

From Walter Rathbone Bacon Scholarship of the Smithsonian Institution, through the Curator, not less than 5010 specimens of marine invertebrates chiefly crustacea, as a result of a first period of field work devoted to a study of the Macruran fauna of South America. (). A preliminary survey of the data and material obtained indicates rather striking changes in the distribution patterns of a number of the species already reported from the region, as well as a number of new records of occurrence of species and even genera not yet reported from the region visited this year. Available funds curtailed the field work contemplated to such an extent that so far the coastal region of South America from Rio de Janeiro, Brazil, to Buenos Aires, Argentina, only has been explored. The collections accessioned this year represent but a part of the returns of the trip, further material being still in transit.

A most cordial reception was accorded the Curator from the scientific establishments visited in South America, and by the scientists with whom he came in contact.

In this connection the Museo Paulista at São Paulo, Brazil, ① Dr. A. de Taunay, Director, ② Dr. H. Luederwaldt, Curator; and the Buenos Aires Museum, ③ Dr. M. Doello-Jurado, Director, were most generous in granting free access to their collections, and in arranging a loan of a selected series of their unidentified crustacea, with the cooperation of these Institutions notable additions to the carcinological fauna of South America appear to be in prospect. The National Museum of Brazil at Rio de Janeiro was also visited, as well as the renowned Museum at La Plata, Argentina. From the latter institution future exchanges are to be expected. The small, but interesting, collections of the Museum of the Collegio São Luis at Rio Negro in the State of Parana, Brazil, were also examined. While in this part of Brazil a visit was made to the scene of Fritz Mueller's labors in Blumenau and also at Florianopolis, Brazil.

From his children and grandchild material from his favorite collecting grounds has been promised, and a first small sending has recently been received.

Particular mention must be made of the courtesies and assistance rendered by the Fisheries departments of both the United States, of Brazil and the Uruguan Government. ^④ Capt. Adalberto Nunes, in charge of the Brazilian Fisheries headquarters in Rio was particularly gracious not only in arranging visits to a number of the fishing "Colonies" around the Bay of Rio de Janeiro, and in furnishing most helpful letters to the Captains of the Ports and Presidents of the Fishing Colonies elsewhere in Brazil, but in particular in providing an interpreter during a three week's stay at Rio de Janeiro and working space at the Fisheries dock. One dredge trip to certain sections of the Bay was also arranged. The Sociedade Brasileira de Piscicultura e Oceanographia elected the Curator to honorary membership. ^⑤ Especial thanks are also due Dr. Gustavo Hasselmann, the President and to ^⑥ Dr. Carlos Moreira, Director of the Institute and Chief of the Agricultural Entomological Service, who furnished the Curator with special letters of introduction of the greatest assistance in other ports of call on the Brazilian coast.

^⑦ In Montevideo, Dr. Hamelt Bassano, Director of the Instituto de Pesca, was equally generous in assistance rendered. A number of trips were made on the steam trawler belonging to the institute; the facilities of their well-equipped laboratory were likewise placed at his service. ^⑧ Juan Tremoleras, Chief of the Institute's Scientific Laboratories deserves many thanks for courtesies extended, and material assistance rendered on a number of field trips made from Montevideo as headquarters.

Especial mention must be made of the very great services rendered by our diplomatic corps and consular service. ⁽⁹⁾

In Brazil, the American Ambassador, Mr. Edwin V. Morgan, was particularly helpful, not only in the introductions he arranged to representatives of the Ministry of Marine, and to Capt. Nunes of the Fisheries department, but also in the strong personal and official credentials he furnished your Curator. Personally Mr. Morgan provided storage space at the Embassy for surplus collecting gear till required. Other members of the Embassy staff assisted in various ways,--Mr. Brown, secretary to the Military Attache, and Mr. St. Onge, secretary to the Ambassador ⁽¹⁰⁾ and Mr. José Mayer. ⁽¹¹⁾ Mr. Brown and Mr. St. Onge personally arranged and accompanied the Curator on several collecting excursions. In a very great measure whatever success attended the studies and collections made in Brazil are due to Mr. Morgan's efforts and assistance. At Santos, Mr. Arthur G. Parsloe, vice-consul, did all that could be desired in the shape of arranging for necessary introductions to port officials and fisheries authorities, in particular the Captain of the Port, and Señor Julio Conceição, and again to Señor Sampaio Ferray, one of the Directors of the Brazilian Lloyd, who secured free transportation for your Curator's collecting outfit on all vessels belong to his company, a very courteous money and time saving arrangement. ⁽¹²⁾ ⁽¹³⁾

In Montevideo Mr. U. Grant Smith, the American Minister, and in particular Mr. O. Gaylord Marsh, were ^{of} utmost assistance in furthering the aims and objects of the expedition. Mr. Marsh's office, and his own home, were like home to me, and I cannot render thanks enough for all he did for me. The Consular Agents in Buenos Aires rendered the stay in that city most pleasant. An opportunity for meeting the American Ambassador did not present itself.

Other government officials and private individuals throughout the several countries visited were most sympathetic and helpful in furthering the Curator's field studies and a list of such individuals would be too long to introduce here. Mention should be made however of Mr. James Bacon, Assistant Manager of the Expresso Federal at Santos, Brazil, while in Santos the Express Company provided commodious working quarters gratis in their warehouse, and facilitated shipments from Santos and other ports in Southern Brazil.

Dr. Jose Vierra de Oliveira, D. D., Inspector de Vigilancia Sanitaria Vegetal, São Francisco, Brazil, through his close cooperation made the stop at that port one of the most successful of the trip.

Our indefatigable correspondent, Dr. ^{Florentino} Felippone at Montevideo, personally conducted the Curator on a number of collecting trips about Montevideo and adjacent watering places. From this place to Porto La Paloma an extremely successful trip was made in company with Senor Ricardo Thomsen, of Paso de la Arena, Montevideo, obtaining many marine forms not found nearer Montevideo due to the rather fresh waters of the River Plate.

As a particular survey of the collections has not been made, as but a part of the year's collections have so far been received, no attempt is made to present further results here. As stated above a number of new records, and new species have unquestionably been obtained, as well as some data on environmental conditions from sections of the South American coast where these are almost wholly lacking. It is expected that considerable new light will be thrown on the distribution of the crustacean elements of the South American invertebrate fauna. This hope has already been realized in part in the studies that Dr. Mary J. Rathbun has made on the Xanthid crabs contained in the first part of the 1925 collections.

Aside from the material returns of the expedition, the personal contacts established with scientific workers and institutions in South America will undoubtedly prove to be of great value to the National Museum and the Smithsonian Institution.

An abbreviated diary of the season's operations from August 1, 1925 to February 3, 1926, follows, ["Collected" in this resumé means not only specimens but environmental data, temperature, salinity, and in some cases hydrogen-iron readings as well, together with habitat and color notes on specimens observed or secured]:

August 1-12: Enroute New York to Rio de Janeiro, Brazil.

" 12, Sept. 6: At Rio de Janeiro, Brazil and vicinity.

" 12-17: Paid respects to Mr. Edward H. Morgan, American Ambassador at Rio, was given his very hearty cooperation; established contact with Commission of Fisheries, local Oceanographic Society, and was granted laboratory space in the warehouse of the Enterposto Federal da Pesca (under the Comissão da Pesca) Capt. Adeberto Nunes, director; much personal assistance was rendered by Dr. Carlos Moreira, a well-known correspondent of the U. S. National Museum.

- August 15: Visited fish market.
- " 18: Visited the National Museum.
- " 19: Collected on Ilha Paqueta, residence of Mr. Henry E. Brown,
Secretary to the military attachee at the Embassy at Rio.
- " 20-21: Spent in trying to make arrangements to make a trip on the
Government steam-trawler.
- " 22: Collected at Nictheroy.
- " 23: Collected at Ilha Paqueta. (Bay of Rio); spent previous night
as guest of Mr. Henry E. Brown.
- " 24: Collected at Pedra da Itapuca (Nictheroy).
- " 25: Visited fishermen's colony and collected at São Francisco (Bay of Rio)
- " 26: Collected at Conto do Rio (Nictheroy).
- " 27: Visited fishing colony, and collected on Ilha Governador (Bay of Rio)
- " 28: Overhauled collections.
- " 29: Dredging trip about Bay, in vicinity of Ilha Paqueta, and Ilha
Governador, on harbor tug by arrangement of the Commission
of Fisheries.
- " 30: At Pedra, a fishing settlement on the sea coast south of the
Bay of Rio de Janeiro, in company with Mr. St. Onge of the
American Embassy.
- " 31: Overhauled collections and packed specimens for shipment.
- September 1: Collected at Ilha Governador.
- " 2: Packed balance of specimens and collecting gear.
- " 3-6: Visited Rio Museum, and Embassy, shipped collections, and moved
collecting gear to steamer preparatory to leaving for Santos.
- " 7-8: Enroute to Santos, delayed half day by engine trouble; in Santos
through courtesy of Mr. James B. Bacon of the Expresso
Federal was allotted work space in the company's warehouse.

- September 9-10: Visited Museo Paulista at São Paulo. Met Dr. A. de Taunay, the Director, and Dr. H. Luederwaldt, the Custodian of the zoological collections; made arrangements to have unidentified crustaceans lent for study at Washington, and arranged for a collection of Brazilian reptiles for the Zoological Park, in exchange.
- " 11: Visited the Consulate, met the Captain of the Port, and made arrangements for work about and out of the Port of Santos; given much assistance by the American Vice-Consul in charge, Mr. Arthur G. Parsloe.
- " 12: Collected at Ponta da Praia, (Santos).
- " 13: Collected along estuary beyond line of docks at Santos.
- " 14-15: Rain; overhauled specimens.
- " 16: Through courtesy of the Captain of the Port, obtained free passage to Ilha São Sebastião, off the Brazilian coast north of Santos.
- " 17: Left Santos on launch "Nova America" in company with Dr. H. Luederwaldt of the Museo Paulista.
- " 18: Arrived at São Sebastião.
- " 18-26: Daily collections at São Sebastião.
- " 27: Left São Sebastião; returned to Santos.
- " 28-30: Packing and shipping specimens, and making arrangements for departure.
- October 1: Left for São Francisco, Paraná, Brazil.
- " 2-3: Unexpected stop enroute; two days collecting at Paranaguá.
- " 4: Arrived São Francisco, secured accommodations.
- " 5: Called upon Dr. João Vieira de Oliveria, and Captain of Port.
- " 6: Collecting trip to Praia Enseada.
- " 7: Collected at São Francisco.

- October 8: Second trip to Praia Enseada, and fresh water streams enroute.
- " 9: Packed specimens and made arrangements for trip to Castro,
State of Paraná.
- " 10: Left São Francisco; arrived at Rio Negro.
- " 11-15: Collected at Rio Negro; visited Museum of the Colegio São Luis,
met the director, Mr. Micheal Witte and received several
crustaceans from him.
- " 16: Left Rio Negro, arrived Castro.
- " 17: Collected at Castro.
- " 18: Collected on Rio Iapo at Marumby, day's trip from Castro.
- " 19-20: Collected in Rio Iapo at Castro.
- " 20: Returned to Rio Negro.
- " 21-22: Packed specimens for shipment to coast, and left Blumenau.
Spent night in Jaraquá enroute.
- " 23-26: Arrived at Blumenau, visited relatives, scene of most of Fritz
Mueller's labors and his burial place; owing to rains and
flooded rivers no collections made.
- " 27: Returned to São Francisco.
- " 28-31: Further collecting at São Francisco, packed material collected
to date, for shipment to Washington; prepared for departure
to Florianopolis; expecting to leave thirty-first.
- November 1- 2: Steamer delayed two days; minor collections made.
- " 3: After night and morning at Itajahy, arrived at Florianopolis,
State of Santa Catharina, Brazil.
- " 4- 6: Collected at Florianopolis.
- " 7- 9: Enroute Montevideo, arrived the tenth.
- " 10-11: Called on Mr. O. Gaylord Marsh, the American Consul, and
Mr. U. Grant Smith, American Minister, Dr. Florentino
Felippone, correspondent of the Museum; Señor Galceran,

proprietor of a private fishing company, and Dr. Hamlet Bazzano, director of the Uruguayan Fisheries Institute (Instituto de Pesca), made the most helpful acquaintance of Señor Juan Tremoleras, Chief of the Scientific Laboratories of the Institute.

- November 12: Collected at Prado, Montevideo, in company with Dr. Felippone; in the evening went aboard the steam-trawler of the Instituto de Pesca for a trip early the next day.
- " 13: Day's trip on steam-trawler, obtained some crustaceans and a series of local fish; hauls made off Isla de Flores.
- " 14: Pickled specimens of the day before, made preparation for trip on the morrow.
- " 15: Collected at Maldonado and Punta del Este in company with Dr. Felippone.
- " 16: Trip with steam-trawler, secured a number of crustaceans, and fish not seen on previous trip.
- " 17: Rain; got notes and diary up to date; boarded trawler in evening.
- " 18: Trip with steam-trawler; hauls made on "English Bank" (Banco Inglés).
- " 19-20: Overhauled specimens from previous day, stored in ice room at Instituto.
- " 21: Repaired dredge nets; met Señor Ricardo Thomsen, arranged for an excursion, collecting and dredging, at Barro de Santa Lucia
- " 22: Sunday, at Dr. Felippone's residence together with Dr. Maynard M. Metcalf.
- " 23: Balance of collecting gear shipped from Rio obtained from Customs; overhauled barrel of fish specimens; boarded trawler in evening.

- November 24: Trip with steam-trawler; used oyster dredge; hauls made off
Isla Flores.
- " 25: Day at Barro de Santa Lucia, boat dredge and shore collecting.
- " 26: Overhauled specimens. Thanksgiving dinner at the home of
Mr. Marsh, American Consul.
- " 27: Called at Embassy.
- " 28: Trip with steam-trawler; hauls made on Banco Arquimedes.
- " 29: Pickled specimens of day before.
- " 30: Made business calls incidental to securing rheas for Zoo.
- December 1: Collected in Prado in company with Señor Tremoleras.
- " 2: Packed barrel of fish and other specimens for shipment to
Washington.
- " 3: Through the kindness of Consul and Christopherson Bros., Munson
Line agents, arranged free transportation of specimens to
New York; attended to necessary papers; made preparations
for trip to La Paloma; took collecting gear to station.
- " 4: Enroute to La Paloma by train and auto, delayed by floods; made
some collections on the way at San Carlos, where night was
spent.
- " 5-6: Enroute to La Paloma; spent night at Rocha, did some collecting
in morning.
- " 6-7: Arrived at La Paloma; collected both days.
- " 8: Left La Paloma; arrived Montevideo.
- " 9: Cared for La Paloma collections; with Senor Tremoleras called
on General Bazzano and collected at his country place
beyond Montevideo.
- " 11: Collected at Carrasco Creek with Dr. Felippone.
- " 12-13: Arranged passage to Buenos Aires; made official farewell calls.
- " 14: Arrived Buenos Aires, called at Consulate, with Dr. Metcalf
visited the Buenos Aires Museum, met Dr. Dabene and the

Director, Prof. M. Doello-Jurado; arranged free shipment of rheas with Mr. Owen Thomas, resident manager for the Munson line.

- December 15: Revisited the Museum.
- " 16: Visited Buenos Aires Zoo in early morning; took train to La Plata and examined the collections at the Museum. Met Dr. Walter Schiller; planned another visit at a later date, to arrange for exchange and loan of crustacean collections.
- " 17-20: "Under the weather", sick; saw Dr. Metcalf off morning of 17th.
- " 21: Visited Assistant Secretary of Agriculture, Dr. Carlos Vallejo; began work at the Buenos Aires Museum, selecting set of specimens for our Museum, part exchange and part for study.
- " 22: At work at Buenos Aires Museum.
- " 23: Second visit to La Plata Museum; made acquaintance of Dr. ^{Angel} Cabrera, in charge of mammals and Pablo Gaggero, who looks after the lower invertebrates.
- " 24-28: Working over collections at the Buenos Aires Museum, packing, labeling and listing specimens for shipment to Washington; on the 28th had the good fortune of spending several hours on board the German oceanographic vessel the "Meteor" just before sailing for Punta Arenas; left the evening of this day for Montevideo.
- " 29-January 1: Was disappointed in obtaining promised rheas, in spite of strenuous efforts did not succeed in getting them in time for sailing on January 1, as expected, forced to wait over two weeks.
- January 1-15: Finally consummated arrangements and secured six rheas, half the number originally planned on; January 15 gave a talk before the American Club at Montevideo; sailed that afternoon for Santos.

January 16-17: Enroute.

" 18-19: Arrived in Santos, took train for São Paulo, revisited the Museo Paulista, and the Instituto Butantan, met the director, Dr. Vital Brasil, and obtained a collection of thirty living/reptiles.
Brazilian.

" 20: Arrived in Rio de Janeiro, holiday, Museum closed, received a visit from our good friend Dr. Carlos Moreira on board ship.

" 21-Feb. 1: Enroute New York, arriving 7 P. M. on the first.

February 2: In New York, getting birds and snakes through Customs and arranging shipment to Washington; left on night train for Washington.

" 3: Arrived in Washington; delivered snakes to the Zoological Park and reported to Museum.

Shoemaker's acct
Collecting Invertebrates
S. Amer. East coast resurvey of
W. B. C. 1924 trip

Recently the better part of six months, August, 1925 to January, 1926, was devoted to a field study of the South American crustacean fauna, under the Walter Rathbone Bacon Scholarship administered by the Smithsonian Institution. This bequest was made by the late Mrs. Virginia Furdy Bacon, of Detroit, in memory of her son to enable studies to be made of the fauna of the countries other than the United States. Such generosity in the furtherance of zoological research cannot receive too wide publicity.

Nearly three months were spent collecting along the Brazilian coast, in the vicinity of Rio de Janeiro and southward. Stations were ~~made at~~ established at Santos, Ilha São Sebastião, where in company with Dr. H. ^eLüderwaldt of the Museu Paulista at São Paulo, a most profitable ten days field work was spent, Paranaguá, São Francisco and Florianopolis. One trip was made inland to Castro, in the State of Paraná for the purpose of obtaining specimens of a carcinological rarity, Aeglea intermedia, which here was found to occur in great abundance. Blumenau in the State of Santa Catharina, long the home of Fritz Mueller, was ^{also} visited. Here are yet to be found the "primitive" microscopes with which he made all of his wonderful microscopic observations. At the Museu Paulista, in São Paulo, their very considerable and valuable collection of unidentified crustacea were ~~was~~ lent for further laboratory study in Washington. The ^{collections of the} Brazilian National Museum was also ~~visited~~ ^{examined} while at Rio de Janeiro.

In Uruguay, all told, about seven weeks were spent chiefly at Montevideo, and in trips with the steam trawlers working out of that port. Calls ^{were made at} Puerto La Paloma, Maldonado, and Barro de Santa Lucia ~~were also visited.~~ ^{at C. Ar} Montevideo the Instituto de Pesca maintains a well equipped fisheries

laboratory. The National Museum, in view of the wealth of the country, where the American dollar is at a discount, should have a new and independent building instead of being housed in a portion of the Teatro Solis building.

At Buenos Aires the first year's field work was brought to conclusion with an examination consuming the better part of two weeks of the extensive crustacean collections here brought together by the Buenos Aires Museum.

Permission was granted to take a selected series back to Washington ~~for further~~

~~study.~~ The excellence of the collections of these forms is ^{in a measure} due to a system of subsidizing fishermen, and providing them with suitable collection kits for the preservation of the interesting material that may turn up in pursuit

of their calling. ^{A visit was also paid to} The famous museum at La Plata ~~was also visited~~ where, in addition to their marvelous exhibit of fossil vertebrates, other zoological collections are maintained. Here too the carcinological collections were most generously tendered for study in Washington.

Everywhere most cordial and helpful assistance was rendered both by national and local government officials and members of the American diplomatic and consular services. Interested residents and scientific workers in the several countries ~~visited~~ frequently arranged remunerative trips to proven collecting grounds. In conjunction with the collections of representative forms, observations upon their physical environment were made, with a view to a better understanding of their geographical distribution. South Americans of German descent contribute quite a noticeable element to the population in ^{but} the totals for the several countries ^{they are} ~~being~~ outnumbered by those of Italian extraction. They were most sympathetic and helpful in furthering scientific studies of any kind. Lacking a knowledge of the native tongue in southern Brazil or Spanish South America, a knowledge of German will stand one in

almost as good stead. In the larger cities one can find English spoken to a considerable extent, and all the leading hotels have at least a major-domo, as it were, at the door who can almost speak any language one cares to use, a most happy arrangement for the alien on his first visit to South America.

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S. Amer.
1925
Brazil
only

Dr. Waldo L. Schmitt, Curator of Marine Invertebrates, was awarded the Walter Rathbone Bacon scholarship for the purpose of making a study of the crustacean fauna of South America. He hoped to spend the last six months of this year investigating the fauna of the east coast of the continent, and left New York August 1, arriving at Rio de Janeiro on the 13th, where he was accorded every courtesy, both by the Brazilian officials and the American Ambassador. Much collecting was done in the Bay of Rio de Janeiro, and valuable material obtained at Paqueta Island. (A harbor tug was generously placed at the disposal of Dr. Schmitt by the Brazilian authorities for trawling purposes, but the hauls made in deep water yielded nothing but mud or sand, and the boat being too large for shallow water work, this method of collecting was abandoned.)

Dr. Schmitt visited the Museu Nacional, examined the collections, and received much valuable information from Dr. Carlos Moreira, the Brazilian carcinologist, who was for a long time attached to the Museum, in regard to the local marine fauna and the best collecting grounds.

Heavy rains and unavoidable delays prolonged his sojourn at Rio de Janeiro until September 7, when he left for Santos, arriving there the following day. The near-by Museu Paulista at São Paulo was visited and here he met Dr. H. Luderwaldt, Custodian, who for many years has been a correspondent of the U. S. National Museum. The collections of the Museum were examined and greatly admired by Dr. Schmitt (who writes that "They are the best kept I have ever seen and well arranged.") Dr. Schmitt was very much gratified at receiving from the Museu Paulista permission to work up its collection of unidentified crustacea, and for the privilege of

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On September 17, accompanied by Dr. Luderwaldt, he started for Sao Sebastiao, arriving the next morning after a most uncomfortable night on a small boat. The collecting here was good and many varieties of crustacea were obtained. Night collecting yielded valuable tow-net hauls. Upon this island several species of fresh-water shrimps were obtained. Dr. Schmitt is of the impression that these shrimps can travel considerable distances over

making exchanges. The fishing grounds of Santos were visited and some material obtained from the seine hauls of the fishermen. (It was a great disappointment to him not to find any steam trawlers at Sao Paulo, the war having rendered their operation unprofitable.)

On September 17, accompanied by Dr. Luderwaldt, he started for São Sebastiao, arriving the next morning after a most uncomfortable night on a small boat (- he writes "But Caesar's ghost! What a craft! Fairly large, but just a deck on a hull, no shelter, and slow.") The collecting here was good and many varieties of crustacea were obtained. Night collecting yielded valuable tow-net hauls. Upon this island several species of fresh-water shrimps were obtained. Dr. Schmitt is of the impression that these shrimps can travel considerable distances over land through the woods should their parent stream go dry. He states that tiny Euphausids produce a magnificent phosphorescence at night in the waters around the island.

He returned to Santos September 28, where several cases of specimens were prepared for shipment to Washington.

Passing down the coast, collections were made at São Francisco Island, then at Castro where several fresh-water streams were visited. Here, amongst other things, two species of an anomuran crab of the genus Aeglea were obtained. These Dr. Schmitt considered a great find, as they are rather rare in collections and there has been some uncertainty as to their status.

He left Castro October 21 and traveled by auto over the mountains to Blumenau. (He writes "I have more respect for a Ford than I ever thought I would have. There is no car like it for rough cross country travel".) Here he met Fritz Schmitt, the son-in-law of Fritz Müller, the

celebrated naturalist, visited Müller's former home and saw the very simple microscopes with which he did such excellent work.

He returned to São Francisco October 27 when several cases of specimens were packed for shipment to Washington. The weather and tides being favorable, some excellent collections of shrimps and amphipods were made at this station, and he says "I've extended the ranges of a number of species, and surely found a couple of new ones here".

He arrived off Itajahy at 8 p.m., Nov. 2, after a cold, rainy trip, and early the next morning anchored off Florianopolis. (The food and accommodations of this trip, he states, were the worst he had yet struck in all Brazil.) Some tow[^]net hauls and shore collecting here produced excellent results. (At this time he states that he hopes to be at Rio Grande do Sul by the fourth of November and a few days later at Montevideo.)

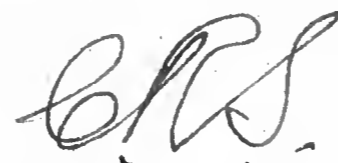
Owing to the many unavoidable delays, Dr. Schmitt has not been able to progress as rapidly as he had hoped, but the ground has been as thoroughly worked as possible and several cases of specimens have already been received at the Museum. His collections at this time comprise several thousand specimens and consist chiefly of Crustacea, Coelenterates, Porifera, Echinoderms, Annelids, Bryozoa, and Fishes.

December 29, 1925.

Dr. Stejbeger,

I am returning the two accounts of Dr. Schmitt's field activities for 1925, which, in compliance with your request, have been cut 20 per cent. Two of the photos have been eliminated also.

Respectfully,

A handwritten signature in cursive script, appearing to be 'C. R. S.', is written below the typed name 'Respectfully,'.

Tortugas.

Dr. Waldo L. Schmitt, Curator of Marine Invertebrates, spent the month of June at the Carnegie Marine Biological Station, Tortugas, supplementing his last year's investigation of the Crustacea of the region. In collaboration with Dr. Longley, extensive studies of the food of fishes were pursued, Dr. Schmitt giving particular attention to the crustacean element of the problem. He examined about 750 fish stomachs and by this means added several species to his previous list of Crustacea. He writes, "We can already see specific feeding differences in closely related species; of the two snappers, the one feeds on the sand-dwelling Crustacea, and the other on the rock and eel-grass inhabiting forms. And these are fishes that during the day largely school together; in fact, we take them with the same shot of dynamite." About two thousand specimens of marine invertebrates were obtained through Dr. Schmitt's efforts, and these consist chiefly of Crustacea, Sponges, Coelenterates, Bryozoa, Echinoderms, and marine Annelids.

land through the woods should their parent stream go dry. He states that tiny Euphausiids produce a magnificent phosphorescence at night in the waters around the island.

He returned to Santos September 23, where several cases of specimens were prepared for shipment to Washington.

Passing down the coast, collections were made at Sao Francisco Island, then at Castro where several fresh-water streams were visited. Here, amongst other things, two species of an anomuran crab of the genus Aeglea were obtained. These Dr. Schmitt considered a great find, as they are rather rare in collections and there has been some uncertainty as to their status.

He left Castro October 21, and traveled by auto over the mountains to Blumenau. Here he met Fritz Schmitt, the son-in-law of Fritz Müller, the celebrated naturalist, visited Müller's former home and saw the very simple microscopes with which he did such excellent work.

He returned to Sao Francisco October 27, when several cases of specimens were packed for shipment to Washington. The weather and tides being favorable, some excellent collections of shrimps and amphipods were made at this station, and he says "I've extended the ranges of a number of species, and surely found a couple of new ones here."

He arrived off Itajahy at 8 p.m., Nov. 2, after a cold, rainy trip, and early the next morning anchored off Florianopolis. Some tow-net hauls and shore collecting here produced excellent results.

Owing to the many unavoidable delays, Dr. Schmitt has not been able to progress as rapidly as he had hoped, but the ground has been as thoroughly worked as possible, and several cases of specimens have already been received at the Museum. His collections at this time comprise several thousand specimens and consist chiefly of Crustacea, Coelenterates, Porifera, Echinoderms, Annelids, Bryozoa, and Fishes.

1926-27

STUDY OF THE CRUSTACEANS OF SOUTH AMERICA.

In the three years that my incumbency of the Walter Rathbone Bacon Scholarship of the Smithsonian Institution has enabled me to carry on the field studies necessary for the consummation of a proper monograph on the Macruran fauna for the coasts of South America, I ~~have had~~ ^{the opportunity of} living again, those ~~happy~~ anticipations, and joys that must have guided and fired the zeal of earlier field workers who contributed so much to the early history and collections of this and kindred institutions, and to our greater knowledge of the marine life of America^s William Stimpson, Thomas Say, John Xantus, ~~Charles D. Dana, Lockington, Silas Stearns and a host of others.~~

The conclusion of last year's exploration account left me on my way to that "Vale of Paradise", Valparaiso, Chile, ^{which I reached November 18, 1926.} As the steamer stopped en route to discharge and take on cargo, halts often of some hours duration, intertidal collections were made at Tocopilla, Antofogasta, Chañaral and Cruz Grande, Chile.

In Chañaral, when it was learned that I represented the Institution, I was asked by a Mr. Badger, connected with the copper mines at that place, if I knew Dr. Dyar. Upon an affirmative reply, he said:

"He named a mosquito after me." ~~It is~~ Culex badgeri Dyar "taken from ~~stagnant~~ ^{stagnant} pools of water in the oil fields at Bakersfield, California collected by Mr. Badger, ~~at that time stationed at~~

Valparaiso I should call the San Francisco of South America in ~~the narrow streets of the older town and~~ almost every sense of the word, the business-like atmosphere, the hills, and

the ~~ancensors~~ ^{ancensors}, reminiscent of the ~~small~~ cable lines up Telegraph Hill, and the stimulating "California" climate. ~~The Valparaiso Museum has some very valuable material particularly from Easter Island, and a few living animals are maintained in the court behind the building proper.~~

~~It was from here that~~ ^{that historic} ~~one time~~ I had the good fortune of being given passage to Juan Fernandez, the home of the usually accredited prototype of Robinson Crusoe, Alexander Selkirk, ~~this~~ ^{the hero of Robinson Crusoe,} through the kindness of Senor

Doniez, part owner of the spiny-lobster fishing concession on the island and the schooners which bring the catch to the mainland. The spiny-lobster

The specimens of Culex badgeri were made for the purpose of the study of the life history of the species.

or crawfish-fishery of Juan Fernandez is one of the largest of its kind, and the total catch of over 87,000 individuals as given in the Chilean fishery statistics for 1925 for the two companies operating in those waters exceeds, ~~on a~~ ^{on a} poundage basis, the combined catches made in the States, in California and Florida, where a nearly related species is taken for the market.

The extremely generous hospitality of Senor René Durand and his family rendered most pleasant and profitable a sojourn of twenty ^(delightful December) days on this veritable earthly paradise. Few places are blessed with what ~~seemed to me~~ such an ideal, healthful, and fruitful climate.

As Dr. Skottsberg, the well-known Swedish botanist, has remarked: "From a botanical point of view, Juan Fernandez is one of the world's most famous places *****. About 65 per cent of the total number of vascular plants (phanerogams and ferns) are confined to that small group of islands. It is as if one had been carried back to a past geologic period, as if one waded about in a living museum crowded with rare specimens. So many wonderful plants are brought together here on a small area that one must touch them to realize that one does not dream."

Preliminary studies, on some of the zoological collections I brought back with me, have disclosed a distinct species of New Zealand crab new to this fauna ^{now} and a spider of a genus known from South Africa, Australia, and New Zealand, and found here, the first record for the Western hemisphere. The zoological evidence of the Polynesian and subantarctic affinities of the life of Juan Fernandez has never been as strong or pronounced as that based on botanical data. The two finds ~~therefore~~ just recounted are therefore rendered all the more significant. ~~Several tow-net hauls enroute to the island secured a number of luminescent copepods and schizopods and specimens of the beautiful floating violet~~

It is a pleasure to acknowledge the cordial reception accorded me at the National Museum of Chile in Santiago by Dr. ^a Eduardo Moore, the Director of that Institution, Dr. Juan Brügger of the University of Chile, and Dr. Carlos E. Porter, ^{the} indefatigable Chilean zoologist, a ~~tried and true~~

friend of the Smithsonian Institution. Dr. Porter is particularly ^{to be} commended for ~~his maintenance~~ and his personal financial support of the Revista Chilena Historia Natural, *the only zoological periodical published in Chile.*

In Santiago, ~~the headquarters~~ of the Chilean Forest, Fish and Game Commission, Dr. Ernesto Maldonado, Director, ^{as well as} ~~I~~ were visited and the very excellent small museum maintained by this department ^{was} ~~visited~~. In consultation with Dr. Maldonado and Dr. Augusto Opazo G. of the Fisheries Service, plans were outlined by which the Institution would undertake to prepare a report on the crustacea of the coasts of Chile, based upon material to be collected and shipped to Washington for the purpose.)

The American Ambassador to Chile, Mr. Collier, is to be thanked for his kindness in lending a member of his staff to ~~these~~ preliminary ^{discussion.} ~~arrangements.~~

The Museum of the University of Concepción, though small, is still growing and covers a wide range of activities. It is the best museum of its kind that it was my pleasure to visit on the West coast of South America. That it is an institution of great promise is almost entirely due to the energy and enthusiasm of its Director, Dr. Carlos Oliver Schneider.

From Talcahuano, Castro on the Island of Chiloe was reached five days later, after short stops en route, permitting some shore collecting at Lota, ^{and} Corral. Southward through the Chonos Archipelago and the canals of southern Chile to the Straits of Magellan, the scenery in many respects compares favorably with that of the Inland Passages to Alaska. This vast stretch of coast from Castro south ^{over a thousand} ~~some~~ miles in a straight line is still a "terra incognita" with but little more known of its resources and scientific potentialities than when Darwin first visited ^{the region} ~~87~~ years ago. From all reports of Chilean ~~naval~~ officials it should prove an extremely fertile field of marine research by ^{an} expedition properly equipped to explore its otherwise inaccessible fastnesses. Collections of animals ^{either not at all} ~~not~~, or ^{else} ~~poorly~~,

In Punta Arenas in a wonderful little museum maintained by the Salesian Brotherhood. It is a treasure house of things and rarities Eugean and well worth a visit

represented in the National collections were made at Punta Arenas, Chile, before ~~and after~~ visiting the Falkland Islands. Port Stanley, Falklands, was reached after what I considered a rather tempestuous passage, in which the galley of the small schooner in which the journey was made was flooded, the vegetables and potatoes washed overboard, and the motor-room hatch stove in. All this in the course of what the Captain called fairly good weather! The Falklands are well-known in historical annals chiefly through the visitations of Darwin, the Challenger, and the collections of Mr. Rupert Vallentin.

ethnologists interested in this fast disappearing race of Indians.

Most helpful assistance was extended me ^{for more than} ~~throughout nearly~~ a month's stay, ~~March~~ ^{February} on East Falkland by the Governor, the Colonial officials, and all the private citizens with whom I came in contact. The interest of the school boys of

~~to Apr~~ to April, 1927,

Stanley caused them to bring in a number of specimens which might otherwise not have been obtained, while a brief talk to a class ^{of pupils} at Teal Inlet resulted in the establishing a new record of the occurrence of one of the rarer shrimps secured by Miss Eileen Felton from the roots of kelp hauled from water about two fathoms in depth, for the purpose of fertilizing the fields. ~~It was a~~

specimen of Campylonotus vagans Bate, heretofore known from the Straits of Magellan, Cape Horn and South Georgia.

Taking advantage of an opportunity offered while in the Falklands, a trip was made via the once yearly mail to Deception Island of the South Shetlands, the headquarters of the whaling industry of that region. En route several towⁿnet hauls yielded a number of organisms new to the Museum collections.

Twenty eighth in the Falkland Islands,

In the course of ^{my} ~~the~~ return journey ^{to the States} ~~to Washington~~ ^{beginning April} some collections were secured at several ports in Argentine Patagonia: Rio Gallegos, Santa Cruz, San Julian, Deseado, Comodoro Rividavia, and ~~at~~ Puerto Madryn. While at Buenos Aires, ~~the most cordial relations were reestablished with~~ ^{through the kindness of} ~~Dr. Doello-Jurado,~~ ^{continuing}

^{was} of crustacea ^{were} ~~obtained.~~ ^{made.}

At São Paulo, Brazil, the Museo Paulista from which we have

had most helpful cooperation for a great many years, was revisited during the two days that the northward bound steamer was taking its cargo of coffee on board at Santos. I

Arrived in New York on June 7 and returned to the Museum two days later.

The most grateful acknowledgment is due to the memory of Mrs. Virginia Purdy Bacon and her son Walter Rathbone Bacon, in whose honor the travelling Scholarship was founded, which ^{made possible} ~~enabled~~ this otherwise impossible, general reconnaissance of the marine fauna of the greater part of the coasts of South America ~~to be made~~. More than 15,000 specimens, and many valuable notes and observations have been returned to the National collections. ~~during two incumbencies~~ ^{my years} of this Scholarship. A very great deal of this material is new to the collections, and includes many new records of occurrence and distribution, and, as far as the limited preliminary studies have indicated, a ~~promising~~ number of species new to science.

Checked.

J Mc.

WALDO L. SCHMITT

Bacon Scholarship

Aug. 1926 - May 1927

Cans from Guayaquil:

- #1. From Salinas and Punta Santa Elena, Sept. 1926.
- #2. Land crabs are in bundles as sold in market.
Crabs purchased in "Mercado del Sur" Guayaquil, Sept. 21 & 22, 1926.
- #3. Fish and crabs purchased in market, Guayaquil.
Crabs, Sept. 22, 1926; fish purchased Sept. 23, 1926.
- #4. Stuff from Salinas, plus two spiny lobsters purchased from man on board Cypress at ~~Guayaquil~~, Sept. [1926.]
Guayaquil,

Bacon scholarship has enabled me to live again the pleasures and aspirations that must have guided Stimpson, John Xantus, and others who contributed so largely to our knowledge of the invertebrates of America. Here at Paita alone I have found five if not six shrimps not obtained by Dr. Coker, and a Menippe and a Cancer not appearing in his collection. Of course one meets with many disappointments, particularly as regards fishermen.

Chimbote, Peru, should be collected.

Here at Paita they speak of a Langostina much smaller, which they say is quite different from the Langosta.

In Ecuador the one spiny lobster fisherman I was able to get to catch me some looked for specimens without a water glass, dropped a casting net over them and then dove over to bring them up.

Here in Paita, Peru, the water is always roily it seems, and the men go out among the rocks and feel around under them, and pull them out. The result is they get mostly small ones. Or else [they] put a seine around the rocks and by poking around them with an oar try to scare the lobsters in the net.