

From Antarctica To San Diego —

By Egg

by Debra Argel/Aviculturist
Sea World, San Diego

In May of 1983, the long awaited Penguin Encounter at Sea World in San Diego finally opened. However, this event did not signal the end of a long-term project; but rather the beginning of a new phase. One of the major goals was to establish species of Antarctic avifauna which had never been seen within a controlled environment previously.

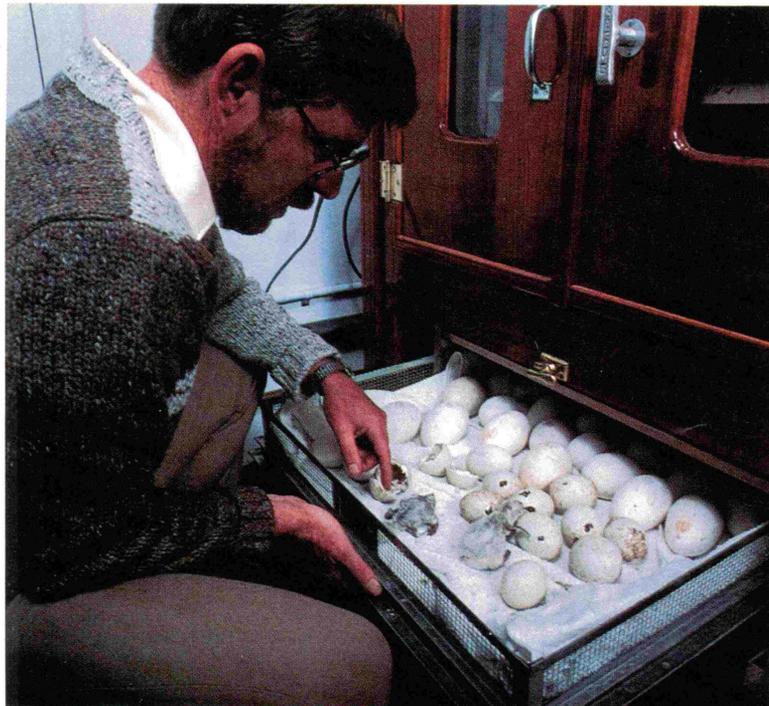
Early in November, Frank S. Todd, Scott Drieschman, and Frank Twohy departed for the Antarctic. Working with the Chilean Air Force, a field camp was established on Nelson Island adjacent to the Antarctic Peninsula. The objective was the acquisition of eggs, rather than live birds. To accomplish this, numerous logistic problems had to be overcome. Portable self-contained incubators had been developed for this purpose. Despite deplorable weather conditions, in excess of 400 eggs were acquired. The success of the venture was due in great part to the skill and dedication of the Chilean helicopter pilots who routinely performed impossible and often dangerous tasks.

Photo by Scott Drieschman



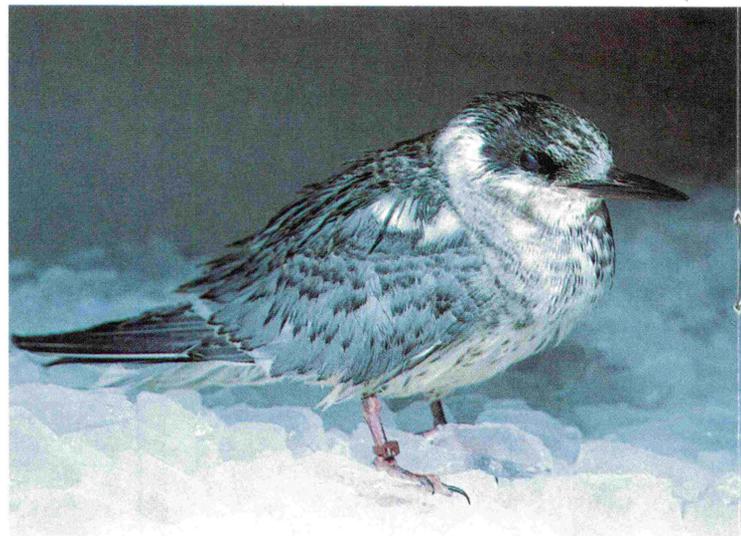
Frank Todd checking chinstrap eggs on Nelson Island.

Sea World photo



Todd with chinstrap chicks.

Karen Schlom photo



Antarctic tern.

Sea World photo



Giant petrel
10 days old.

Linda Martin photo



Giant petrel/45 days old with Debra Argel.

Antarctic tern chicks.



Sea World photo

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In the meantime, the Sea World Aviculture Department, along with a large contingent of volunteers and keepers from other zoos from all over the country, anxiously awaited the arrival of the field team. I had initially heard about the proposed project from Gael Donnelly, an aviculturist I had worked with at Miami's Metro Zoo, and immediately made arrangements to join the team. At the time, little did I know what I was getting into. I don't think anybody did. Since I had never worked with penguins before, I arrived several weeks early to acquaint myself with feeding and handling techniques of the 300 penguins of six species already residing in the Encounter.

On December 12, the field team returned with the gentoo and chinstrap penguin eggs, as well as giant petrel, brown skua, kelp gull, blue-eyed shag, Antarctic tern and sheathbill eggs. Most of these species had never been seen in captivity before, much less hatched and hand reared. Collecting eggs in the Antarctic was a totally new concept.

The original penguin research freezer had been converted into a USDA approved quarantine facility for the project. This would serve as a "home away from home" for many of us for about the next four months, since all of us were virtually in quarantine as well. Once the eggs arrived, the action started immediately. The news media was on hand that first day, as well as the German film crew which had accompanied the team to the Antarctic. Because of quarantine restrictions, no one but the penguin rearing crew was allowed into the freezer unit. However, video equipment was provided inside the facility which could be hooked up to tape decks outside where all the interviews took place.

The shags and terns were already hatching and the chinstrap penguins would commence hatching within days. This meant we would have to work fast to chart the weights and measurements of the eggs. I felt privileged to be gathering important data on species never before seen or hatched in the U.S.

December 18 was a great day for all of us. The first two of the many chinstrap penguins to come, hatched. The tiny chicks were covered with a beautiful silvery grey-white down and had dark bills. From this point on there was no stopping them. By December 24 the quarantine staff was suggesting that we ought not shake the incubators for fear even more would hatch. The penguins all seemed to be hatching simultaneous-

ly. I had driven to Santa Barbara to be with my children on Christmas Day and Gael called me frantically from quarantine. "When are you coming back? They are hatching like crazy and we need all the help we can get."

Those days can only be described as hectic since seven feedings a day were required for over 200 hungry chicks. Two feeding teams operated at each end of a big table. These teams consisted of three feeders and one recorder. Feeders would call the weights of the chicks to the recorder, who in turn would figure the amount of formula to be fed, then a final weight was taken. We would no sooner finish one feeding when it was time to make formula and start again. Recording the data alone was a full-time job.

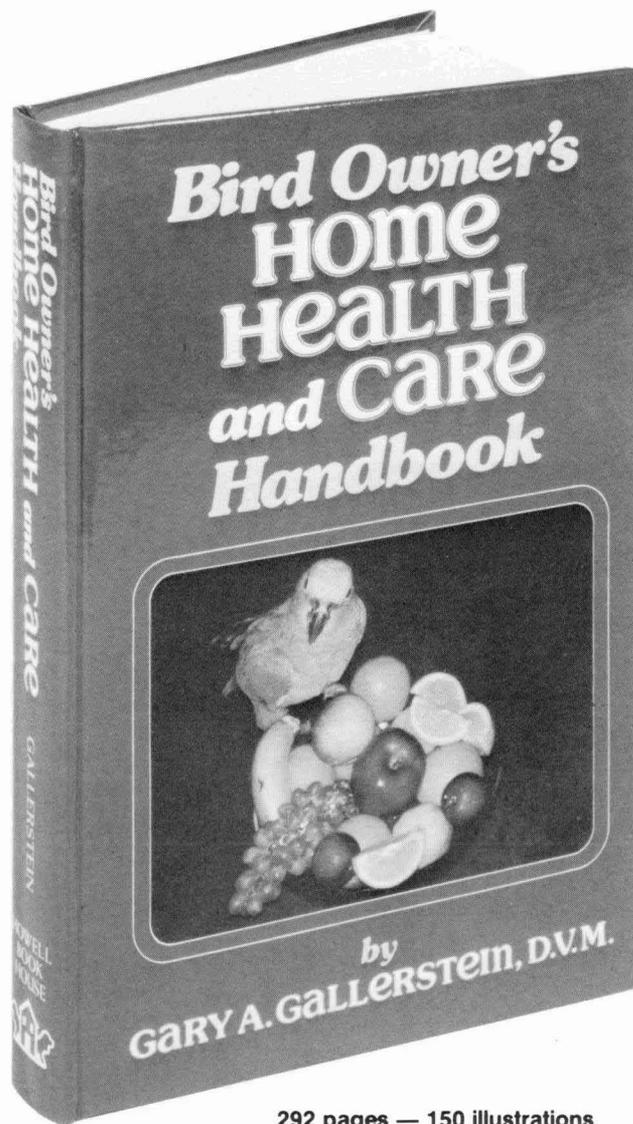
The penguin formula (or penguin milkshake) consists of a mixture of krill, herring fillets, cream, water and vitamins blended together. This is heated and fed by syringe. Healthy penguin chicks have a definite feeding response which is initiated by placing two fingers on either side of the bill. Those which did not have a good feeding response required a great deal more work.

For the most part the operation went very smoothly. Some of the volunteers had never worked with birds before but caught on quickly. Contrary to popular belief, feeding and caring for penguins is not glamorous. At the end of each day we were literally covered with guano and formula and had the not-so-faint odor of fish about us. Many days we would literally drag ourselves out at 11:00 p.m., only to return again at 6:00 a.m. the following day. The days were very long but were never what could be described as routine.

The brooders were packed by the first week in January. We had to begin moving them out. Chicks with a good feeding response, which weighed in excess of 200 grams, were moved to pens in the cool room. As they matured, the temperature was gradually lowered. In addition to the penguins, we also had our hands full with baby terns, shags, and skuas.

Then the giant petrels began to hatch. Few of us had ever seen a giant petrel before. Someone was heard to say — "Gads, if they hatch with a bill that size, what are they going to look like as adults?" No petrel species had ever been reared from the egg and many of our initial efforts consisted of trial and error. Not unexpectedly, we suffered some losses, but if we kept the chicks going for the first week or so, they were over

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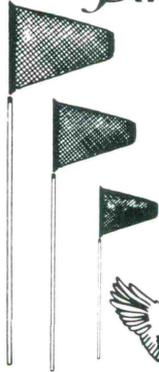
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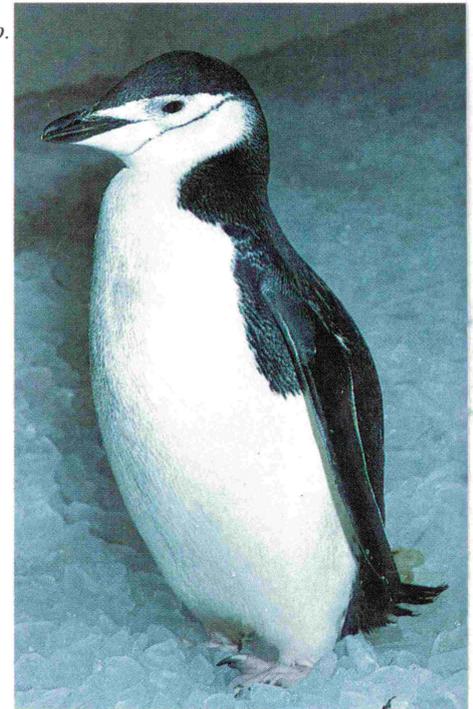
Chinstrap.

Chinstrap hatchlings.



Sea World photo

Sea World photo



Karen Schlom photo



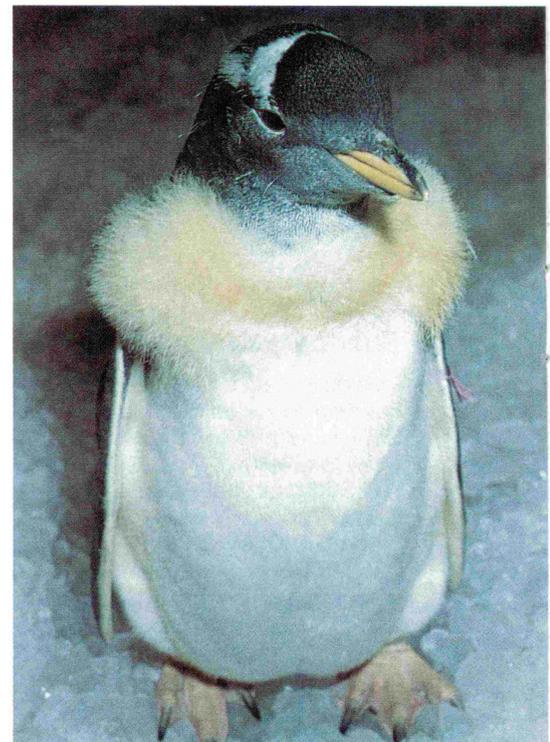
Feeding formula.

Fledged blue-eyed shag.

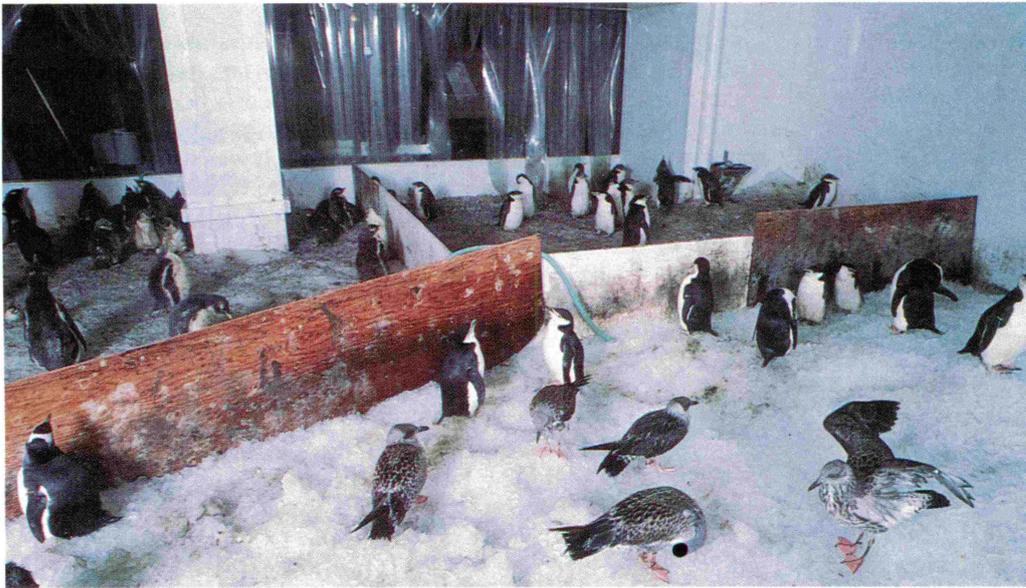


Karen Schlom photo

Fledling gentoo/45 days.



Karen Schlom photo



Cold room quarantine.

Sea World photo



Receiving the certificate, from left to right: Leslie Osmera, Sherry Baldwin, Frank Twoby, Denise McCarddel, Linda Martin, Joop Kubn, Debra Argel, Gael Donnelly.

Sea World photo

the hump.

On January 12 at 6:00 a.m. we began our work day as usual. After checking the chicks, the incubators were monitored for pipping eggs. At the time, we had many pipping eggs in the hatchette, including a few giant petrels. All appeared to be progressing normally. The incubator temperature was registering the normal 97 degrees F. Suddenly, at 9:00 a.m., tragedy struck. The temperature shot up to 112 degrees F. The incubator was immediately shut down and I began to check the eggs. As I pulled out the hatchette drawer, my heart sank. All the hatching chicks were dead in the shells. All the remaining eggs

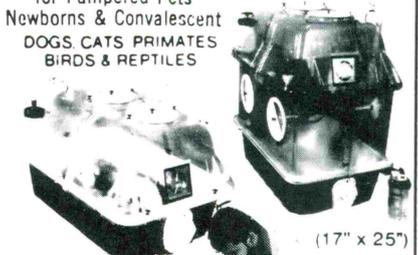
in the incubator itself were also lost, but fortunately, the bulk had already hatched. Nevertheless, it was a severe blow to all of us. Frank Twoby had the most unpleasant task of contacting Frank Todd with the bad news. Todd was departing again for Antarctica within three days and we felt badly about sending him off on a sour note. The overheating was caused by a defective thermometer. The incubators had an alarm system which alerted us to loss of temperature; overheating had never been experienced previously. It goes without saying that an overheating alarm is already in the works.

On January 18, the incubators were

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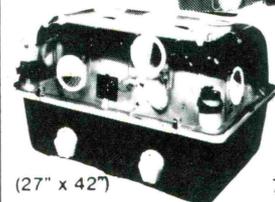
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officially shut down. The USDA official assigned to the project came in to swab the remaining eggs (yes, the eggs had to be swabbed) and we began the final 30 days of quarantine. Essentially all of the chicks had been transferred to the cold rooms. The penguins were now on ice. By mid-February, most of the penguins had fledged and it was time to fill the salt water pool and give them their first swim. We literally had to push them in the first time and they would swim back to us immediately. However, within a few days, we couldn't get them out of the pool.

By this time, the six giant petrels chicks were about 50 days old and growing at what seemed like an alarming rate. Their wing span already exceeded three feet. The adult bird has an average 7-foot span. Their personalities were developing as they matured. They had become so aggressive, it was necessary to separate them from each other, not only physically, but visually as well.

Dr. Frank Enders, the USDA veterinarian, had determined February 21 to be the final day of quarantine. Twohy, assuming everything would be released as scheduled, arrived that morning with several cases of champagne. About 3:00 p.m., Scott appeared with the USDA veterinarian from Sacramento waving the prized certificate of release. They were followed by an NBC news team, Sea World photographers, aviculture staff and more. To describe the emotion of the moment is difficult. We had all worked so hard the past three months for this day. Todd was due back from the Antarctic in several days. Everyone was sorry he could not be with us, but we drank all the champagne anyway.

The first 15 birds were scheduled to be transferred to the Penguin Encounter on February 28. Penguins which were the largest, most active, and would take fish from the pool were selected. They were loaded into a large iced container and moved by truck to the Encounter. This was the day we (and undoubtedly the penguins) had all waited for. A national TV film crew shivered in full tuxedos inside the Penguin Encounter as we entered the exhibit. The birds were carried in by hand and released simultaneously.

The feisty chinstrap penguins took to their new surroundings immediately and headed straight for the water. The more timid gentoos remained close to us for awhile before venturing out on their own. The quarantine gang then reassembled on the public viewing side of the Encounter to monitor the

behavior of the new inhabitants. This was the first time we had been to the Encounter for months since we ourselves had only recently been released from quarantine. It was a day none of us will ever forget and it was still hard to believe that scarcely three months before these fantastic birds had been eggs in the Antarctic. Within the next few weeks, more and more birds were introduced to the Encounter. The addition of the flying birds such as the kelp gulls and skuas had added a new and exciting dimension to the Encounter.

By the end of March the quarantine unit was quite deserted but not totally abandoned. The slow growing giant petrels still were far from fledging. In the wild, this procedure requires some 115 days. Just how they will work out in the Encounter is anyone's guess at this point. But, as with all the other new species, no one will know until we try it. This breaking of new ground was one of the most exciting aspects of the project. All things considered, the egg project had been a great success, despite the disappointing setbacks. We had successfully hatched and reared far more birds than was originally envisioned.

The acquisition of all these new species can be considered the result of more than a decade of dedication to a single objective. The creation of the Penguin Encounter had been Todd's dream for many long years. His idea was to create more than an exhibit, but rather an ecosystem. Along the way, numerous new concepts in the field of aviculture were developed. All of us who were privileged to be involved in the egg project were fully aware this latest pioneering effort was not only a major contribution to aviculture, but to science as well.

Todd is strongly committed to the idea that it is imperative we know as much as possible about specialized lifeforms which might be subjected to potential exploitation in the future. In other words, what we learn about them today could be instrumental in formulating meaningful management plans for some forms of Antarctic avifauna, should drastic measures of this type be required.

In sum, despite the fact that for more than three months dozens of us toiled almost continually with hundreds of baby birds, we are saddened that it is almost over. We would gladly start over again. Our reward is seeing the product of our effort in the Encounter and the faces of millions of people light up when they see those fantastic animals we know as penguins. ●

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