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## The history and behaviour of a solitary wild, but sociable, bottlenose dolphin (*Tursiops truncatus*) on the west coast of England and Wales

CHRISTINA LOCKYER†

Whale Research Unit (Institute of Oceanographic Sciences),  
c/o British Museum (Natural History), Cromwell Road,  
London SW7 5BD, England

### Introduction

On 5 April 1975, in snow and windy weather, a bottlenosed dolphin was reported to have followed the vessel *Sharan*, a converted lifeboat, around from the Milford Haven area to Skomer Island, in Pembrokeshire. The *Sharan* was trailing a small clinker-built wooden pram dinghy at the time, and this appeared to be the main attraction for the dolphin. The *Sharan* was the ferry for passengers crossing from Martins Haven, where the vessel had its mooring, to Skomer Island. Subsequently this dolphin followed the *Sharan* and her tender on numerous occasions, and having once followed the vessel into Martins Haven, it remained there most of the time playing with boats and mooring buoys (see also Saunders, 1975).

During mid-January 1976, the dolphin left the Pembrokeshire coast, after spending progressively more of its time within the Milford Haven and also making long excursions (of a few days or weeks) away from the familiar places. A week or so later, it was reported seen in Cornwall, settling in Mousehole after 2 days in St. Ives.

At the end of June the dolphin left Mousehole, and returned to St. Ives, where it was present until 9 September 1976, when it returned to Mousehole. After a short interval of time the dolphin was observed to be making several wide-ranging excursions, and by mid-September that year the area of patrol appeared to have shifted eastwards to the area between Falmouth and Lizard Point. Before the dolphin moved to St. Ives, visits had been made both to Pembrokeshire and to Mousehole, Cornwall.

Whilst in Pembrokeshire, invaluable information was received from divers who had come from the Isle of Man especially to look at the dolphin. The reason for their visit to Pembrokeshire had been to ascertain whether or not the dolphin there was in fact the same animal which had frequented the Isle of Man, but had left in March 1975 and remained missing for a couple of weeks before the appearance of this dolphin.

Two visits were made to Pembrokeshire in August and September 1975, and contacts were made with local people who were interested in keeping records of the dolphin's activities. In order to collect specific information, forms containing requests for date, place, sea and weather conditions, tide state, boating and human activity in the area, type of activity the dolphin was performing and any unusual incidents, were given to these people, together

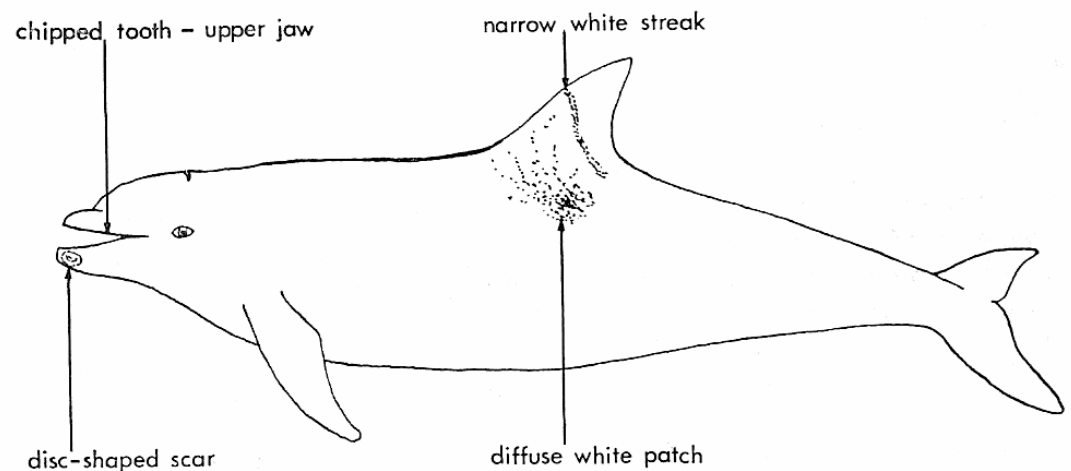
† Sea Mammal Research Unit, c/o British Antarctic Survey, Madingley Road, Cambridge CB3 0ET, England.

with, in the first instance, a sketch of the dolphin showing the most prominent distinguishing body marks in order to avoid confusion with any other dolphins in the area. When the dolphin disappeared and moved to Cornwall, its movements were well documented, and by contacting local people again, the records were continued regularly on a daily basis. Two visits were made to Mousehole, Cornwall, in May 1976, and the results of these and the previous visits, together with information gained from the forms and from local people, and from other interested persons, are given here and discussed.

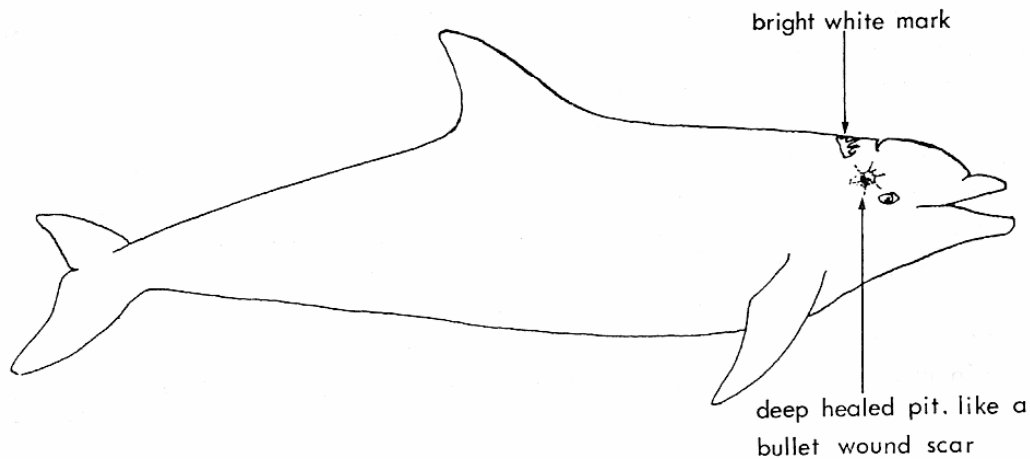
### Observations and researches

#### *External appearance of the dolphin*

The dolphin is a male *Tursiops truncatus*, about 360 cm in length. It was measured along the curve of the body with a tape from snout to the centre of the tail flukes during May 1976. The girth at that time was approximately



LEFT SIDE



RIGHT SIDE

FIG. 1. Sketch of the dolphin, left and right lateral views, indicating the most readily apparent permanent marks and scars, when seen at the surface.

165 cm in the region immediately posterior to the dorsal fin. The dolphin was never weighed, but by analogy with other specimens of the same species of similar size the weight might be about 400 kg (Tomilin, 1967). Coloration was dark grey over the dorsal surface with numerous whitish scratches, and white on the ventral surface. A pronounced 'bib and braces' type of pigmentation was seen in the chest area. The most prominent and permanent scars and markings peculiar to this particular dolphin were observed and listed in August and September 1975, and checked in May 1976. These scars and distinguishing marks were as follows:

- (1) a deep pit (reported to be a healed bullet wound) behind the right eye;
- (2) a diffuse light patch below the dorsal fin on the left flank;
- (3) a disc-shaped scar on the left side of the tip of the lower jaw;
- (4) a small bright white mark just to the right of and behind the blowhole;
- (5) a chipped tooth in the middle of the tooth row in the left upper jaw.

A sketch of the dolphin illustrating the positions of these marks is shown in fig. 1.

#### *History of the dolphin's scars*

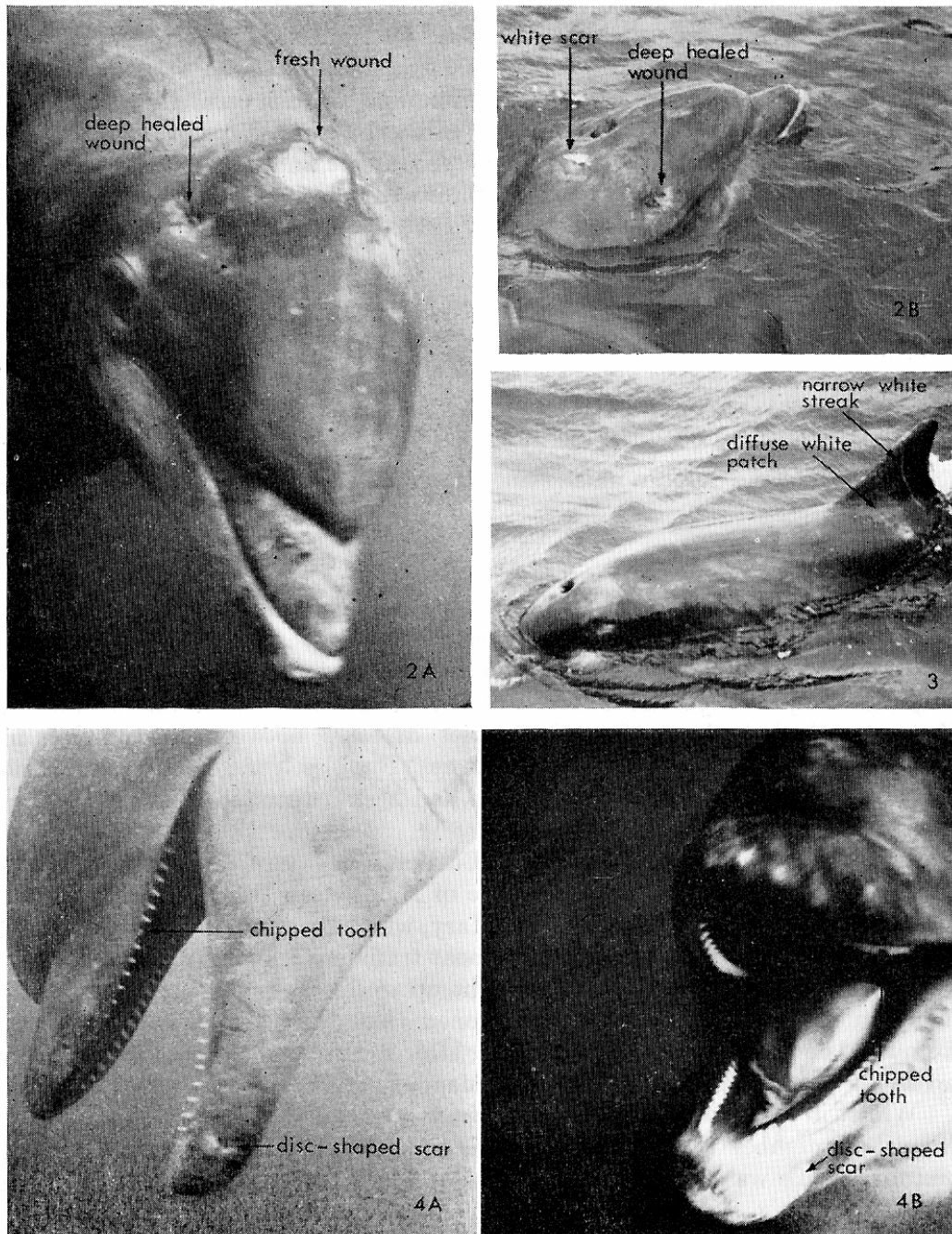
After becoming acquainted with the appearance of the dolphin during 1975, much time was spent pursuing information about similar recent dolphin occurrences in Britain. Newspaper items and photographs of 'Donald', the wild male dolphin reported to have frequented the Isle of Man, were examined. It appeared that there were similarities in scars between the dolphin in Pembrokeshire, by now known locally as 'Bubbles' or 'Beaky', and the animal in the Isle of Man. People who had been associated with the dolphin there were contacted.

Mrs. Maura Mitchell, a resident of Castletown, Isle of Man, reported that 'Donald' had first appeared in the Isle of Man before Easter in March 1972. The dolphin's chief haunt was Port St. Mary, where it seemed curious about and fascinated by the many divers and the boat traffic present there. The dolphin became quite bold and would come right up to divers and boats, resulting in many incidents. Mrs. Mitchell mentioned that 'Donald' had disappeared from the Isle of Man in mid-March 1975, after several months of harbour works involving use of explosives in Port St. Mary.

Whilst in the Isle of Man, the dolphin was shot and wounded, sometime in August–September 1972. At about this time it became more wary of boats, and for a while was very inactive. This wound is believed to correspond with the scar 1, see fig. 2 (A) and (B), although Mrs. Mitchell has reported that a few local people have recently claimed that this scar was an open, festering wound when the dolphin first appeared in the Isle of Man.

There was a raw wound on the left-hand side below the dorsal fin when the dolphin first arrived. This later healed to a light coloured patch, see scar 2 shown in fig. 3.

Mrs. Mitchell mentioned that there was a very bad sore on one side of the snout at one stage. The scar is apparent in the photographs of 'Donald', taken at the time, as a disc-shaped mark, see fig. 4 (A). This corresponds to a similar mark in photographs of the Pembrokeshire dolphin, see scar 3 shown in fig. 4 (B).



FIGS. 2-4. (2A) Deep healed wound in the side of the head, and a fresh wound near the blowhole, photographed by Dr. H. Dobbs in the Isle of Man. (2B) Deep healed wound, and healed white scar near the blowhole, photographed in Pembrokeshire. (3) Scarring on the left side of the body in the dorsal fin region, photographed in Pembrokeshire. (4A) Disc-shaped scar on the tip of the lower jaw, and a chipped tooth in the centre of the left upper jaw, photographed in the Isle of Man, by Dr. H. Dobbs. (4B) Similar scar and mark described in (4A), but photographed in Pembrokeshire.

The dolphin received an injury on the head in July 1974 when playing with a small cabin cruiser, damaging the leg of the outboard motor and bending it about  $2^\circ$  with its head. The wound took about 5 weeks to heal, and appeared as a small white scar near the blowhole when healed, corresponding to scar 4. In fig. 2 (B) the scar is shown as it is now, and in 2 (A) the original wound surrounded by swollen tissue as it appeared shortly after the incident.

In fig. 4 (A) and (B) are shown photographs taken in the Isle of Man and in Pembrokeshire, both showing the open mouth and the presence of a chipped tooth, corresponding to mark 5.

The similarities in appearance of the dolphin from the Isle of Man and from Pembrokeshire, and the timing of the dolphin's disappearance from the former site and the new appearance at the latter by only a few weeks, all indicate that the dolphin was the same animal.

Mrs. Mitchell and Dr. Horace Dobbs, who supplied the photographs showing 'Donald' in the Isle of Man, dived with the dolphin in Pembrokeshire in September 1975, and confirmed to their own satisfaction that this was indeed 'Donald'.

#### *Observations on the dolphin's behaviour*

Observations were made in Pembrokeshire during two visits, 11–13 August and 16–20 September 1975, and in Cornwall 2–6 and 23–28 May 1976, and 22–26 November 1976. The places frequented by the dolphin in Pembrokeshire were Martins Haven and Dale, off Milford Haven. Other places were occasionally visited, and the area is charted in fig. 5. Often the dolphin was seen both in Martins Haven and Dale, and/or other places, on the same day, within a few hours of each sighting.

These bays frequented by the dolphin were about 10 m deep, and contained many moored boats, mooring lines, and buoys. There was much boat traffic, and human activity in boating and in swimming, diving and fishing. The

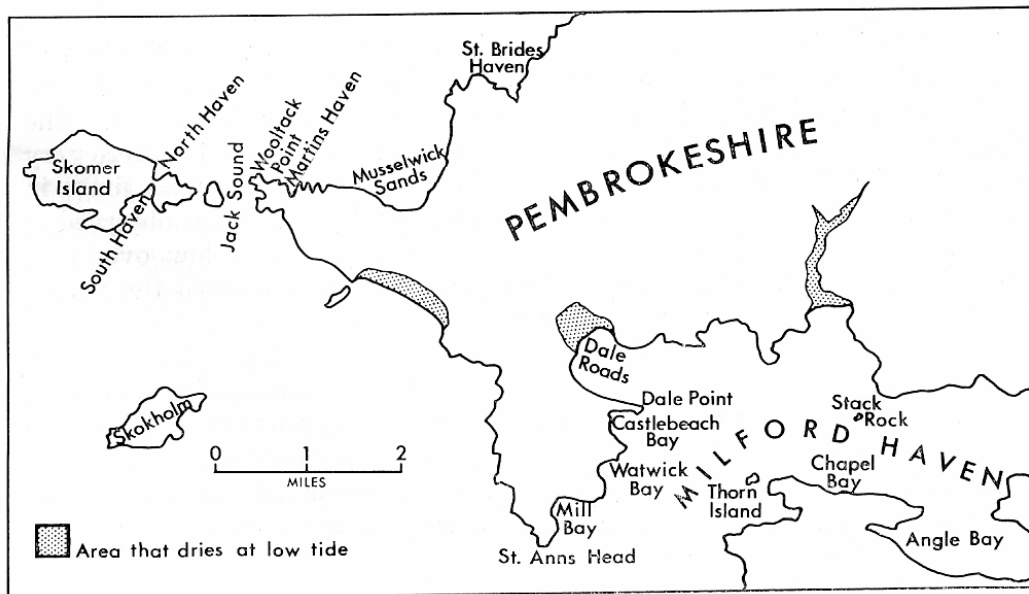


FIG. 5. A map of the area around Pembrokeshire, frequented by the dolphin.

majority of the dolphin's play activities were centred in Martins Haven around a small varnished wooden clinker-built pram dinghy, tender to the *Sharan*.

This dinghy was usually moored alongside some large bright pink mooring buoys. The dolphin appeared possessive over this dinghy, and would spend hours swimming and playing around it (see fig. 6), lifting it from the water and manoeuvring it in circles either from below or by tugging on the mooring lines. This behaviour was, however, not specific to the dinghy but was often seen with other moored small craft and also larger motor vessels up to 10 m or so in length when the *Sharan's* tender was absent or when the dolphin was in a different area.

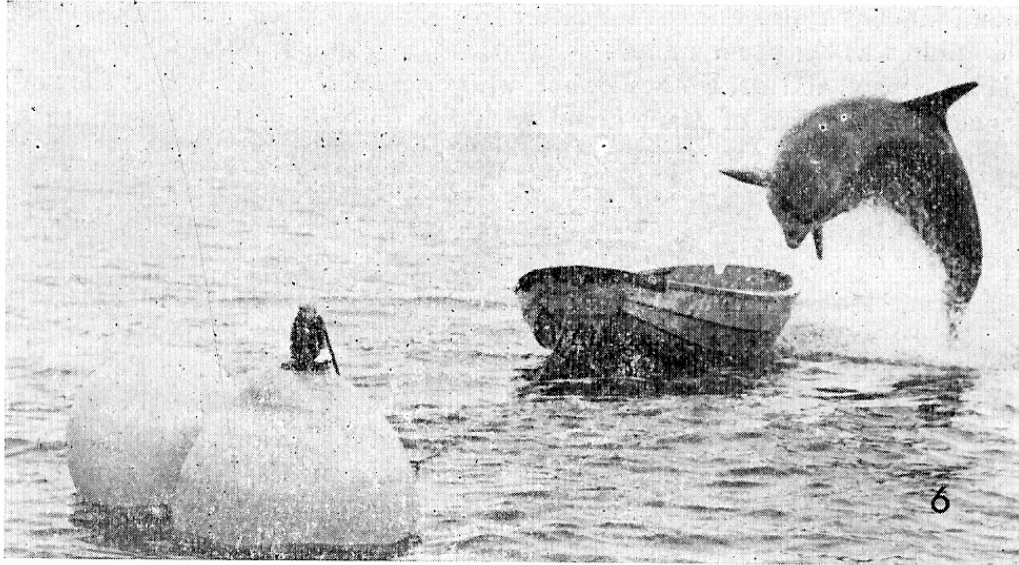


FIG. 6. The dolphin playing around the *Sharan's* tender, made fast to its usual mooring in Martins Haven, Pembrokeshire.

The dolphin frequently rubbed its ventral surface on the hull bottom of the *Sharan's* tender or other small craft, causing sexual excitement, leading to erection, and occasionally ejaculation, either above or below the surface. The dolphin often became excited when outboard or other engine noises were very close by and it would occasionally leap clear of the water several times in succession. This friskiness in relation to certain engine noises was observed in Mousehole, Cornwall, in May 1976, when a helicopter flew low overhead, although not sufficiently low to create a downdraft and disturb the water, causing the dolphin to leap several times.

Moving boats were often followed, sometimes for a few miles, and the dolphin could easily maintain a speed of up to 20 knots ahead of a speedboat. This was observed on several occasions, and once during a return to harbour in Mousehole over about a mile distance the dolphin swam alongside, but not close enough to be in the bow-wave of a large inflatable speeding at between 15 and 20 knots. The dolphin left the boat at the narrow harbour entrance, possibly because of the low water there.

Frequently small dinghies, canoes and yachts with people in them were manoeuvred by the dolphin, to the extent that he became a nuisance. Courses

were altered, and interference by way of pushing boats around in yacht races, splashing of the occupants of craft whilst the dolphin attempted to put its head on the gunwale to peer in, capsizing (and biting of paddles) of canoes, created much disturbance. The more the noise (shouting and shrieking) by the boat's occupants, the greater the dolphin's excitement.

The fascination for mooring buoys and moored boats seems to be related in part to the dolphin's curiosity about chains. Rattled chains underwater could invariably be used as a means of gaining the dolphin's attention. On one occasion in Mount's Bay, Cornwall, during May 1976, the dolphin was summoned over half-mile distance to close by a small inflatable dinghy by the noise of heavy chains rattled from the side of the boat.

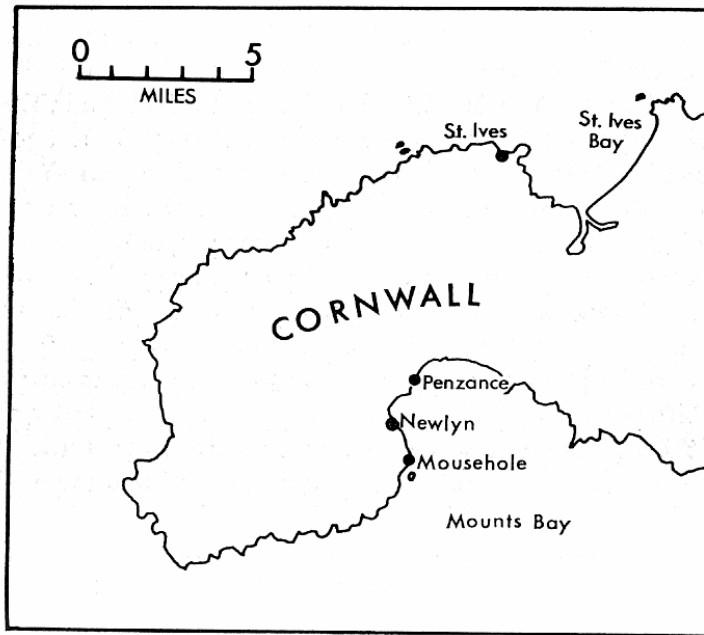


FIG. 7. A map of an area around Cornwall, frequented by the dolphin.

The dolphin's favourite haunt in Mount's Bay (see fig. 7) was around one of the buoys situated off the Penlee lifeboat station near Mousehole. The depth here varied between 10 and 12 m. The sea-bed was sandy and similar to that in Martins Haven and Dale. Chains clanked off the lifeboat slipway could almost be guaranteed to bring the dolphin close to the slipway if he was in the area, both during the day and night.

In our experience the dolphin always approached divers and swimmers in the area near him with a friendly and playful attitude. It gave the impression that it preferred to make the friendly overtures, and did not enjoy being chased or harassed. Strangers were frequently inspected from a distance before close contact was made, although divers and people in boats frequenting the area and with whom it was presumably familiar were usually readily approached as if there was some factor of recognition. The factor or factors of recognition were never clearly apparent, but voice and tone of voice seemed important, and also perhaps attitude and appearance. Once contact was made with swimmers,



the dolphin would allow itself to be stroked, petted, and have its head, mouth and jaw rubbed. People were allowed considerable liberties with the dolphin, if they were gentle, and at the time it was measured underwater with a tape it appeared very docile and cooperative, although completely unrestrained. Measurements of the head were also made at that time with a tape, whilst the dolphin remained horizontal and almost motionless with its snout only about 0.5 m distant from my face mask. The dolphin gently moved its head from one side to another to watch me, occasionally closing an eye as if in a stupor. It was possible that the feel of the tape over its body gave a pleasurable sensation, but also innate curiosity probably compelled the dolphin to stay around. The dolphin would sometimes permit people to be towed, often for many metres, by holding onto the dorsal fin whilst it swam along. The dolphin did not seem to appreciate playing with a ball, and would simply nose it in curiosity. However, it frequently took trailing lines in its mouth and bit oars or poles placed in the water from boats.

Attempts in May 1976 in Mount's Bay to feed the dolphin freshly caught fish (mackerel and pollack) were unsuccessful; the dolphin did not even show more than a passing curiosity when the fish were agitated in the water.

Items which did arouse more curiosity were certain underwater cine camera motors. Filming was often very difficult, because the dolphin would try to keep its snout on or near the camera. The lower jaw seemed to be used as some kind of sensor. Pulsed sounds and vibrations seemed to fascinate the dolphin, and one pastime was to exhale underwater into turning propellers of outboard and larger inboard engines, causing them to cavitate and the engine to race, so altering the noise pitch.

The use of the snout and mouth as sensors was often apparent. New objects were nosed although not always touched, and objects including swimmers' legs and arms were frequently taken into the mouth and gently squeezed. Divers' flippers were often nipped, and colour did not seem to influence the dolphin's behaviour. Both neoprene-suited and bare-skinned swimmers were approached.

Boats of all colours of topsides and hull bottoms were played with, indicating that possibly colour did not influence the dolphin's choice of plaything. However, the hull shape and size of boat could be important.

One factor in maintaining the dolphin's interest was the amount of activity in an area. If much activity was occurring, then the dolphin would get easily distracted, and if the activity was near to its favoured boat or buoy, it appeared to become territorial in behaviour, and returned to this spot at intervals and circled it a few times before leaving again. If activity of any kind near the dolphin's favourite haunt persisted to the extent that the dolphin could not get near, it was sometimes observed to become aggressive towards the swimmers or boats involved. This could entail rushing swimmers, pushing them away with the snout, tossing boats by surfacing beneath them and leaping and splashing with the tail nearby. At no time, however, did the dolphin actually harm anyone by biting or hitting.

The dolphin's pattern of activity was never fully monitored throughout a whole day. At times when divers and boats have held his attention in an area from about 10.00 to 17.00 hours and the dolphin has been observed closely all that time, feeding has not taken place. In fact, fish swimming by have been ignored. The dolphin has frequently been seen in the same area during the

night as during the day, or if he has moved, it has only been to another inshore place. On the nights of 4 and 26 May the dolphin was watched past midnight until about 03.00 hours, from the Penlee lifeboat station. This station offered observers an excellent view over the area where the dolphin was swimming, without being observed. At this time of night there was no activity in the vicinity to disturb the dolphin. By the 26 May a simple microphone/amplifier system had been attached to the lifeboat mooring buoy, connected by underwater cable to a sound-recording system in the lifeboat station. This amplified the noises of the dolphin blowing in an area approximately 25 m radius around the buoy, and sounds of splashing by fish and the dolphin. An underwater sound-recording set was used at the time, with a hydrophone dangled in the water off the end of the slipway. Both these sound amplification systems greatly assisted observations, and permitted dive-times and movements towards or away from the buoy and sounds from the dolphin to be recorded. A weak diffuse light could be directed towards the buoy, but this would be needed only when there was no moonlight.

The dolphin was observed to be swimming mostly within an area of 10 m radius around the buoy, blowing irregularly and sometimes diving for a few minutes. On 4 May the dolphin would occasionally rush to the surface at the same time as fish leaped clear of the water only 3 m ahead of him. The indications were that it was chasing the fish, and possibly feeding. The type of fish was not known, but because the fish were not iridescent, mackerel could probably be excluded.

The day following this incident, divers were swimming with the dolphin near the buoy at about mid-day, approximately 12 hours after the fish-chasing episode. The dolphin was defaecating frequently, the faeces being greenish and diffusing quickly in the water. The assumption was that the dolphin had been feeding within the last 14 hours or less, as passage of food into the large intestine would probably take about this time (Tomilin, 1967). The dolphin could therefore have been feeding near the buoy during the previous night. The implications were that the dolphin probably finds adequate food close inshore, and does not need to go out to sea to feed.

During the daytime when there was little activity going on to interest the dolphin, it would often rest and circle a favourite buoy very slowly, blowing regularly, often surfacing in the same positions, about three to four times/min for up to  $\frac{1}{2}$  hour or more. However, during periods of activity, the dolphin would blow irregularly, respiratory pauses being sometimes as little as 5–7 s. Dives often lasted 3 or 4 min, and on occasions when the dolphin was absorbed by some underwater activity, such as divers working on the sea-bed, it would remain submerged for up to 5 min. Normally the dolphin would remain close to the surface, probably because there was more to interest it there.

Once totally submerged, the dolphin was completely free in its movements, and when it was attracted by events underwater it would not infrequently remain almost immobile, assuming a variety of postures: vertical with head up or down; horizontal with ventral or dorsal side up; or various intermediate postures. The upward movement of the tail flukes seemed to provide all propulsion, and the flukes were probably also angled in some way, although the manner was never very clear, in order to stop the dolphin dead, even when swimming fast through the water. Flippers did not appear to be moved very

much, and were generally hung downwards, each directed slightly outwards.

Squeaks, creakings, purrings and mewling sounds were often heard when swimming underwater with the dolphin. Many of these noises and also clicking sounds of very low frequency were recorded with the aid of a hydrophone. Most of these noises have still to be analysed.

#### **Information and observations collated from interviews, news items and form records**

The dolphin first appeared in the Isle of Man during March 1972, see fig. 8. Its appearance in Port St. Mary, which became its usual haunt, was first noticed by a local man who was laying mooring lines at the time. The dolphin frequented Derbyhaven, Douglas, and other areas in the south of the island, playing with boats and divers.

In the spring of 1973 the dolphin became stranded alongside a twin bilge keeled yacht in Derbyhaven by the outgoing tide. While stranded, the dolphin was kept cool by buckets of water tipped over it. The bucket of a mechanized excavator was used to refloat the dolphin. Some blistering of the skin occurred but no other apparent harm was suffered.

While in the Isle of Man the dolphin was reported to have been seen with a companion, a smaller bottlenosed dolphin, for a few weeks, during which time it avoided contact with people and boats. A variety of reports has since been received on the dolphin's play with seals in Pembrokeshire and Cornwall, but none of these incidents seems to have developed beyond usual curiosity. 'Donald', now known as 'Beaky', was once reported in St. Ives to be playing with a guillemot for about  $\frac{1}{2}$  hour, by repeatedly surfacing beneath the bird and lifting it into the air. The dolphin dived down as the bird dived, chased it, and then tossed it upwards. At the end of play, however, it left the bird apparently unharmed.

There were frequent reports of the dolphin taking fish from people in boats. Mrs. Mitchell claimed that the dolphin had accepted fish from her husband's hand held over the side of a boat. Fishermen in Mousehole at one time gave the dolphin herring and mackerel. These were placed on the lifeboat's slipway buoy and the dolphin used to take the fish. However, a local diver, Mr. Carswell, reported soon afterwards that the sea-bed around the buoy was littered with dead fish, so that the dolphin was clearly playing with most, if not all, of the fish rather than eating them. This report, and our finding that the dolphin would not take fish offered underwater or at the surface, throws doubt on these reports of hand-feeding.

Many fishermen, and the crews of ferryboats and pilot boats, all of whom made regular sea trips, often reported that the dolphin would follow the vessel out to sea and accompany it for several miles. Several crab and lobster fishermen reported the dolphin following the pots down after re-baiting, and swimming ahead of the boat to the next pot-buoy as if in anticipation. This behaviour could be linked with the dolphin's general fascination for buoys and mooring lines.

In December 1975 the dolphin followed a small herring rowboat in the Milford Haven, and when the fisherman was shooting his nets, the dolphin sped three times between the top and head ropes, tearing holes in the mesh while doing so. Throughout this incident, the dolphin accompanied the boat for about 2 hours.

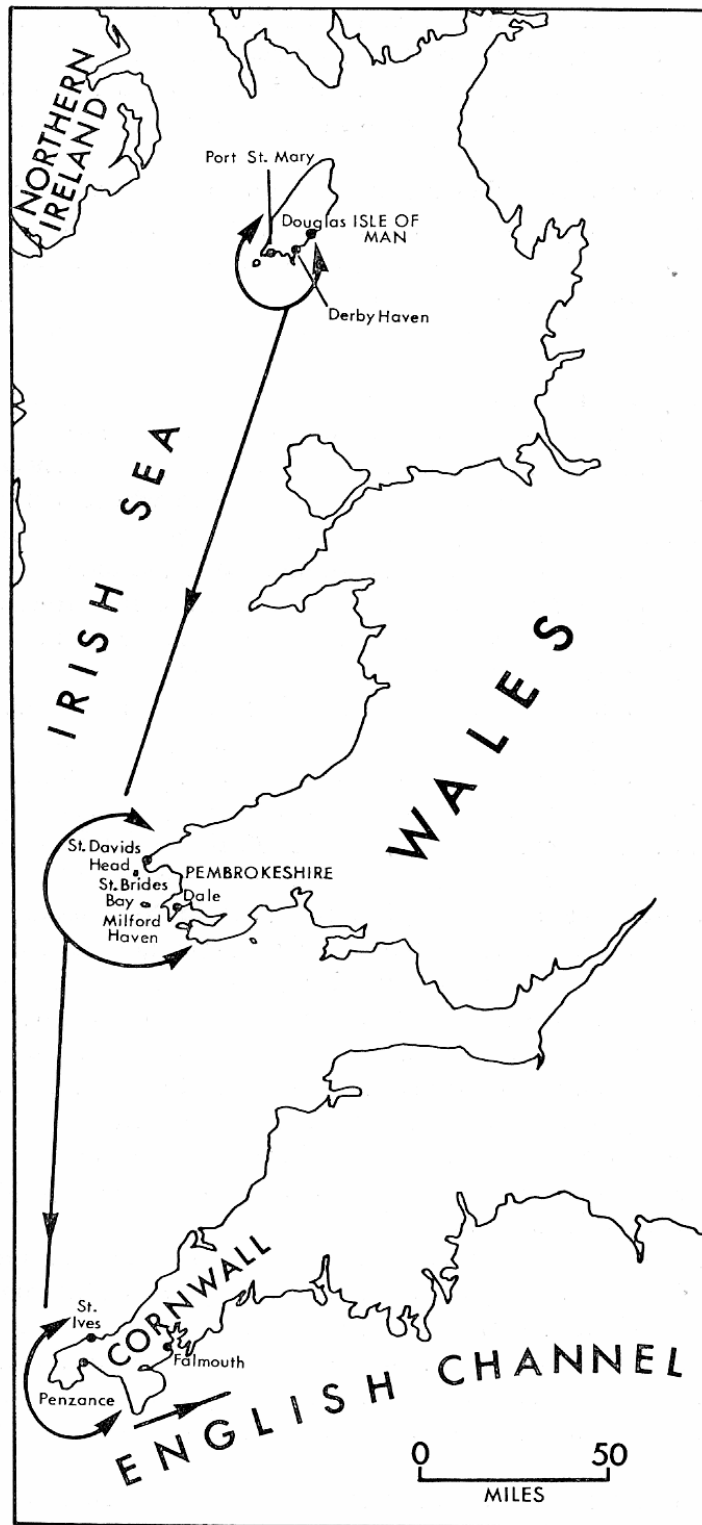


FIG. 8. A map showing the areas known to have been visited by the dolphin, with arrows indicating both the general local and overall direction of movements.

A sailing dinghy was once followed for 2 hours while on a round trip from Dale by St. Anns Head, Thorn Island and Stack Rock to Dale. The dolphin stayed close to and occasionally nudged the dinghy.

The same fisherman who reported the incident with the herring nets reported the dolphin interfering in mooring buoy work in Dale. Each time a mooring buoy chain was hauled up, the dolphin would surface between the chain and side of the boat. Despite attempts to discourage the animal by pushing it away with a boathook, the dolphin persisted in interfering with the operation. This behaviour of course might be expected, with the knowledge of the dolphin's fascination for chains.

### Discussion

The voluntary seeking of human company by this wild and solitary dolphin is not unique. Similar records are available for other bottlenose dolphins, both in Britain and in other countries. The natural sociability of bottlenose dolphins is well known, and it is this characteristic which has undoubtedly contributed to their being successfully kept in captivity in some aquaria. There are two important aspects of the dolphin's story which can be discussed: first, a comparison with similar occurrences of wild dolphins freely associating with man, and secondly, a comparison of the behaviour pattern of the wild dolphin with that of captive dolphins.

One of the most famous accounts concerning an association between a wild cetacean and Man was that of a Risso's dolphin (*Grampus griseus*) called 'Pelorus Jack' who frequented a particular stretch of sea off New Zealand. The antics of 'Pelorus Jack' around boats, both large and small, in the area became a legend. For over 20 years from 1888 this animal met and accompanied vessels crossing Cook Strait (Cowan, 1911; Alpers, 1963).

Another cetacean associating with Man, lived in New Zealand waters, at Opononi. This animal was a female bottlenose dolphin, about 2.5 m in length, and remained in a very restricted area, by choice, for several years. It was called 'Opo' (Alpers, 1963). Like 'Beaky', the wild dolphin discussed here, 'Opo' enjoyed chasing boats with outboard engines, and certain types of inboard engines. Also, 'Opo' received an injury to the head during play with the rotating propeller of an outboard engine. It is reported that 'Opo' was very friendly and gentle with people, both in boats and in the water, and would permit fondling. Unlike 'Beaky', however, 'Opo' apparently much enjoyed a game of ball which it would toss readily. 'Opo' permitted children to ride astride its back, and would swim between their legs and lift them. Apparently, 'Opo' was always able to recognize a particular young girl with whom she reportedly had a special relationship.

'Opo', like 'Beaky', enjoyed an audience and laughter, and would leap out of the water when excited, and would decisively swim away from harassing crowds, often tail slapping. No-one ever succeeded in getting 'Opo' to accept fish.

Caldwell & Caldwell (1972) wrote of two other bottlenose dolphins in Florida, which would permit people to touch and play with them. One of these animals used to tip up outboard propellers from the water with the snout or head.

A large bottlenose dolphin called 'Charlie' (although the sex was then unknown), frequented an area of Scottish coast around Elie, Fife, for about 5-6 years prior to 1966. Apparently, it was readily identified by a nick in the

trailing edge of the dorsal fin. At the end of 1965, 'Charlie' moved to a new area in Northumberland (Gilchrist, 1967), only about 60 miles distant. Munday (1967) later reported 'Charlie's' appearance at Eyemouth, Northumberland, in 1967, and mentioned the dolphin's friendliness with divers. Also, at this time, it was noted that 'Charlie' was in fact a female, and about 3.1 m in length. The damaged dorsal fin was the identifying mark. Photographs showed 'Charlie' to be immensely broad and heavily built. Both authors mentioned 'Charlie's' attraction for boats, particularly with engines, and its rubbing against them. Apparently 'Charlie', like 'Beaky', could be attracted by engine noise over a considerable distance,  $\frac{1}{4}$  mile in one instance, although it is always possible that sight as well as sound association was equally important. On one occasion, Munday (1967) reported actually seeing 'Charlie' catch fish (pollack or cod) underwater, by opening the mouth and snapping them. Munday made clear that 'Charlie' did not accept dead fish offered to it.

One consistent feature of all these occurrences of sociable wild dolphins, is that the 'home range' or 'territory' is limited, frequently to only one or a few adjacent bays and harbours. Caldwell (1955) wrote of a bottlenose dolphin which had a readily identifiable healed injury on the dorsal fin, a natural 'tag', which frequented Cedar Key, Florida. This was not a sociable animal, but nevertheless, over a period of nearly 2 years, was sighted only in a very limited area. Caldwell & Caldwell (1972) mentioned the limited 'home ranges' of an albino bottlenose dolphin, 'Carolina Snowball', which moved between South Carolina and Georgia, staying in each area for a few weeks at a time. This behaviour is very similar to that of the dolphin discussed here, but one difference with all the examples mentioned here is that although 'Beaky' remained in very limited areas for months and years at a time, it has nevertheless, since 1975, covered a distance of well over 300 miles to Cornwall, south of the Isle of Man, and an entirely new area, see fig. 8. The southward movement has so far not been reversed, and there has never been any indication of a seasonal migration. 'Beaky' appeared quite at ease in both calm and rough weather, and leaped and played regardless of the state of the sea. Tides do not appear to have greatly influenced movements, although shallow harbours have been negotiated at high tide.

In comparing the behaviour of the wild dolphin with that of captive dolphins of the same species, or indeed of other species, there are many similarities. Of particular interest is the selection of and defense of a 'territory'. Caldwell & Caldwell (1972) have noted that even in large tanks where several dolphins were present, each would have its own micro-territory. In small holding tanks individual animals have come to regard them as their own, and become aggressive to intruders. The wild dolphin discussed here invariably showed a tendency to territorial behaviour, selecting a buoy or a boat. This would be defended if intruders pressed too closely, by rushing, butting and tail splashing. All these tactics have been seen frequently in captive dolphins when they were defensive. This aggressive action has also been shown (Caldwell & Caldwell, 1972) when strange, perhaps even dangerous, objects (including unfamiliar people) have entered captive dolphin's tanks. After initially inspecting the object cautiously from afar like the wild dolphin, the captive dolphin would then attempt to push it even further away and even to toss it up and out of the water. This could perhaps partly explain the wild

dolphin's attempts to push people, birds and small boats up and out of the water, in that it knew that they were strange (not of aquatic origin) and/or were intruding in its territory.

In captivity, recognition of former companions has been apparent even after a separation of several months. Captive dolphins also seem to have been able to recognize individual people. For example, Caldwell & Caldwell (1972) told of a trainer and dolphin relationship that was exclusive, in that when the dolphin was transferred to another aquarium with a new trainer, the animal would not perform at all despite the former training. When the previous trainer was called in, the dolphin resumed the usual routine of tricks and would only perform them in his presence. The dolphin was ultimately returned to the old aquarium with the familiar trainer. Therefore, it is quite possible that the wild dolphin recognizes former companions, even if they are human.

Captive dolphins have frequently been seen to play on their own. The wild dolphin frequently amused itself by playing with moored boats, buoys, and mooring lines. 'Beaky' even played with fish put on the Penlee lifeboat station's mooring buoy, and sea birds on the sea surface. All of this activity is comparable with captive dolphins' behaviour, discussed by Caldwell & Caldwell (1972).

The indiscriminate sexual activity by the wild dolphin was certainly quite usual in comparison with captive dolphins, but Caldwell & Caldwell (1972) stated that such behaviour was more usual in juveniles. The wild dolphin, however, was of mature size, but this behavioural phase could have continued because of its solitary condition, which perhaps originated during the juvenile period. Brown & Norris (1956) made the interesting observation that when divers stroked and petted captive male bottlenose dolphins in their tank, sexual excitement was frequently displayed with erection. In fact, at least once a diver was pinned briefly against the tank wall by an excited male. The wild dolphin was observed quite often to have an erection whilst playing with swimmers and divers.

The apparent use by the wild dolphin of the lower jaw as some kind of sensor is comparable to the behaviour of a captive dolphin, described by Caldwell & Caldwell (1972). These authors mentioned that this dolphin, which was blindfolded, placed its lower jaw on the underwater transducer when sounds were played to it. This is very reminiscent of the wild dolphin's reaction to cine cameras.

Caldwell & Caldwell (1972) told how aggression in captive dolphins was occasionally directed at a non-offending or innocent individual (man or dolphin), when some quite remote incident had upset the animal. This particular behaviour perhaps merits more investigation, particularly in the light of recent reports (during June 1976) of the wild dolphin's inexplicable and sudden acts of aggressiveness towards swimmers compared with its hitherto placidness—for example, biting one person enough for bleeding to occur; knocking unconscious an innocent swimmer who had not been anywhere near the dolphin until the latter swam over to him and hit him with its tail. These incidents all occurred in the height of the holiday season at St. Ives, Cornwall, when 'Beaky' was probably crowded by more people and moving boats than it had ever experienced before. Anything could have triggered these aggressive acts, including extreme excitement.

Regarding blowing frequencies, and resting and playing periods, what has been observed for the wild dolphin appears to be in common with captive dolphins. The wild dolphin has never been observed 'sleeping', but according to Caldwell & Caldwell (1972) captive adults only nap briefly, and in any case the wild dolphin has never been watched through 24 hours.

The noises made by the dolphin appear superficially to be similar to usual bottlenose dolphin sounds, but the recordings have not yet been fully analysed, and are not within the scope of this paper.

In connection with these sound studies, work is hoped to continue, because observations on sound behaviour of wild but sociable dolphins are very rare. Records of its movements and behaviour are also continuing, in the hopes that the habits of a wild sociable dolphin can be fully monitored for perhaps most, if not all the rest of its life.

### Summary

The description of the appearance, behaviour and movements of a wild bottlenose dolphin are given. The dolphin, which was a male, was measured as approximately 360 cm in length during May 1976. The dolphin was estimated to be a mature adult. Certain distinguishing permanent body scars on the head and dorsal fin areas, and a damaged tooth, were a convenient means of identification of the dolphin.

The movements of the dolphin were traced to April 1972. Between then and March 1975 it was resident in the coastal areas around the Isle of Man. Between April 1975 and January 1976 the dolphin had moved to and remained resident in the region around Milford Haven in Pembrokeshire. From January 1976 until December 1976, the dolphin moved south again, and patrolled an area stretching from St. Ives on the north coast of Cornwall to Falmouth on the south coast of Cornwall, although during most of this time favoured localities were St. Ives and Mousehole, where it remained for long periods. All areas which were 'adopted' for any length of time showed similarities, in that boating traffic, fishing activity, mooring buoys, and usually diving and swimming activities were present. The bays were usually about 10 m deep or less, often with rocky shore and sandy bottom.

Behaviour observed included playing with, chasing and manoeuvring boats, playing with divers, swimmers, and floating objects, interfering with boat propellers and outboard engines, indiscriminate sexual activity with boats, and a general sociable attitude to people. The dolphin was a solitary animal, and apart from one brief incident in the Isle of Man, was never seen with other dolphins.

The general history and behaviour of the dolphin in comparison with records of other similar incidences of sociable yet wild Cetacea, and also captive dolphins lead one to believe that this animal is quite healthy and normal, apart from the unusual aspect of his sociability with man.

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