

# The Night of the Whales

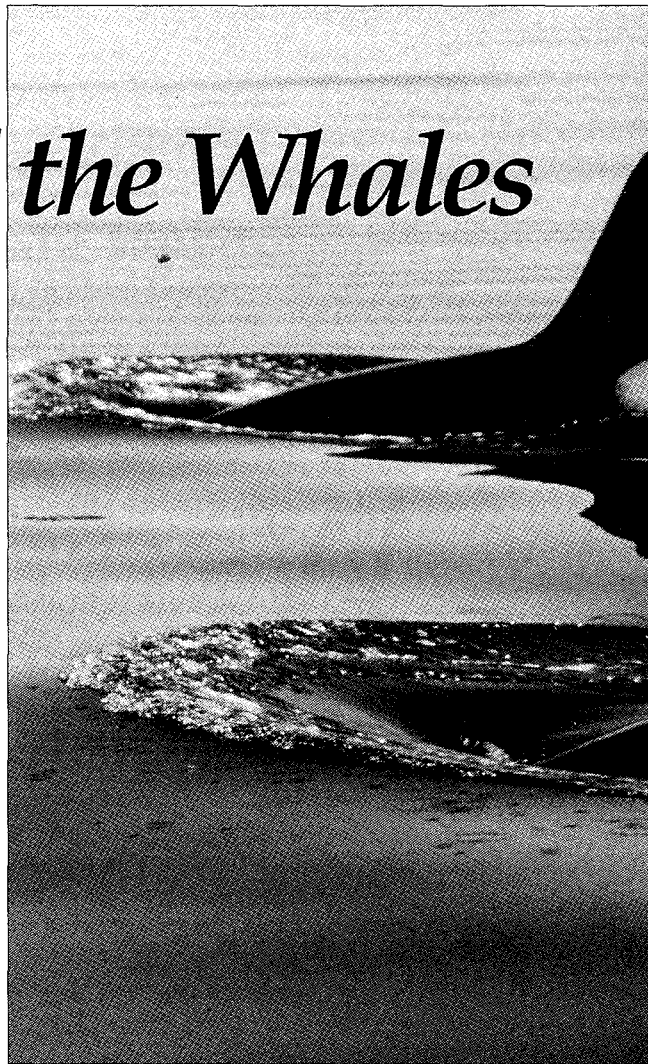
*Long before cetaceans became objects of popular affection and scientific scrutiny, the author had his first and most memorable encounter with the killer whale.*

BY WILLIAM W. WARNER

**O**ne January night almost 50 years ago I found myself looking straight into the eye of a large black whale. It had just finished swimming on its back, exposing a gleaming white underbelly, through a dense bed of kelp. The whale's swimming motion was slow, sinuous, and obviously sensual, as though it were enjoying a deeply satisfying back rub. Now it had righted itself and was swimming closer into the kelp bed, the inner edge of which was not more than 10 yards from the rocky beach where I stood. There it stopped for what seemed like a very long time.

Soon I became acutely aware that the whale's small, beady eye was fixed on me in what looked like a malevolent glare. Yielding to a small-boy impulse, I threw a rock at the whale. The rock hit the whale squarely on its shiny wet-black back, just behind its high dorsal fin. Instantly the whale raised its tail flukes, brought them down hard on the water, and drenched me in spray. I scrambled up the rocky beach, quite scared.

I knew the whale was a killer. "Bad feesh," said Don Clemente, my Yaghan Indian host, when the whales first came into



the small cove of Harberton on Tierra del Fuego's Beagle Channel. And had I not read how killer whales had lunged onto ice floes to snatch the sleeping sled dogs of Antarctic explorers? There was reason enough to give these creatures a wide berth. It is true of course that in recent years the orca, as the killer whale is also now popularly known, has been petted, caressed, and cheered by crowds as it performs all manner of acrobatics at various aquaria; it has also starred in a recent feature film. There are now even orca dolls for sale. They are a very popular item, I'm told, at San Diego's Sea World. But all of this, or *Orcinus orca's* kindly disposition toward humans, was quite unknown back in the 1940s when I was in Harberton.



What was known then was that given certain conditions killer whales might savagely attack penguins, seals, larger whales, and many other convenient forms of prey. They still do.

Even less known then was the concept of play among animals. Ethology, or the scientific study of animal behavior, was still in its infancy, concentrating mainly on mating rituals and territoriality. The idea that anyone other than ourselves might enjoy play for play's sake was not yet getting much serious attention. Certainly not in relation to cetaceans, at least, as the order that includes all whales and dolphins is known. But that is precisely what I was privileged to observe on a January night almost 50 years ago.

*"Their large dorsal fins, cutting through the water like tall black sails . . ."*

What took me to Harberton in the first place was an irrational urge to explore *la tierra mas austral del mundo*—the most southern land in the world—as Chileans and Argentines like to describe the Cape Horn region. Fresh out of the Navy and World War II, I had decided to make the trip using only public transport wherever such existed. Along the way I had the good fortune to meet the Bridges family of Viamonte on the Atlantic coast of Tierra del Fuego, descendants of the first English missionary to have dwelled successfully among the Yaghan. The Bridgeses kindly arranged for me to travel south across the

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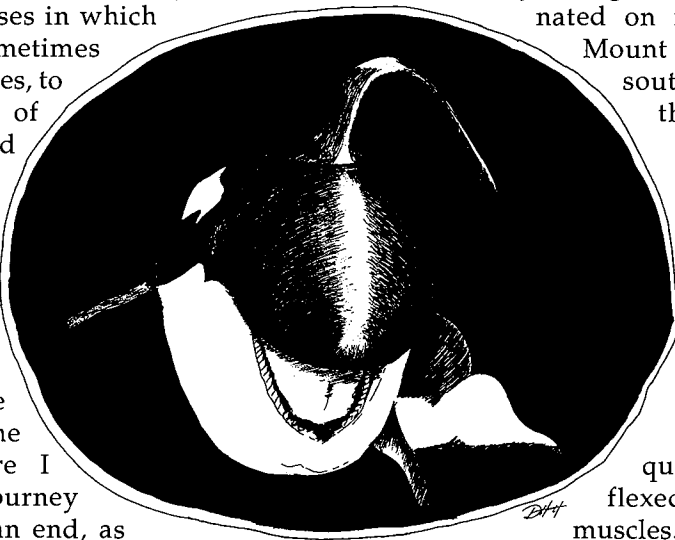
Darwin Range, guided by two of their ranch hands, to the family's original mission station at Harberton at the eastern end of the Beagle Channel. There, I was told, various small craft might stop en route down the channel to Ushuaia, a small town with a large prison then known as "the Devil's Island of Argentina." Once in Ushuaia, I could take my chances for transport to Cape Horn.

The journey across the Darwin Range, ordinarily one long day's ride, proved more difficult than usual. There were fast-flowing mountain streams to ford and bogs carpeted with brilliant yellow and orange mosses in which the horses sometimes sank to their bellies, to say nothing of snow-covered mountain passes. After a cold night on the trail—New Year's Eve, as it happened—I reached Harberton in the afternoon of the next day. There I thought my journey might come to an end, as day after day of the new year passed with not so much as a rowboat in sight.

I passed the time exploring Harberton's rocky shores, occasionally spotting a wary fur seal or flushing nesting pairs of Magellanic flightless steamer ducks. The latter are large birds, about the size of geese, known in Spanish as *patos vapores*. They never succeed in becoming airborne but move about quite rapidly

over the surface of the water by furiously beating their small wings and churning their webbed feet, "mak[ing] such a noise and splashing," as Charles Darwin once noted, "that the effect is most curious." The fur seals, much hunted in an earlier age, generally kept their distance or were quick to slither down into the protective masses of kelp. Sometimes, too, I scaled rocky headlands to view the countryside. To the north were the peaks of the Darwin Range, dusted with summer snows. To the south across the Beagle Channel was the Chilean island of Navarino, dominated by a long, low massif designated on most maps as Mount Misery. To the southwest, where the Beagle widened out to the sea, was uninhabited Picton Island, one of three small islands over which Chile and Argentina have long quarreled and flexed their military muscles. Beyond Picton and its two neighbors lay only the great southern seas and Antarctica.

It was about nine o'clock of a sunny evening during my second week, as I remember it, that the whales came to Harberton. They first announced their presence by a dull booming sound not unlike a distant or muffled cannon shot. I ran out of the kitchen where the camp crew was having a late supper to see three killer whales at the exact center of



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*William W. Warner, a former assistant secretary of the Smithsonian Institution, is the author of Beautiful Swimmers: Watermen, Crabs and the Chesapeake Bay (1976), which won the Pulitzer Prize for general nonfiction; Distant Water: The Fate of the North Atlantic Fisherman (1983); and At Peace with All Their Neighbors: Catholics and Catholicism in the National Capital, 1787-1860 (1994). Copyright © 1995 by William W. Warner.*

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Harberton's small harbor. One after another the whales raised their tails, formed the flukes into cuplike shapes, and then slammed them down hard on the water surface. The result was a deep-toned and satisfying thud, loud enough to reverberate around Harberton's hills. (Humans can at least approximate the effect in a bathtub by cupping both hands and bringing them down sharply to make little depth-charge splashes.) My first thought was that the whales were trying to stun schools of small fish. I therefore ran to get my binoculars for a closer look. But all I could see was mirror-smooth water, untracked by any fleeing fish. Gradually and almost inevitably, the thought that the whales were simply having a good time crossed my mind. There could be no other explanation.

Since the small inner harbor had a narrow inlet at its mouth not more than half a mile from where I stood, I set out half-running and half-stumbling over the rocky terrain to reach it before the whales might choose to leave. Along the way I all but tripped over a pair of the *patos vapores*, which immediately took to the water and spluttered off, squawking loudly in protest. But well before reaching the inlet, I was stopped in my tracks by a spectacular explosion. A large whale shot up out of the water, rolled over in midair, and came down with a resounding splash less than 20 yards from the shore.

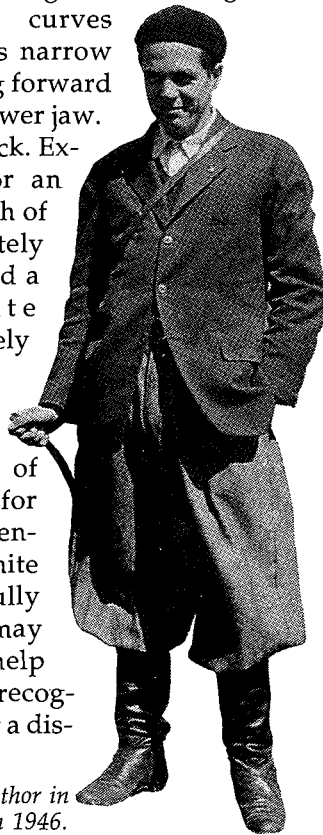
Killer whales are not large as whales go, but a healthy male adult will measure more than 25 feet in length and weigh as much as six tons. To see a creature of these dimensions erupt in quiet and confined waters—in a pond, in effect—is a nerve-shattering and awesome experience. What is more, the one leaping whale was quickly joined by about four or five others, including two juveniles. Some whales cleared the water entirely, landing as loudly as possible on their backs, sides, or bellies. Others shot up for only half or

two-thirds of their body length and then let themselves fall back in whatever posture gravity dictated. All joined in, adults and juveniles alike, in what I imagined could only be a joyous celebration of their chance discovery of a sheltered and secluded playground.

While this activity continued, one of the adults came into the kelp, rolled over, and began the slow and sensual swim I have previously described. This gave me a close view of one of nature's most startling black-and-white designs—the jet black of the whale's topsides, that is, against the gleaming white of its underparts. Whale-identification guidebooks generally describe the killer as having "back, sides, tail, fin and flippers black; chin, throat, chest and abdomen white." But the reader may gain a clearer picture of the contrast by imagining the white underside as flowing outward in gracefully scalloped curves from the whale's narrow tail and sweeping forward to a point at its lower jaw.

All the rest is black. Except, that is, for an oval-shaped patch of white immediately above the eye and a grayish-white saddle immediately behind the dorsal fin present on most whales.

The function of these patches or for that matter the entire black-and-white design is not fully understood. It may be that they help killer whales to recognize each other at a dis-



*The author in Argentina in 1946.*

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tance, since there are slight variations in the shape of the patches, not to mention the overall design.

In time, or after getting sprayed as a result of my rock throw, I happened to look back from the higher ground at the small group of whales that had first appeared at the center of the harbor. Three whales were still there, but one of the steamer ducks was missing. Then came one of those rare events that leave us with a large measure of disbelief—disbelief, as the popular expression has it, in what is happening right before our eyes.

At first the whales took turns coming up under the remaining duck like surfacing submarines, thus causing the poor creature to slide down their broad backs in various ungainly postures. Then one whale tired of this activity and swam close alongside the duck, curving its body to look backward as it passed. It then raised its tail and brought it down sharply. The steamer duck, now quite exhausted from repeated attempts to flee the whales' attentions, made a desperate lunge to escape the blow. But the whale's tail flukes did not strike the duck—indeed I do not think such was the whale's intention—but rather came down just close enough to create a great lateral thrust of water which sent the bird skidding across the surface directly to another whale. Much to my amazement, the second whale promptly raised its tail and in the same manner sent the duck skidding to the third. The third passed it back to the first. So it went. Each time the weary *pato vapor* made one more feeble attempt to escape, and each time the whales sent it skidding in what resembled nothing so much as an ice hockey game featuring deadly accurate slap shots. But very soon something distracted my attention—a particularly loud splash, I think it was—from one of the whales nearest me. When I looked back at the hockey players, the steamer duck was gone. I like to think that perhaps

the whales had suddenly tired of their game and thus allowed the poor duck one last chance to reach the safety of the shoreline. But such a scenario, all things considered, seems unlikely.

All play must come to an end, of course, giving way in the animal world to the more serious business of the hunt. In the case of the whales who came into Harberton, the moment came very abruptly. It was as if a leader in the group had given a sharp command to leave, since all the whales swam through the harbor mouth within a very short time. Their large dorsal fins, cutting through the water like tall black sails, passed by me in what seemed a continuous review. I watched them for a long time in the waning sunlight of the summer evening as they headed out to sea toward Picton Island and the great southern seas surrounding Antarctica. So, too, did a nervous fur seal hugging the shore quite close to me.

**A** week later, a small schooner took me down the Beagle Channel to Ushuaia. There I found that the prison, the notorious Argentine Devil's Island, was no longer the town's principal reason for being. Rather, an airfield, some oil-storage tanks, and various improved port facilities were rapidly being built to be used as a base for Argentina's Antarctic pretensions. In fact, Ushuaia had been declared a *recinto militar*, or a restricted area under military governance. What is more, as luck would have it, the first Argentine Antarctic expeditionary ship was expected later in the same day of my arrival. These circumstances caused me yet another enforced stay. Not to explore ways of getting to Cape Horn, that is, but rather to get out of Ushuaia, where I was immediately thought to be a spy. But that is another story. More important to this narrative is the fact that a month later I was in New

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York and eager to pass on my observations of killer whale behavior to any interested authorities.

**M**y first stop (and only one, for reasons that will soon become clear) was the American Museum of Natural History, an institution that had been one of my favorite boyhood refuges. After various inquiries and calls from one office to another, I was eventually received by a scientist—I remember neither his name nor his position—whom I supposed to be a whale expert. Patiently I read my field notes to him, pausing briefly for questions or exclamations of wonderment. But none ever came from my listener, whose face remained fixed in a patronizing smile. As clearly as any words, his silence told me he was not about to believe the unlikely observations of the young man sitting in front of him. Finished, I asked if he would like a copy of my field notes. No, thank you, he replied, there was really no need, since he could scarcely forget my vivid account of such extraordinary doings.

It was as we say today the ultimate put-down. I left the museum feeling both humiliated and angry, certain that I would make no further attempts to reach the scientific community. Looking back, I now know that it was futile to have made the attempt in the first place. At that time, the late 1940s, the Smithsonian Institution alone had a true whale expert, which is to say a full-time curator of whales and other marine mammals, in the person of the late Dr. Remington Kellog. What is more, the study of whales there and later at the American Museum and other kindred institutions was for many years confined largely to systematics, as biologists now like to call taxonomy—that is, the patient business of identifying all living things and putting them in properly classified order.

All this has changed. Whale behavior is now eagerly studied by scientists and legions of dedicated whale watchers. Although there remains very much to learn of whale life cycles, we now know more about both the play and the communication signals of a number of species, *Orcinus orca* among them. The slamming of cupped tail flukes on the surface of the water which I first saw at Harberton is now known as “tail lobbing” and recognized as a playful activity shared by a number of other species. The same can be said of “breaching,” or jumping clear of the water. This, too, is recognized as a form of play in which killer whales and humpbacks are the absolute aerial champions. Jumping for joy, I prefer to call it, since there seems to be no other satisfactory explanation for their spectacular leaps, although some scientists prefer to think of them as “an emphatic form of audio-visual communication.” After observing killers in other places, notably British Columbia, and watching humpbacks in the waters of Newfoundland and southeast Alaska, I have come to the conclusion that leaping most often occurs close to shore in relatively sheltered waters with plentiful supplies of small food fish or other prey. A quiet spot for leisurely dining in other words, which is reason enough for rejoicing.

**N**or should anyone be surprised to see killer whales lolling in kelp beds, as they did at Harberton. As far as we know, nearly all whales seem to welcome a sense of touch. This is especially true of the killers and their closest relatives, the dolphins. (Taxonomically speaking, killer whales *are* dolphins, or members of the family Delphinidae.) Given the opportunity, they are likely to investigate even a single piece of flotsam—a stray log, for example, adrift at sea—and rub up against it. Imagine, then, the attraction of coastal waters offering rocks, fine sand or pebbles, and wavy forests of kelp. Killer whales have been

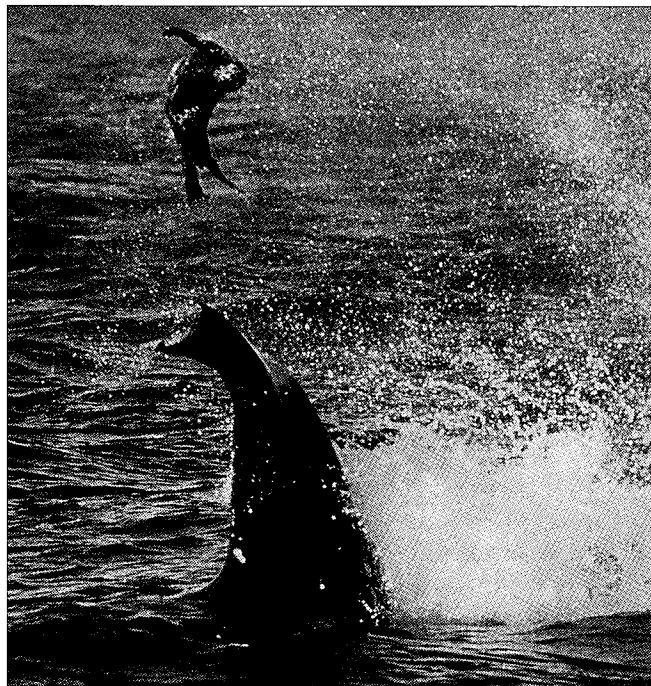


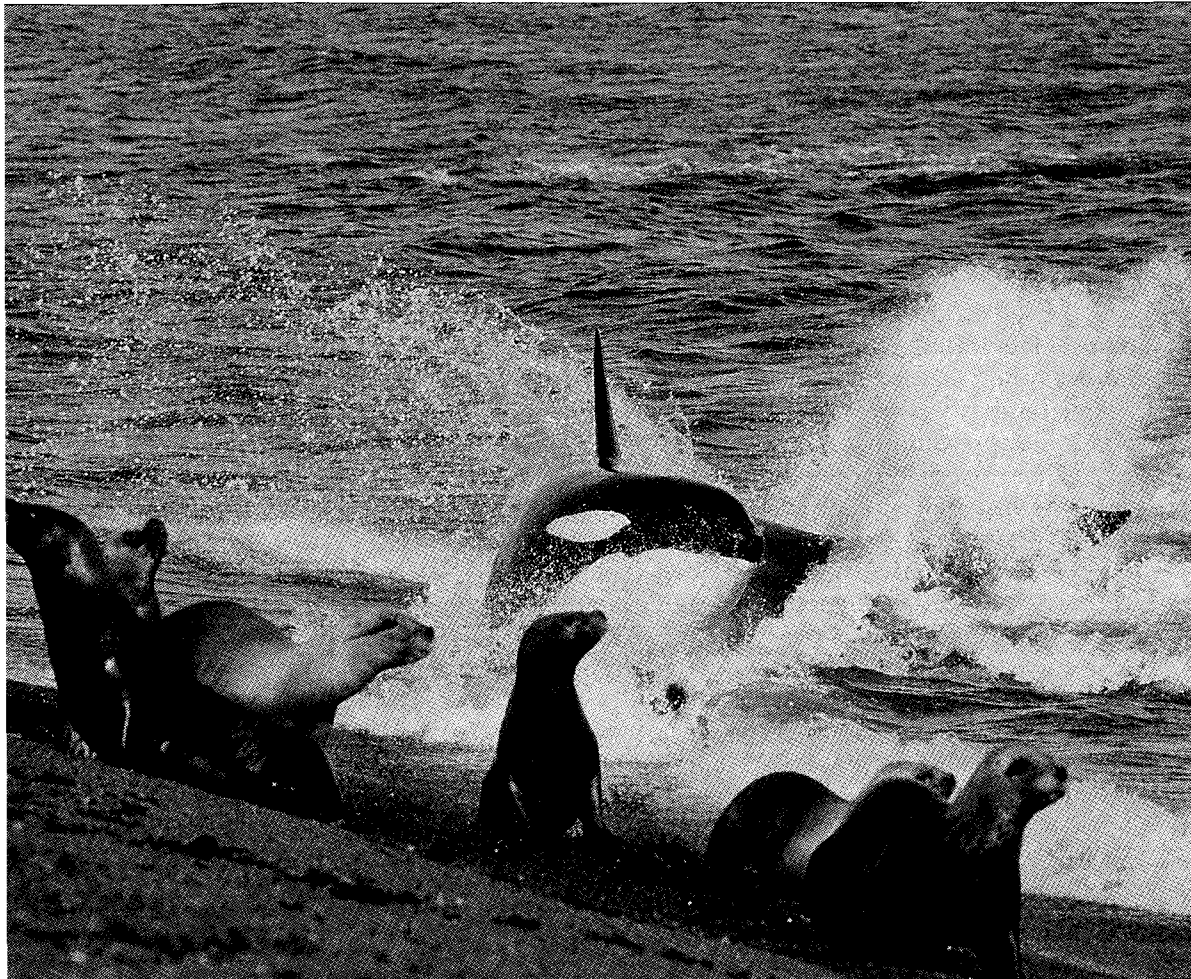


*Above: an orca practices beaching.  
Above, right: closing in on a herd of sea  
lions. Right: an orca flips its prey before  
devouring it.*

observed using all three, the rocks to scratch itchy or sore spots, the bottom sand or gravel for back rubbing, and, finally, the kelp as a lubricious balm, the ointment, so to speak, after a good massage. To prolong such tactile pleasures, in fact, the killers will often lift a mass of kelp and drape it over their heads and backs.

Neither is there any mystery about killer whales responding to command, as they appeared to do when I watched them leaving Harberton. To be sure, they lack the eerie and sometimes melodious "songs" of the humpback, recently the subject of so much study. But killer





whales do have a cacophonous variety of sounds—whistles, clicks, squeaks, grunts—which carry long distances and are more than enough for a repertoire of basic communications. That they do communicate, much like other dolphins, is now an established fact. Their working vocabulary, however, remains to be translated.

But there is one form of play, if indeed it can be called that, which the killer apparently shares with no other whale or dolphin. It is the deadly cat-and-mouse game, or the torment they inflict on their prey prior to consuming it. The steamer duck episode I witnessed in Harberton is

but one small example of what killers may do with larger prey species. Dr. Roger Payne and his associates, who have long studied right whales in Patagonia, and Dr. Claudio Campagna of the New York Zoological Society, who studies sea lions in the same general area, have seen small pods of killers play catch with both adult and young southern sea lions, a large species weighing up to 600 pounds. The killers literally throw the sea lions around, flaying them to death with vigorous head shakes. (Some scientists believe the flaying action helps remove the sea lions' fur pelts, which the whales normally regurgitate.) Other observers in both North and



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South America have seen similar cat-and-mouse tactics used on penguins and seals.

**M**ore often than not, however, play is foregone in favor of a swift attack and kill. In a startling photograph that appeared in *National Geographic*, one of Dr. Payne's assistants captured the moment a killer whale used its tail to hurl a large sea lion some 30 feet into the air. Jen Bartlett, the photographer, has so described the event, after patiently watching a patrolling pod of approximately six killers: "Moments later the ocean erupted and the sea lion came hurtling out of the water. The other whales moved in, and it was all over in a matter of minutes, with nothing left but scraps of meat on the surface for kelp gulls to scavenge."

Given such attacks, we are left to confront the one great apparent contradiction in killer whale behavior. How is it, we may ask, that such seemingly savage carnivores appear to enjoy friendly associations with humans and take readily to training in captivity? But here, too, answers are beginning to emerge. In the first place, we must bear in mind that killer whales have absolutely no fear of anything that swims in the seas—they are, after all, top-of-the-line predators—and are inclined to show a nonhostile curiosity toward boats, human beings, and almost anything else that is not part of their natural environment. (This curiosity noticeably increases, moreover, wherever the whales are no longer hunted or otherwise molested; conversely, it disappears quickly whenever they find themselves threatened or the objects of too much attention.) When in 1965 an entrepreneur from the Seattle Aquarium found it necessary to dive into a temporary net enclosure holding the first two killer whales ever taken for captivity, the whales, although obviously stressed, did not attack or harm him in any way. The same proved

true in subsequent encounters with the next few whales bound for other aquaria.

But more interesting and certainly more significant explanations for the killer whales' dichotomy of behavior are coming from those who have studied the whales in the wild most intensively. The late Dr. Michael Bigg of the Canadian Fisheries Research Board, Kenneth C. Balcomb of the Center for Whale Research at Friday Harbor in northern Puget Sound, Alexandra Morton of Raincoast Research at Simoon Sound near the north end of Vancouver Island, and other observers now conclude that there are two basic populations of *Orcinus orca* with different social and behavioral patterns. In the first are what might be called resident communities. They are large in number—96 whales in the case of the Puget Sound community—and are made up of two- and three-generation families that bond for life. Remaining in one general area the year around, these community whales feed on salmon and other fish that are in relatively abundant supply on North America's northwest coast. They have not been seen to eat seals or other larger forms of prey.

**T**he second grouping is composed of pods of whales, much smaller in number, that are best described as transients. Constantly on the move in pods of two to 10 individuals, they subsist mainly on penguins, seals, larger whales, and other warm-blooded animals. Stomach autopsies of these transients washed up on the shores of British Columbia have shown that they have also consumed such assorted fare as waterfowl, deer, and even the remains of a pig. But no fish.

In addition to opportunistic hunting, the transient whales also gather at certain specific locations at certain times of year to take advantage of large concentrations of their favored prey. A good example of

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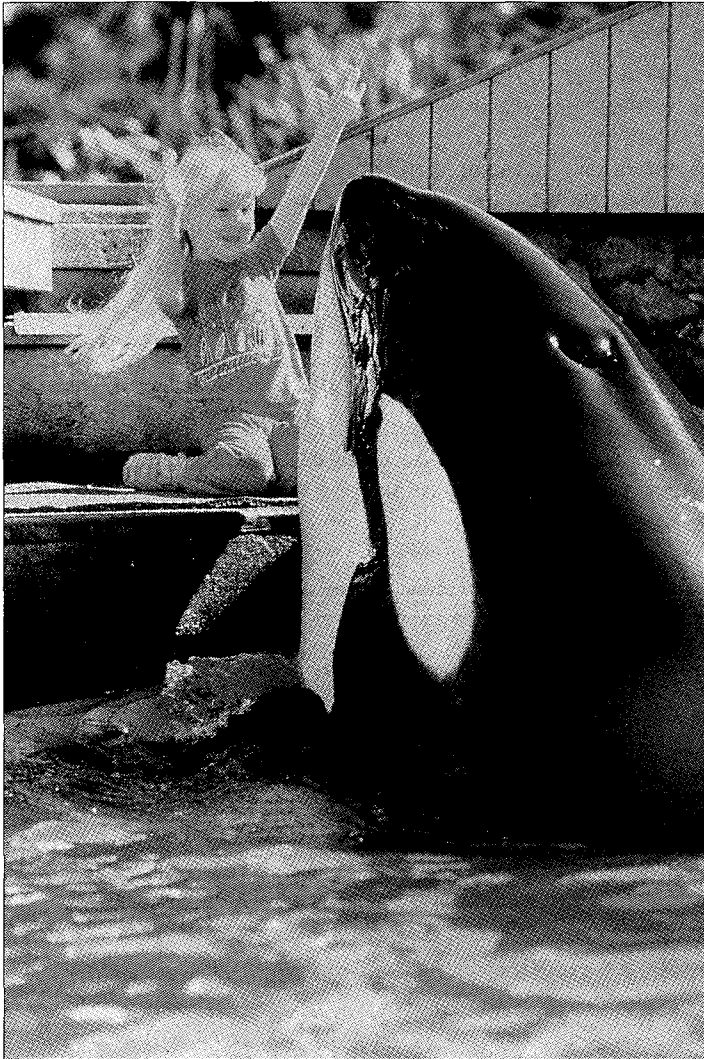
this phenomenon, recently the subject of a number of nature films, may be found at Punta Norte on the Valdés Peninsula of Patagonia. Here transient pods congregate every March and April, when the pups of the southern sea lion are born. Not content with what they may kill in the water, the whales crash through the surf, effectively stranding themselves, to snatch the pups on the beach. No other whales have the ability to save themselves from a stranding, but the killers are so strong and athletic that they have little trouble squirming back into the water. So important is this seasonal feast, in fact, that parent whales patiently teach the stranding technique to their young on empty practice beaches.

**A**fter almost 20 years of intensive study and observation, Kenneth Balcomb and his associates believe the two groups, the community residents and the transients, do not interbreed and have probably been genetically isolated for a very long time. More recently, Dr. A. Rus Hoelzel of the National Institutes of Health has managed to carry out DNA fingerprinting of the two groups. They are indeed genetically distinct, Hoelzel has found, so much so that "you might think they came from different oceans," as he likes to put it.

Although much more study is necessary, similarly separate groups or "races" appear to exist elsewhere. In 1979-80 the giant factory whaling ship *Sovietskaya Rossiya* purposely took 906 killer whales from Antarctic waters for scientific examination. As a result, Russian scientists now propose not different groups or races but two separate species. The first, provisionally named *Orcinus glacialis*, is noticeably smaller in all dimensions than the familiar *Orcinus orca*. It also has a slightly different cranial structure and a film of diatomaceous algae covering its skin that

gives it a yellowish cast. These "yellow whales," as the Russians like to call them, live in large communities of 150 to 200 individuals and subsist almost entirely on fish, which were found to make up 98.5 percent of their stomach contents. As their name suggests, the "yellows" stay close to the edge of the circumpolar pack ice the year around. In social organization and feeding habits, therefore, they would seem to correspond most closely to the resident communities of the Pacific Northwest. Nearby, but more often roaming in open water, the Russian scientists found much smaller groups easily identified as the standard *Orcinus orca*. Because these whales had no trace of yellowish coloring, the Russian scientists took to calling them "whites." Much like North America's northwest coast transients, the whites traveled in small pods averaging 10 to 15 individuals, were never seen to mix with the yellows, and subsisted mainly on other warm-blooded mammals, the remains of which constituted 89.7 percent of their stomach contents. The other warm-blooded mammals in this case were principally other whales, especially the minke, smallest of the so-called great whales. But as Soviet and other commercial whalers from the bad old days of Antarctic whaling will readily attest, the Antarctic killers will attack any of their kin regardless of size. This the whalers know not only from actual sightings but because they often found characteristic killer-whale teeth marks on the skins of all the various species they once took. Even on blue whales, in fact, largest of all living things.

Historically, the first killer whales captured for aquaria from 1965 to 1976 came from the two best-known resident communities in the United States and Canada, the Puget Sound-Straits of Georgia community of almost 100 individuals and the north Vancouver Island-Johnstone Strait community of 190. Since then, owing to mounting public reaction



*Sea World's Shamu has a close encounter with an adoring young fan.*

against further captures in both the United States and Canada, all killer whales taken for captivity have come from Iceland.

What might happen if a mature whale from one of the small transient pods—one of the offshore whales, as they are sometimes called—were suddenly introduced into an established aquarium community remains a matter of speculation. Meanwhile, the popularity of *Orcinus orca* as a public attraction has grown phenom-

enally. The obliging killers shoot up from the water like Polaris missiles, jump through hoops, allow trainers to ride their backs, strand themselves on tank aprons, and apparently enjoy audience participation, letting spectators pet them or even brush their teeth. The whales learn simple commands in a manner of weeks and attain what trainers like to call a performance repertoire in approximately six months. Accidents and fatalities in the training process have been remarkably few—one person dead by drowning and one serious injury as a result of a performance accident. Caution, however, remains the watchword. Some whales in captivity exhibit unfriendly if not downright hostile reactions to both humans and other whales and dolphins newly introduced into their environment. These reactions may take the form of bunting or ramming the new whale or habitually drenching a poolside attendant who has somehow

provoked their displeasure. A quiet approach, or time enough to get acquainted, seems the rule to follow.

Little wonder, therefore, that killer whales have become the star attraction of the aquarium world. (One recent aquarium survey has shown that attendance drops off 50 percent without the whales.) Vancouver, Vallejo, San Diego, San Antonio, Niagara Falls, Cleveland, Orlando, Miami—all these cities and more have their performing whales. They may

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also be seen in Japan, Argentina, Hong Kong, and France's Côte d'Azur. And Keiko, the star of the motion picture *Free Willy*, has been kept in a relatively small tank in Mexico City for 10 years. (As of this writing, however, a private foundation has raised \$4 million of an estimated \$9 million needed to buy Keiko, rehabilitate him for life in the wild in a large new tank in Oregon, and then try to find his family in Icelandic waters prior to releasing him.)

**W**ith the killer whales' increasing popularity has come mounting criticism of their retention in aquaria. As the largest mammals held in captivity and one of the fastest swimming of all sea creatures, they cannot of course be kept in enclosures that begin to approximate their natural habitat, as is now the practice with some zoo animals. Thus it happens that when the thrilled gasps and the cheers of a performance have died down, the whales may be seen endlessly circling their confinement pools. Eventually they may grow listless, some critics claim, and die of disheartening boredom. More accurately they may grow listless and die from viral diseases—pneumonia is the most common—against which they have no natural defense. The life span of *Orcinus orca* has been estimated at anywhere from 40 to 80 years, with females usually outliving males. But in captivity, their life expectancy appears to be much shorter. Most specimens taken for capture are young—very young, on average four-and-a-half years old according to the Department of Commerce's National Marine Fisheries Service, which is charged with keeping track of all marine mammal populations. Records from the same source show that the life span for the first 30 aquarium whales that have died of known diseases since the early 1970s averaged seven-and-a-half years following capture.

The record, however, is everywhere improving. There are now significant numbers of whales that have spent 12 or more years in aquaria, which means they have attained sexual maturity, and a few that have passed 20, which means that they have reached the hypothetical age for grandparenting. Then, too, as aquarium directors are quick to point out, the number of baby killer whales born in captivity appears to be rising. Sea World, which operates four aquaria in the United States, has successfully raised nine calves since 1985. Five more have been born in other aquaria and marine parks during the same period. And the Vancouver Aquarium, a model of its kind, is pointing the way with a firm policy against taking any more killer whales from the wild, relying instead on births and breeding loans from other institutions.

**I**n response to the criticism of Greenpeace and kindred organizations, aquarium directors maintain that performing killer whales have done more than any other single aquarium species to raise public consciousness of whales and the need for their protection. It is thus no coincidence, although something of a paradox, that the first places to show killer whales, notably Seattle and Vancouver, were also the first to see strong public reaction against their further capture. To put it another way, the performing whales—"the Teddy Bears and giant pandas of the marine world" as some call them—seem to have the power to evoke both instant enthusiasm and sympathy from their audiences the world over.

Science, too, has benefited from the retention of killer whales in aquaria and marine parks. The latter have offered what in effect are the first living laboratories for marine mammal research. In the predawn era of cetacean research, which is to say the preaquaria era, even such a

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basic datum as the gestation period for killer whales and other dolphins was unknown. (It is 17 months for *Orcinus orca* and 11 months for *Tursiops truncatus*, the bottlenose dolphin of performance fame.) Today, thanks to these living laboratories, studies in cetacean behavior, acoustics, genetics, hematology, general physiology, and veterinary science have all made great advances. There are very few cetacean specialists, in fact, who have not profited from the visiting fellowships and general study facilities offered by the better aquaria.

Killer whales in confinement, it would therefore appear, are here to stay. To be sure, there are now more opportunities to observe the whales in their natural habitat through whale-watching cruises and day trips. For this reason, it is the view of some conservationists and humane-society critics that the wild should be the only place to see whales. But if only a very small fraction of the millions of interested viewers who now flock to aquaria to see killer whales perform—more than 15 million annually visit the four Sea Worlds in the United States alone—were interested in taking boats to the best-known killer-whale concentration areas of the Seattle-Vancouver region, the result might well be disastrous. The very size of the flotilla necessary to take the public to these areas and the resulting commotion of marine traffic in such confined waters as the Johnstone and Georgia straits might very well cause the disappearance of the north

Vancouver Island and Puget Sound communities.

Still, it is hard not to sympathize with the position of each camp. For myself it has been a rewarding experience to renew acquaintance with *Orcinus orca* through the convenience of public showings. Even as I might wish these noble animals could forever roam free, I find myself thrilled by watching them display their grace and athleticism in the intimacy of an aquarium setting, to the point of joining the cheers of the crowd, I must confess, or sharing the sense of wonderment and joy of the youngest spectators.

Yet, these are not the occasions that remain indelibly in my mind. What persists, rather, is the memory of the night the whales came to Harberton almost 50 years ago. Every incident of what was in effect a private showing in that wild and lonely amphitheater remains remarkably clear. The tail lobbing, the explosive breaches, the rolling in the kelp, the steamer duck hockey game—all these are like so many freeze-frame images that can be brought instantly and brilliantly to mind. But the image I like best, the one I think of most often, is of the whales' departure. It is the image of the tall black sails of their dorsal fins passing in review, heading out the Beagle Channel to the great southern seas and Antarctica in the waning light of a summer evening.

