non-use of this lake by *Ph. jamesi* is due to the fact that the great depth of the Laguna de Lejía, for example, is not favorable to them, as is true of other places. This great depth does not affect *Ph. andinus* because, as we had observed on many different occasions in the Laguna Verde and the Laguna de Lejía, one of their customs is to swim and look for food while submerging the head, neck and part of the body, in a manner similar to ducks. This custom was not observed in the other species of flamingos. *Ph. chilensis* when looking for its food effects a type of dance, slowly kicking his feet in the mud, turning around and keeping his head submerged in the turbulent and muddy water.

**MEASUREMENT OF EGGS**

From the colonies of *Ph. jamesi* we obtained 13 eggs which were measured. The data in millimeters are recorded below:

| 9.8 x 5.1 | 9.0 x 5.8 |
| 9.2 x 5.6 | 8.8 x 5.4 |
| 9.2 x 5.7 | 8.7 x 5.7 |
| 9.1 x 5.2 | 8.6 x 5.5 |
| 9.1 x 5.6 | 8.5 x 5.6 |
| 9.0 x 5.5 | 8.5 x 5.2 |
| 9.0 x 5.5 |

As can be seen from the measurements, there is an enormous variation in size of *Ph. jamesi* eggs, only two having the same dimensions.

**LITERATURE CITED**


