

# NOTES ON SOME BIRDS IN WEST-CENTRAL PERÚ

MANUEL A. PLENCE

P.O. Box 2490

Lima 1, Perú

Recent information of unusual interest obtained by different ornithological workers that adds to the knowledge of Peruvian bird distribution is presented herein. West-central Perú comprises the Department of Lima and the adjacent Departments of Ancash to the north and of Ica to the south, from sea level to the continental divide. The birds of the Department of Lima are rather well known due to the publications of Koepcke (1964, 1970). Nevertheless, nine species new to the Department (marked by an asterisk), including one entirely new to Perú, have either been collected or reliably observed in the last 4 years.

The *El Niño* phenomenon, a periodic replacement of the cool Perú Current by warm surface waters of subtropical or tropical origin (Murphy 1936; Zuta and Guillen 1970), was unusually strong in 1972, advancing south along the coast and reaching extreme southern Perú. The main effect of *El Niño* was to alter the climate by extending the summer (normally December to April) by 4 months. Some North American migrants may have been favored by this climatic change, which may account for the extension of their known winter ranges. The accidental presence of southern migrants is more difficult to explain, unless one assumes that the lack or reduction of suitable food as a consequence of *El Niño* stimulates wandering by seabirds as well as death from starvation or disease.

In recent years the number of ornithological students and visitors coming to Perú has increased. Their activities and those of a small number of residents in Perú may in part account for the observations of birds previously regarded as very rare and possibly overlooked.

The authority used for the scientific and English names is Meyer de Schauensee (1970).

## SPECIES ACCOUNTS

\**Pachyptila desolata*. Dove Prion. This species and the next have proved to be regular seasonal migrants to Mollendo, Department of Arequipa, in southern Perú (Hughes 1970, pers. comm.). With the exception of a fresh specimen found by N. Philip Ashmole and Humberto Tovar S. (H. Tovar 1969) at Laguna Grande, northern shore of Bahía de La Independencia, Department of Ica, in August 1969, no records farther north had been obtained until 6

August 1972, when I picked up two corpses at Playa La Chira, just south of Lima. A few kilometers farther south at Playa Conchán a third corpse was found on 27 August by Dan A. Tallman.

\**Pachyptila belcheri*. Slender-billed Prion. A skeleton and complete wing of this species was found by Ashmole and Tovar (H. Tovar 1969) in August 1968, at Laguna Grande, Department of Ica. On 22 July 1972, Hughes (pers. comm.) advised me of the passage of prions through Mollendo, Department of Arequipa. Unable to make a search myself, I requested Michael Gochfeld to look for them. On 30 July, he brought me two skulls found at Playa Villa, a beach south of Lima. He, Tallman, and John P. O'Neill collected additional material on 1 August, including two fresh female specimens (LSUMZ 71364 and 71580). At Cañete, southern Department of Lima, on 26 August, O'Neill found three more corpses and Gochfeld found two others on the beach at Bujama Baja, 95 km S of Lima. I searched several beaches from Lima N to Huacho on 12 August without results. Identification of this and the previous species has been confirmed by Raymond A. Paynter, Jr., from skulls I forwarded to him. Collected material is deposited at the Louisiana State University Museum of Zoology, the Museum of Comparative Zoology, and The American Museum of Natural History.

*Sarkidiornis melanotos*. Comb Duck. On 21 November 1971, at Puerto Viejo, a marshy area next to the ocean, 75 km S of Lima, Richard A. Plence saw a solitary bird of this species in a lagoon. The bird, which he collected the next day, was a female. While on a hunting trip at Cerro Azul, N of Cañete, Department of Lima, on 28 November 1971, I also collected a female and saw two more individuals flying. Local hunters were not familiar with this species. Koepcke (1970) considered it "very rare" in the Department of Lima and its inclusion in her list appears to have been based on records from Laguna de Villa (Ortiz de la Puente 1952). The new localities are the southernmost for the west coast of South America.

\**Zonibyx modestus*. Rufous-chested Dotterel. On 10 June 1972, while observing stragglers of North American migrant shorebirds at Playa Ventanilla, a beach 20 km N of Jorge Chávez International Airport, Lima, I saw a plover-like bird in breeding plumage, feeding in brackish ponds and on mud flats. I observed it again on the morning of 17 June, and realizing it was this species, I collected it. In the austral winter this species normally migrates up the west coast of South America as far north as Atacama, Chile (Johnson 1965), and on the east coast north to São Vicente, Brazil (Pinto 1964). Some weeks before I sighted this bird, the coast of southern Chile was hit by severe rain storms. In order to avoid the storms, the bird may have flown north and then followed migrating North American shorebirds to central Perú. The specimen, a female (LSUMZ 71365), was prepared by O'Neill and deposited at the Louisiana State University Museum of

Zoology. This is the first record for Perú and also the northernmost for the species. With the possible exception of the Tawny-throated Dotterel (*Oreopholus ruficollis*), no other South American breeding shore-bird is known to migrate to coastal Perú.

*Heteroscelus incanus*. Wandering Tattler. This species has been previously reported twice from Perú. Murphy (1936:275) mentions it at Bahía de Paracas, Department of Ica, and H. Tovar (1968) near Huacho, Department of Lima. At Playa Ventanilla, Department of Lima, on 26 August 1972, I saw one individual feeding in brackish ponds. Perhaps this new record may be attributed to the abnormal weather conditions caused by *El Niño*.

*Catoptrophorus semipalmatus*. Willet. Below latitude 6°S this species is a rare migrant, having been reported in Perú only from the mouth of the Río Lurín, Department of Lima (Koepcke 1961), La Puntilla, Bahía de Paracas, Department of Ica (Ashmole 1970; Koepcke 1961), and Mollendo, Department of Arequipa (Hughes 1970). At Playa Mamacona, north of the mouth of the Río Lurín, Lt. Edward Kaufmann USNR and I saw one individual in a flock of Whimbrels (*Numenius phaeopus*) on 25 October 1970.

*Calidris alba*. Sanderling. Along the coast of Perú this species migrates frequently in flocks of more than one hundred birds and rarely of several thousand. At Puerto Viejo, Department of Lima, on 21 November 1970, I observed the arrival of small flocks for about 3 hr. Where the waves receded, they formed a vast concentration 1500 m in length and 30 rows deep. At sunset they suddenly took to the air together, nearly blotting out the sun and the horizon. They moved like a wave, straightened out, descended to water level, and flew south. After measuring the area they had occupied, I estimated their number at 450,000 individuals.

*Limosa haemastica*. Hudsonian Godwit. In Perú this species has been reported only from Bahía San Juan, Department of Ica (MacFarlane 1887); Playa Mamacona (O'Neill 1969) and Cañete (Koepcke 1970), Department of Lima. Four individuals were seen and one was collected at Laguna Medio Mundo, 161 km N of Lima, on 15 April 1970 (A. Tovar 1971). The specimen, a male, was deposited in the Biology Department of the Universidad Nacional Mayor de San Marcos, Lima. At Mollendo, Department of Arequipa, Hughes (pers. comm.) observed three individuals on 23 October 1971, and one on 29 April 1973. Mr. and Mrs. David L. Pearson and I, on 11 May 1972, at Bahía de Paracas, Department of Ica, saw one bird just coming into breeding plumage. It was feeding on the mud flats. At Playa Ventanilla, Department of Lima, on 15 and 16 May, another one in nearly complete breeding plumage was seen feeding in brackish ponds. On 27 June 1973, Peter Alden and O'Neill (pers. comm.) observed three individuals flying north near Pisco, Department of Ica.

*Stercorarius pomarinus*. Pomarine Jaeger. Two individuals of this mainly pelagic species were observed in aerial pursuit of terns (*Thalasseus* sp.), at Puerto Viejo, Department of Lima, on 10 February 1973. Later, one of them was seen sitting on the water and the other was found standing on the shore among Gray Gulls (*Larus modestus*), where it stood out because of its larger size and because it was several inches taller. I was able to approach to within 5 m. I noted the brown crown, very dark-brown back and wings, the yellowish sides of neck and head, the whitish breast with incomplete breast-band of vertical brownish stripes, and the blackish

appearance of the bill and legs. When the bird was forced to fly, the white wing patches, the white rump, and wedge-shaped tail were conspicuous. Protrusion of the central tail feathers was not observed. Pearson agreed that it must have been an immature of this species. Records from Perú are from Callao (twice) and Ancón (Hellmayr and Conover 1948), both localities in the Department of Lima.

*Larus pipixcan*. Franklin's Gull. Large concentrations of this species are a common sight in Perú. On 10 November 1968, however, at Playa Jaguay, a beach north of Chíncha, Department of Ica, Mr. and Mrs. G. W. Cottrell, Dr. and Mrs. Raymond A. Paynter, Jr., and I saw one exceptional concentration that we estimated at one million birds. Most were preening or resting on the sand; others were feeding, sitting on the water, or flying. From 3 February to 21 April 1973, I observed a flock of approximately 70 birds on the Río Rímac at Chosica, Department of Lima, 50 km inland at an elevation of 900 m. They appeared to be waiting for refuse to be dumped directly into the river. They occurred in diminishing numbers in the cultivated fields to an elevation of 1500 m. Similar behavior has been observed in Arequipa, approximately 80 km inland at an elevation of 2378 m. They were first observed by Hughes (pers. comm.) on 27 December 1972. Newspapers later reported thousands of them at Arequipa and also at Maca, an Andean town in the Province of Caylloma, Department of Arequipa, approximately 130 km inland at an elevation of 2500 m. A previous occurrence was observed in Arequipa by Hughes in November 1966. In the Department of Piura, northern Perú, David N. Ewert and Wesley E. Lanyon observed a few birds along the coast in the last week of February 1973. Small numbers were seen inland, concentrated near dumps and irrigated river valleys. Five individuals were also found just W of Chilaco, 32 km NE of Sullana, approximately 80 km inland at an elevation of 100 m. Distances given are the shortest distance from the sea, but because of the coastal desert, I presume that the gulls fly longer distances up the rivers and their tributaries, which include the Ríos Chira/Chipillico (Piura), Río Rímac (Lima), Ríos Majes/Colca and Vitor/Chili (Arequipa). Lack of ornithological observers may have prevented the detection of this species in other inland river valleys and possibly at higher altitudes. Although field foraging is typical of this species in North America, it has not been previously reported so far inland in South America, where the species usually remains within sight of the sea. The lack of suitable oceanic food caused by *El Niño* and the absence of refuse from the fishmeal plants, which had temporarily closed for 8 months, may have forced them to search for a substitute winter diet in the cultivated fields and in some *lomas* (fog vegetation areas) on the desert coast.

*Chlidonias niger*. Black Tern. This species is considered very rare in Perú. It appears to have been previously reported only twice (Hellmayr and Conover 1948), both times from Callao, Department of Lima. On 17 May 1972, at Playa San Pedro, a beach opposite the Pachacamac Islands, Department of Lima, Pearson and I saw one individual in winter plumage flying over a marshy pond and feeding on dragonflies. At the Mejía lagoons, near Mollendo, Department of Arequipa, Hughes (pers. comm.) observed, between 25 December 1972 and 27 April 1973, small numbers of this species. On 24 March, however, he found a flock of 120 individuals.

*Gelochelidon nilotica*. Gull-billed Tern. The first

records of this species for Perú were obtained from the Department of Piura; near Pisco, Department of Ica; and near Lima, during the previous *El Niño* phenomenon of 1965 (Koepecke 1970). The only other published record is from Mollendo, Department of Arequipa (Hughes 1972). On 11 May 1972, Pearson and I saw two of these terns at Bahía de Paracas, Department of Ica. At Playa Ventanilla, Department of Lima, I saw eight on 29 July. The highest number seen at one time was 10 on 5 August. From this date they were seen every weekend in diminishing numbers until 2 September, when only one bird remained. On 3 September, Gochfeld noted one individual at Bujama Baja, Department of Lima. This sudden influx is almost certainly associated with the *El Niño* phenomenon. On 20 August, I collected one female that was molting. The specimen was prepared by Tallman and deposited at the Louisiana State University Museum of Zoology (LSUMZ 72159). According to O'Neill (pers. comm.), it seemed to belong to the subspecies *aranae* (wing 268, tail 100, depth of bill at angle of gonyes 10 mm), which breeds from Maryland to Texas. Previous records from the west coast of South America (Ecuador) have also been referred to this race and not to *vanrossemi* (Marchant 1958), which breeds from southeastern California to northwestern México.

*Chaetura pelagica*. Chimney Swift. According to the A.O.U. Check-list (1957), this species is known to winter only in the upper Amazon drainage. It has been reported in coastal Perú, from Trujillo, Department of La Libertad, S to Lima, from 1954 to 1959 (Koepecke 1961), and Mollendo, Department of Arequipa (Hughes 1970, 1972). On the coast at Hacienda Don Germán, Cañete, Department of Lima, on 7 November 1964, John Farrand, Jr., J. Alan Feduccia, and O'Neill obtained 12 males and 11 females (LSUMZ 34593-34599, 48739-48753, and 50743). They were roosting in a chimney and fell inside the house when a fire was started. Another female (LSUMZ 34600) was obtained on 9 November. The species was common over the cotton fields at Cañete. On the mornings of 14 and 15 April 1971, O'Neill observed approximately 100 of these swifts coming to drink from a pond at Hacienda Don Germán and caught a female (LSUMZ 69372) in a mist net set for bats. Worthy of mention here is the capture at Trujillo on 7 November 1954 of a specimen banded at Memphis, Tennessee, on 25 September 1954 (Coffey 1956). Juan Ornea R. also collected one male (LSUMZ 27703) at Trujillo on 7 December 1954 and six males (LSUMZ 32167-32172) on 23 November 1963. E. D. von Wedemayer obtained one female and one unsexed specimen at Arequipa in January 1966. The late Maria Koepecke identified them as *Chaetura pelagica*. As no other species of this genus has been reported from coastal Perú, all sight records are believed to be of Chimney Swifts. In the first week of November 1968, I noticed the arrival of a flock of 40 birds in a district of Lima. Days later, I observed additional individuals in other districts, where they remained until 15 December. In 1969 about 50 similar birds arrived on 2 November and remained until the end of the month. While traveling on the now defunct Chimbote-Huallanca railroad, Department of Ancash, I saw several individuals flying along different stretches of the Río Santa on 11 April 1970. In the latter part of 1970, I did not find any of these swifts until 15 December, when I found 15 birds in Lima. Presumably, they had arrived earlier. In 1971, near Lurín, Department of Lima, I saw

a flock of 20 birds over a cultivated field on 12 November. Chimney Swifts could not be located in Lima that year, but at Cañete on 28 November, I saw several individuals in association with Andean Swifts (*Aeronautes andecolus*). On 8 November 1972, Mr. and Mrs. Dan A. Tallman saw two individuals flying by the seashore in Lima. That year I observed a flock of approximately 400 birds in Lima from 26 to 30 December. Hansjakob Lüthi and I saw ten individuals also in Lima on 9 February 1973. The specimens obtained have been deposited as skins and skeletons in the Louisiana State University Museum of Zoology and in the Museo de Historia Natural "Javier Prado" in Lima.

*Tyrannus tyrannus*. Eastern Kingbird. Koepecke (1970) stated that several observations have been made of this species in the Department of Lima, but gave only the first date (12 December 1965). On 9 November 1968, with Mrs. G. W. Cottrell and Paynter, I observed at Puerto Viejo, Department of Lima, one individual standing in the sand next to a marshy area. Gochfeld and G. Stuart Keith observed one at Bujama Baja, Department of Lima, on 1 October 1972. The species has also been reported from Mollendo, Department of Arequipa (Hughes 1972).

\**Empidonax* sp. "Trail's" Flycatcher. A male of the *Empidonax trailii-almorum* complex, with an ossified skull and testis measuring 1 mm, was caught in a mist net by John Davis on 12 December 1968, at Hacienda San Javier Alto, near Chilca, Department of Lima, in a coastal irrigated orange orchard. This is the first record for either species west of the Andes. Identification was made by Ned K. Johnson, but the plumage was too worn to permit definitive determination. The specimen was deposited in the Museum of Vertebrate Zoology.

\**Riparia riparia*. Bank Swallow. Published records for this species in Perú are few: two places east of the Andes (Zimmer 1955); and in Mollendo, Department of Arequipa, where it has been reported as a regular migrant (Hughes 1970, 1972). At Bujama Baja, Department of Lima, Gochfeld saw single birds on 3, 28, 29 September and 1 October 1972, and two on 30 September.

\**Petrochelidon pyrrhonota*. Cliff Swallow. Until reported by Hughes (1970, pers. comm.) as occurring regularly at Mollendo, Department of Arequipa, this species was not known from Perú. On 1 October 1972, Gochfeld saw one individual at Bujama Baja, Department of Lima.

\**Catharus ustulatus*. Swainson's Thrush. On 23 December 1968, at Hacienda San Javier Alto, Department of Lima, Davis caught, in a mist net, a male with much fat and with left testis measuring 1 mm. He identified it as belonging to the race *almae*, as it was too pale and too gray-backed for *swainsoni*. The only other published record of this race in South America, also from the western slope of the Andes, is from Colombia (Miller 1963). The specimen was deposited in the Museum of Vertebrate Zoology.

\**Setophaga ruticilla*. American Redstart. In an eucalyptus woods below San Mateo, an Andean town in the Rímac Valley, Department of Lima, at an elevation of approximately 3000 m on 4 May 1972, Pearson attracted a bird for a brief moment by making chirping noises. He identified it as a female of this species. Previous records for Perú were from Moyobamba, Department of San Martín (Bond 1953), and Mollendo, Department of Arequipa (Hughes 1972).

*Diglossa baritula*. Slaty Flower-piercer. Two birds

in the eucalyptus woods below San Mateo, Department of Lima, were first discovered by Davis, on 5 April 1969, as they were foraging on the ground. Later, one was seen feeding on an agave. Returning on 20 April, I collected one specimen, which was prepared by Davis. It was a male with ossified skull and with the left testis measuring 7 mm, either coming into or out of reproductive condition. It had presumably bred or was about to breed on the west slope of the Andes. There is only one previous record from the Department of Lima (Koeppke 1964). The specimen was deposited in the Museum of Vertebrate Zoology.

*Diglossa carbonaria*. Carbonated Flower-piercer. This species has been reported from one locality in the Department of Lima, the temperate forest of Zárate (Koeppke 1961). I have observed it feeding in the cultivated flower gardens of San Mateo, Department of Lima, at different times of the year since 1968.

*Pipraeidea melanonota*. Fawn-breasted Tanager. Koeppke (1964) mentioned the supposed first record of this species for the Department of Lima, but she overlooked a previously published record from Galera, Department of Junín (Trimble 1943) which actually is referable to the Department of Lima. Galera, which is mentioned throughout Trimble's paper, is located on the continental divide E of Lima, at an elevation of 4781 m. The collector, Arthur C. Twomey, has confirmed (Parkes, pers. comm.) that because of a roadblock he never reached Galera, the place to which his collecting is attributed. In fact, he collected in the Rímac Valley, Department of Lima, at an elevation between 1828 and 2438 m (below Surco to above Matucana). His specimen of this species was taken in this area.

*Thlypopsis ornata*. Rufous-chested Tanager. On 20 April 1969, T. James Lewis caught, in a mist net at San Mateo, Department of Lima, a female with ossified skull, ovary  $9 \times 4$  mm, ova to 1.5 mm, light fat, no body molt, and stomach containing spiders and beetles. In the Department of Lima it has been reported only from Zárate (Koeppke 1961). The specimen (no. 472) is in the possession of the collector and was identified by Davis.

\**Sporophila luctuosa*. Black-and-white Seedeater. On 10 September 1972, in the Rímac Valley, Department of Lima, at an approximate elevation of 1100 m, Gochfeld and Keith observed a male and two females of this species in a patch of reeds at kilometer 46. Previously it was known west of the Andes only south to the Department of Ancash (Meyer de Schauensee 1966).

## SUMMARY

New information from the Departments of Ancash, Lima, and Ica that add to the knowledge of the distribution of Peruvian birds is presented. Nine new species are reported for the Department of Lima, including one that is new for Perú. Some North American migrants may have extended their southern winter range in response to favorable climatic conditions brought about by the *El Niño* phenomenon in 1972. The mortality rate of migratory seabirds may have been caused by starvation or disease.

## SUMARIO

Nuevos registros en los Departamentos de Ancash, Lima e Ica, contribuyen al conocimiento de la distribución de aves en el Perú. Nueve especies se registran por vez primera para el Departamento de Lima, incluyendo una nueva para el Perú. Algunas aves migratorias de América del Norte pueden haber extendido su distribución, favorecidas por factores climáticos ocasionados por el fenómeno de *El Niño* en 1972. La mortandad de aves marinas migratorias del sur puede haber sido ocasionada por falta de alimento o enfermedad.

## ACKNOWLEDGMENTS

I wish to express my gratitude to John Davis, David N. Ewert, Michael Gochfeld, R. A. Hughes, T. James Lewis, John P. O'Neill, David L. Pearson, Dan A. Tallman, and Humberto Tovar S., for allowing me to report their records. I also wish to thank John P. O'Neill and Raymond A. Paynter, Jr., for the identification of specimens, and Kenneth C. Parks for information on *Pipraeidea melanonota*. For reading an earlier draft of the manuscript and offering valuable criticism, I am indebted to Eugene Eisenmann, Michael Gochfeld, R. A. Hughes, and Emmanuel J. Plenge.

## LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1957. Checklist of North American birds. 5th ed. A.O.U., Baltimore.
- ASHMOLE, M. J. 1970. Feeding of Western and Semipalmated Sandpipers in Peruvian winter quarters. *Auk* 87:131-135.
- BOND, J. 1953. Notes on Peruvian Icteridae, Vireonidae and Parulidae. *Notulae Naturae*, no. 255:1-15.
- COFFEY, B. B., JR. 1956. Memphis banded Chimney Swift in Peru. *Bird-Banding* 27:84.
- HELLMAYR, C. E., AND B. CONOVER. 1948. Catalogue of birds of the Americas and the adjacent islands. . . . Field Mus. Nat. Hist., Zool. Ser., 13, Pt. I, no. 3:383 p.
- HUGHES, R. A. 1970. Notes on the birds of the Mollendo district, southwest Peru. *Ibis* 112:285-331.
- HUGHES, R. A. 1972. In A. W. Johnson [ed.] Supplement to the birds of Chile and adjacent regions of Argentina, Bolivia and Peru. Platt Establecimientos Gráficos S.A., Buenos Aires. 116 p.
- JOHNSON, A. W. 1965-67. The birds of Chile and adjacent regions of Argentina, Bolivia and Peru. 2 vols. Platt Establecimientos Gráficos S.A., Buenos Aires.
- KOEPCKE, M. 1961. Birds of the western slope of the Andes of Peru. *Amer. Mus. Novitates*, no. 2028:1-31.
- KOEPCKE, M. 1964. Las aves del Departamento de Lima. Gráfica Morsom S.A., Lima. 128 p.
- KOEPCKE, M. 1970. The birds of the Department of Lima, Peru. Livingston Publ. Co., Wynnewood, Pa. 144 p.
- MACFARLANE, J. R. H. 1887. Notes on birds in the western [= eastern] Pacific, made in H.M.S. 'Constance,' 1883-5. *Ibis*, Ser. 5, 5:201-215.

- MARCHANT, S. 1958. The birds of the Santa Elena Peninsula, S.W. Ecuador. *Ibis* 100:349-387.
- MEYER DE SCHAUENSEE, R. 1966. The species of birds of South America and their distribution. Livingston Publ. Co., Narberth, Pa. 577 p.
- MEYER DE SCHAUENSEE, R. 1970. A guide to the birds of South America. Livingston Publ. Co., Wynnewood, Pa. 470 p.
- MILLER, A. H. 1963. Seasonal activity and ecology of the avifauna of an American equatorial cloud forest. *Univ. Calif. Publ. Zool.* 66:1-78.
- MURPHY, R. C. 1936. Oceanic birds of South America. 2 vols. Amer. Mus. Nat. Hist., New York.
- O'NEILL, J. P. 1969. Distributional notes on birds of Peru, including twelve species previously unreported from the republic. *Occ. Papers Mus. Zool., Louisiana State Univ.*, no. 37:1-11.
- ORTIZ DE LA PUENTE, J. 1952. Los patos del Perú. *Min. Agricul., Dir. Pesq. y Caza, Pesca y Caza*, Lima, no. 4:3-20.
- PINTO, O. M. DE O. 1964. *Ornitologia Brasiliense*. Dept. Zool., Sec. Agr. Ind. Comer., São Paulo, 1:182 p.
- TOVAR S., A. 1971. Estudio finecológico de la Laguna de Medio Mundo (Costa central del Perú). Con referencia especial de los vertebrados. Unpublished Ph.D. Thesis, Universidad Nacional Mayor de San Marcos, Lima.
- TOVAR S., H. 1968. Areas de reproducción y distribución de las aves marinas en el litoral peruano. *Bol. Inst. Mar Perú* 1:525-546.
- TOVAR S., H. 1969. Nuevos registros de aves marinas en la zona de Bahía de La Independencia y Pisco. Paper presented at 2do. Congreso Nacional de Biología held in Lima on 23-27 November 1969 (unpublished).
- TRIMBLE, R. 1943. Birds collected during two cruises of the "Vagabondia" to the west coast of South America. *Ann. Carnegie Mus.* 29:409-441.
- ZIMMER, J. T. 1955. Studies of Peruvian birds. No. 66. The swallows (Hirundinidae). *Amer. Mus. Novitates*, no. 1723:1-35.
- ZUTA, S., AND O. GUILLEN. 1970. Oceanografía de las aguas costeras del Perú. *Bol. Inst. Mar Perú* 2:157-324.

Accepted for publication 16 August 1973.