

Loch Ness Investigation

Among the handful of “classic” Nessie photographs, was “The Surgeon’s Photograph” of 1934: the long necked embodiment of a plesiosaur.

By 1960, the persistence of sighting reports interested two scientists at the Natural History Museum in London. Dr. Tucker inspired an Oxford and Cambridge expedition in the spring of 1960 led by Peter Baker, which quickly explained the sea-serpent sightings. Dr. Burton, the other scientist, lent a cine camera to engineer Tim Dinsdale. Within six days he filmed an indistinct object ploughing through the water. Burton believed it was a boat but Dinsdale, the lone prospector, devoted his life to vindicating the eyewitnesses.



Is this the famous “Surgeon’s Photo”? See Below !

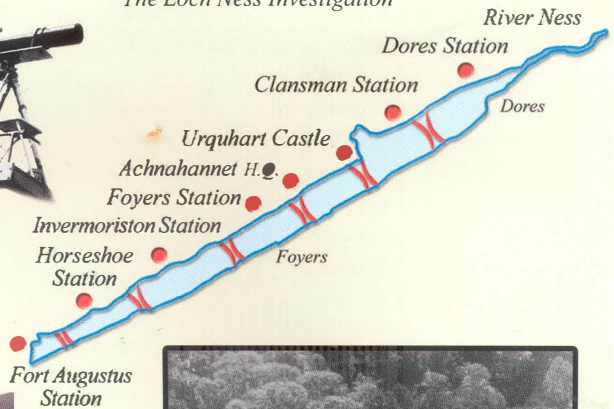
One person who thought the matter should be resolved was the naturalist Peter Scott, son of the famous explorer. He met another Antarctic “hand”, the MP David James, whom he persuaded to read Constance Whyte’s book. The result was the “Loch



David James



The Loch Ness Investigation



The RaynorFilm

Hoax

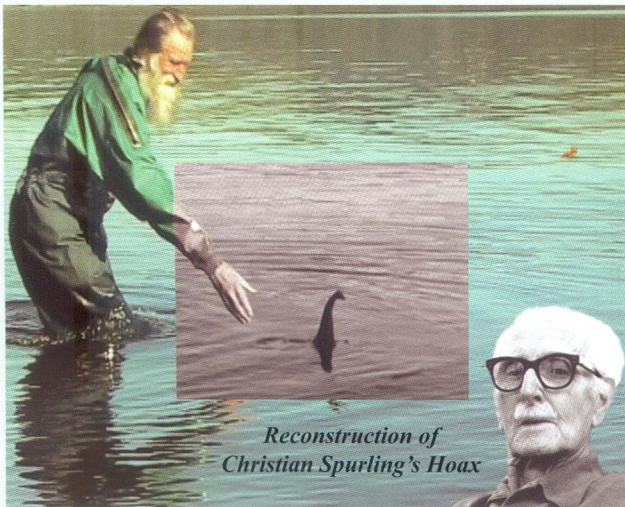
Ness Phenomenon Investigation Bureau” which formed in 1962, mainly to collect and collate sighting reports but under the energetic leadership of David James, a decade of surface surveillance began.

On the high ground at Achnahannet the camera batteries dug in for a war of attrition against the law of averages. The youth of the 1960's took a stand against establishment science. In calm “Nessie Weather”, mobile units carried them to vantage points along the north shore. Eventually, they covered 90% of the surface area. The objective was to repeat those classic photographs on good quality film.

David James, with his background of naval service and Antarctic exploration brought an acute mind and outstanding organisational ability to the quest. He showed bold ingenuity in his early expeditions with rock-blasting to simulate the 1930s road building and the last of the wartime searchlights probing for nocturnal activity. He turned a national joke into something like a national endeavour. Using his

position ruthlessly, he had panels of eminent zoologists and barristers examine his evidence, together with Ministry of Defence photo-interpreters. The investigation revealed a definite correlation between calm weather and sightings. They collected some 258 sighting reports and took film on 12 occasions. Their best film was shot in 1967 by Dick Raynor. The photo analysts concluded that an object at the head of the lake may have been 8ft long.

Despite continuing sighting reports from visitors and ten summers of observation, the snatches of film bore no relation to the classic pictures. On reflection, these “classics” differed too much from one another to be real pictures of the same animal. Loch Ness has always been fair game for hoaxers. Perhaps it was no coincidence that all the real classics were taken in black and white within the first thirty years of the controversy, before colour film came into more general use after 1960. Even the great 1934 masterpiece the “Surgeon’s Photograph”, would be exposed as a hoax.



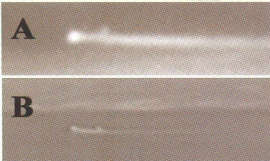
*Reconstruction of
Christian Spurling's Hoax*

It was on the 19th April 1934, that Kenneth Wilson, a surgeon, claimed to have photographed an upraised “plesiosaur” head and neck.

Sixty years later, it was exposed as a hoax at the Loch Ness Centre. It was a model constructed by Christian Spurling, stepson of the hoax mastermind Marmaduke Wetherell of hippo foot fame. It was photographed by Wetherell's other son, Ian. The supposed photographer, Kenneth Wilson, was just a willing stooge. He had actually confessed as much, at least twice!

The hoax took a long time to unravel, because the surgeon was given the photographic plates by a friend, Maurice Chambers, who also knew the Wetherell family. Hence, the surgeon was never associated with the Wetherells and didn't know the method. All he was required to do was to take the plates to Inverness for development. Ironically, palaeontologists have now discovered that plesiosaurs could not raise their necks anyway!

Misleading Monsters



On 23rd April 1960, Tim Dinsdale, took a 4 minute film, of something moving across the loch. In 1966, Britain's "Joint Air Reconnaissance Intelligence Centre", (JARIC), concluded that "it probably is an animate object".

In 1982 we found many film frames (A), showing a "helmsman" similar to one in a boat Dinsdale filmed later (B).

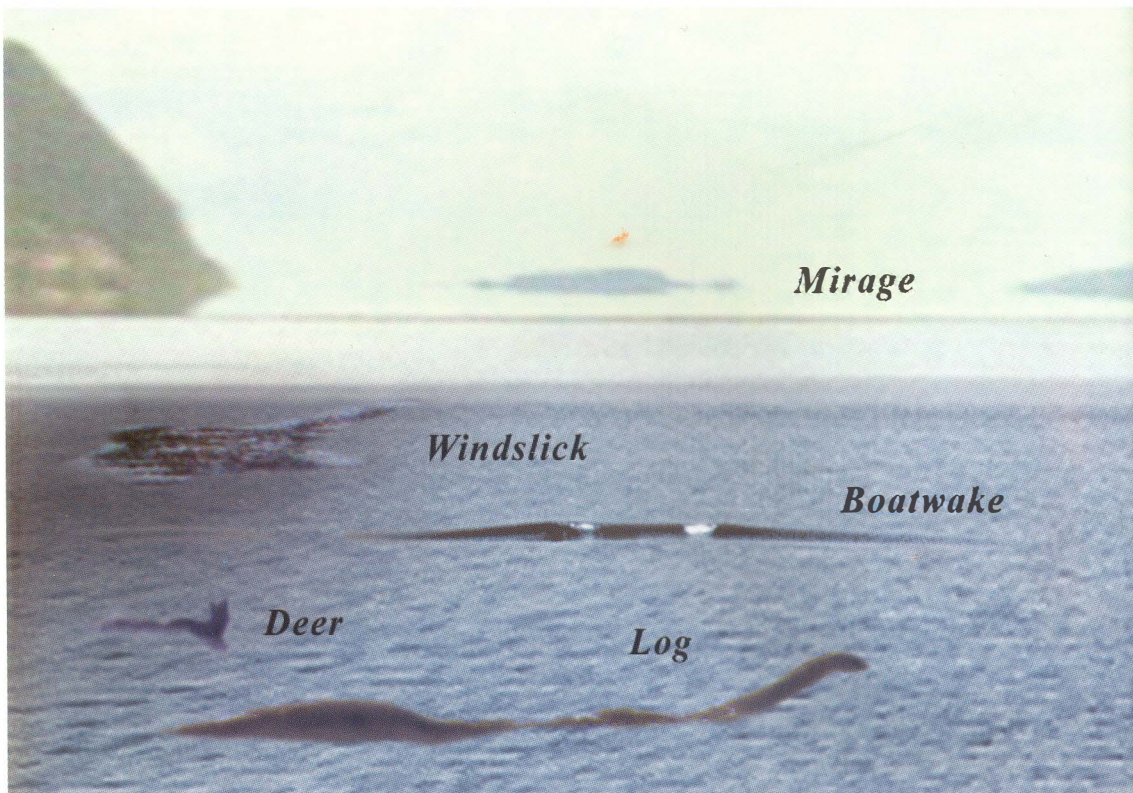
It was not until 2005 that members of the original "JARIC" assessment team confirmed our findings. They stated that the image "has the overall appearance of a small craft with a feature at the extreme rear, consistent with the position of a helmsman".

Tim Dinsdale's integrity was never in doubt but the episode was a very clear demonstration of the loch's power to deceive.

(Tim Dinsdale courtesy Nicholas Witchell & A & B Tim Dinsdale)

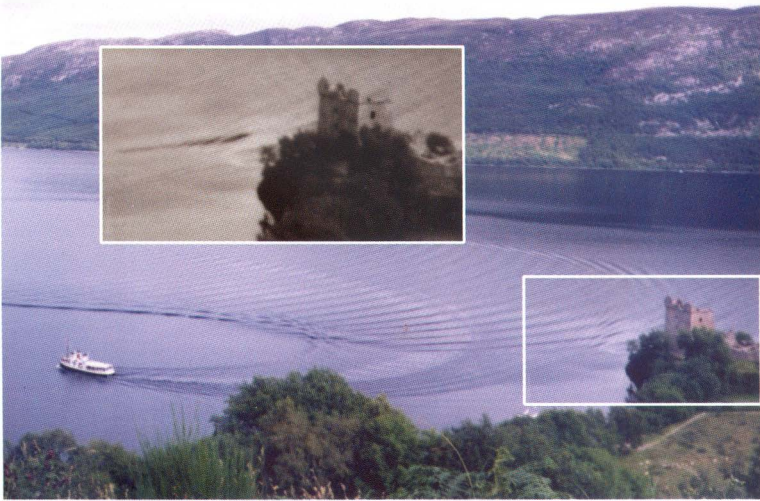
The long years of surveillance had shed light on hoaxes but also showed how sincere eyewitnesses could be misled by the loch's many illusions, particularly on calm water. Of course, on this particular water, almost anything can trigger perceptions. Wind-slicks, boats, seals, water birds and floating logs have all caused sightings.

The multi-humped sea-serpent sightings were boat wakes. Trawlers using the canal are out of sight by the time their wakes come ashore. For many years since 1931, the "Scot II" plied the loch, throwing up sinuous, serpent-like waves with her ice-breaker bows, as shown opposite. Here, the waves will continue past the castle even though the vessel has stopped and turned.



Illusion

A boat wake at Urquhart Castle



Mirages distort images and Loch Ness is particularly subject to them. Its huge volume reacts slowly to seasonal temperatures. So, no winter actually freezes the loch and snow seldom lies along its

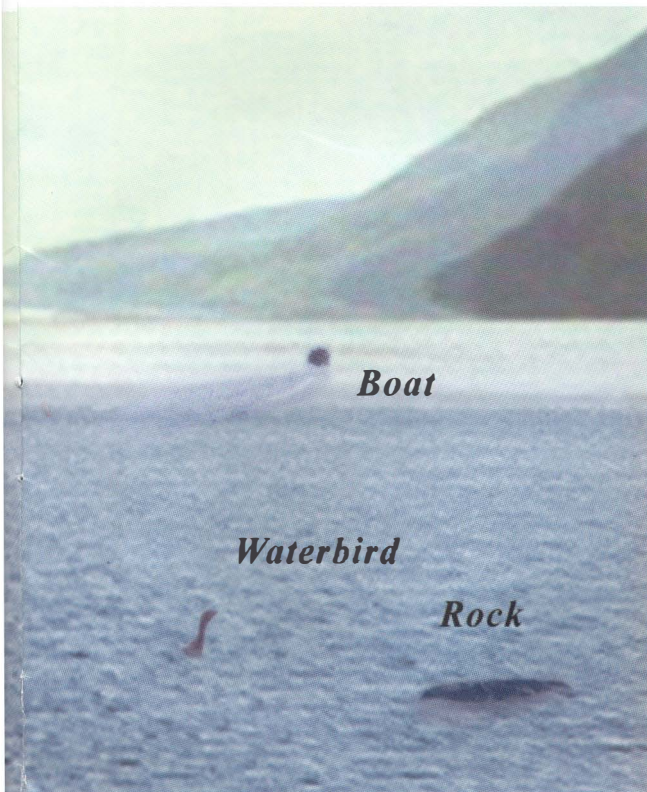
shores for long. Only the top water warms in summer, floating on the denser, colder water underneath, which remains at about 5.5°C. But this happens very slowly, so the water is often colder than the air in summer and warmer in winter. This heats or cools the lower air making a kind of distorting prism. Objects then look taller, especially in calm “Nessie weather”.

Alex Campbell withdrew his plesiosaur sighting after seeing cormorants enlarged by mirage. Perhaps it was the heat haze that hot July afternoon of 1933 which conjured the writhing shapes seen by the Spicers across hot tarmac beyond the brow of a hill.

Seals occasionally enter the loch and could account for land sightings. Deer swim in the loch more often than might be expected.

Even so, the sightings record was undiminished. In human terms, the evidence for unusual creatures in the loch was still overwhelming, yet photographic surveillance on the most massive and protracted scale could not produce verification. If the camera watch had proved anything, it was that there was no one cause of monster sightings. The popular stereotypes were nothing to do with the “beast” of local encounters. Also, a real aquatic creature would only show a tiny proportion above the surface. Even the best telephoto lenses might start an argument but couldn’t finish it. As the camera stations closed down in 1972 the search moved underwater.

Perhaps this was an evasion of the basic question of eyewitness verification but it was seen as more direct and active. To counter the huge scale of Loch Ness, expeditions to small Irish loughs with similar traditions began in 1968. Finally, a spectacular report from the west, resulted in a new group, “The Loch Morar Survey”.



Operation Groundtruth

The Loch Ness Project is concerned mainly with natural history but in the course of our work, we have noted objects on the loch bed. The Great Glen has been a route-way for over 2000 years and perhaps it is time for artefacts of historical interest to be recorded. We call this ongoing search by sonar and underwater cameras "Operation Groundtruth."

Below is a sonar view of the bed of Loch Ness, made during a collaboration with "Kongsberg Simrad" using advanced "swathe sounding" sonar technology. Note the "fans" of sediment deposited by the rivers.



John Cobb's "Crusader"



The Zulu "Pansy"

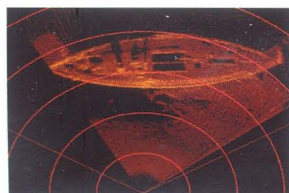
An early success for Operation Groundtruth came on 3rd August 2002 with the discovery of the intact wreck of an 80ft "Zulu" class, sailing fishing vessel near Foyers. This was identified as the Banff registered "Pansy" (BF 1327) built in 1903. In 1909 she was one of the first boats to be fitted with an auxiliary motor. Fifty people came aboard to see her trial run. However, the new motor had banished the crew to the bows



and a contemporary account records that they "suffered a good deal from excessive ventilation during the winter owing to the foremast projecting through the forecandle and leaving a big aperture when lowered, as is always done when the boat is riding to her nets!" The above picture was taken in 1911 and shows the owner James Lovie and his crew, including his son Peter. It was Peter's grandson David who provided the photograph in 2003 at which time his own son and grandson were still fishing.



The "Pansy"



“A Gallant Gentleman”

In 1952 John Cobb, land speed record holder at over 390 mph, brought his jet powered “Crusader” to Loch Ness to attempt the water speed record, which stood at 178.4 mph. Snatching a chance calm on the 29th September, the support vessels rushed into position. Leaving the measured mile at over 200mph, Crusader hit a boat wake and disintegrated; killing John Cobb whose body was recovered. An enquiry began at the nearby Drumnadrochit Hotel. Fifty years later, that enquiry was reconvened in the same building by the Loch Ness Project. Our purpose was to find Crusader as an anniversary tribute to the “gallant gentleman” honoured by a memorial just south of Urquhart Castle. (*J Cobb photo courtesy Diana Sweeny*).

Using archive film and digital image analysis, we plotted the probable location of the wreck. By July 2002 we were satisfied that we had found the debris field by sonar but had not achieved visual contact. We therefore joined with the American Academy of Applied Science team to bring their Remote Operated Vehicle (ROV) to the wreck’s position. On Friday 5th July the remains of Crusader loomed out of the dark lying quietly in 200m of water. (*Crusader wreckage photo courtesy Academy of Applied Science*).

The cause of the accident was the unexpected persistence of boat wakes, including sadly, the wakes of Cobb’s own support boats. Speculation about the Loch Ness Monster playing a part was only true insofar as unrecognised boat wakes do cause the majority of humped monster reports, precisely because of their persistence, which means they are not associated with the vessel which causes them.



The Wellington Bomber

The World War II Wellington bomber N2980 had completed fourteen missions when, on New Year’s Eve 1940, she ditched in the loch after engine failure. The pilots launched their inflatable dinghy and paddled ashore where a lorry driver gave them a lift into Inverness and the New Year celebrations.

Marty Klein, working with the Academy of Applied Science in 1976, discovered the lost aircraft on side-scan sonar. It was lying in 70m of water, which was too deep for a scuba diving survey. Therefore, in 1981 the Project’s research vessel “John Murray” assisted Robin Holmes of Heriot Watt University by providing a platform for a survey by the Remote Operated Vehicle (ROV) “Sea Pup”. The Wellington was recovered in 1985 and restored for exhibition at “Brooklands” in Weybridge where she had been built. There is a commemorative plaque beside the A82 road at the northern end of the loch.



Underwater

By 1972, the “Loch Morar Survey”, had established that this, the deepest Scottish loch, also had quite a credible monster sightings record.

This is where the story takes a more personal turn since I was then an amateur naturalist, who as a

It seemed to me that here was an easy prize. If monsters were attracted to small boats then that was the place to be. I already knew that aquatic creatures tended to rise towards the surface at night so that was the time to be there. I hired a boat and over the next week, rowed around the whole of the loch, camping at intervals. At night I drifted using a sea



The underwater camera hide “Machan” was baited to attract fish and submerged to 10m on the rocky ledges of the shoreline. An observer looked upward, waiting for a huge shadow against the surface brightness. “Pequod” was a small vessel with a transparent dome used to search for unusual bones around the shoreline. Then we introduced a safer method of monitoring. A wide angle T.V. camera was mounted pointing upwards, to reveal the full silhouette of any animal swimming above.

schoolboy had been fascinated by the news of investigations at Loch Ness. I had also read of the encounter on Loch Morar in 1969 when a boat was reportedly rammed by a large creature. This account led to the formation of the Loch Morar Survey. Their results, published in 1972 persuaded me to visit Loch Morar the following year

anchor and a spot light attached to a camera with a powerful flash gun. For its part, the beast disdained an encounter and for my own, I grew up a little! For, in the dusk, I had seen a classic hump-backed monster which ... wasn't! Over the past decades, I have never lost my personal interest in the question of lake monsters but if I am known as a sceptical

Nessiteras Rhombopteryx

investigator then it probably goes back to my resolution that night, that if I couldn't trust my own eyes, I shouldn't trust anybody else's either.

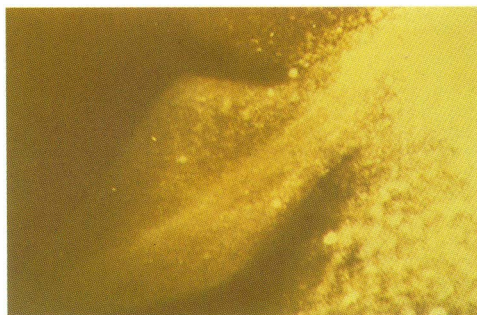
However, during my lone vigil, I had noticed that in contrast to the brown peat stain of Loch Ness, the Morar waters were remarkably clear. Some of the sighting reports suggested large shapes close inshore. Perhaps large creatures were moving in to feed on fish concentrations and perhaps the stalemate reached at Loch Ness could be broken. I was no longer alone and set up a small group called the Loch Morar Expedition. My early expeditions exploited water clarity in a bid to solve the mystery at a stroke.

Meanwhile, back at Loch Ness, Robert Rines of The Academy of Applied Science took on the underwater challenge despite the peaty water, using time-lapse cameras. In 1972 some photos seemed to show shapes within the swirling silt. Published pictures look very much like a flipper but the Academy's photographic expert Charles Wyckoff, cautioned that some had been retouched, probably by magazine editors.

Nevertheless, in 1975 the "flipper picture" became the justification for the naming of the monster, Nessiteras Rhombopteryx; "The Diamond Finned Wonder of Loch Ness". This unusual proposal by Bob Rines and Sir Peter Scott was prompted by concerns for conservation. Further photos now included a nightmare "Gargoyle Head". At first it was believed that the camera was moored too far above the loch bed for any confusion. However, in 1987, a sunken tree stump was recovered nearby, which Wyckoff has found a convincing explanation for the gargoyle photo. In 1976 their cameras were placed beneath a securely anchored raft and no further photographs were taken.

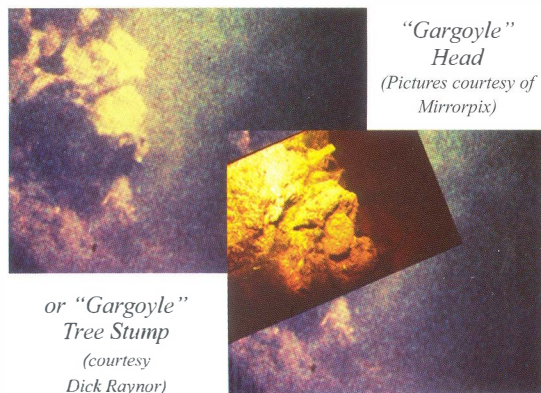
In the same year, we at Loch Morar deployed our "silhouette camera" for over a month. Because the images were moving, we could view them in context, so there are no mistakes.

The philosophy of the enquiry now changed completely. Despite the eyewitness testimony, passive



The "Flipper" Picture
(Pictures courtesy of Mirrorpix)

camera ambush above and below water had failed. The underwater photography era was over. By 1978 my own "Loch Morar Expeditions" had, with



"Gargoyle" Head
(Pictures courtesy of Mirrorpix)

or "Gargoyle" Tree Stump
(courtesy Dick Raynor)

the encouragement of David James and Sir Peter Scott, become "The Loch Ness and Morar Project" to work at both lochs. The Loch Ness Investigation Bureau transferred its material and resources to the new Project. Little did I realise then, that well over a thousand people would become involved in one way or another over the coming years. By the end of the seventies, we focussed on Loch Ness and commenced active examination of the loch's whole environment.

New tools arrived. Sonar sound beams had sometimes made interesting deep water contacts, as in 1968 when Birmingham University recorded huge moving images but sonar definition is poor. So we first examined possible habitats through the lenses of underwater television and the microscope. Beneath the surface, we found a complex and dynamic world.

Habitats Explored



*A real sonar profile.
The little crescents
are fish.*

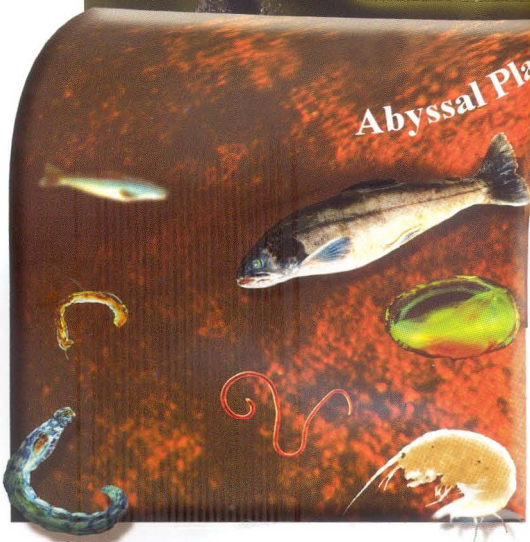
The Shoreline or Littoral Zone

The loch's shore is a stony, wave-washed ribbon shelving steeply into the depths, so only a narrow band of rooted aquatic vegetation is near enough to the surface to obtain sufficient light. Loch Ness Monsters are not vegetarians.

Here the animals are sustained by organic particles washed in. They are mostly insect larvae and are adapted to maintain their position in the turbulence amongst the stones. Some, like the May Fly nymph, have a flattened profile and grasping claws while Caddis larvae find concealment in cases made of coarse sand grains. So, the shoreline animals resemble communities found in fast flowing streams.

The shallowest water shelters Minnows, Stickleback and Lampreys. Further out are the Brown Trout. Deeper down, especially off river mouths, Eels forage after their 6000 mile journey from the Sargasso Sea and beneath them, are the Arctic Charr. These are the loch's most numerous fish though seldom caught by anglers because they swim so deep. The Atlantic Salmon also pass along the shoreline on the way to their spawning grounds in one of the in-flowing rivers.

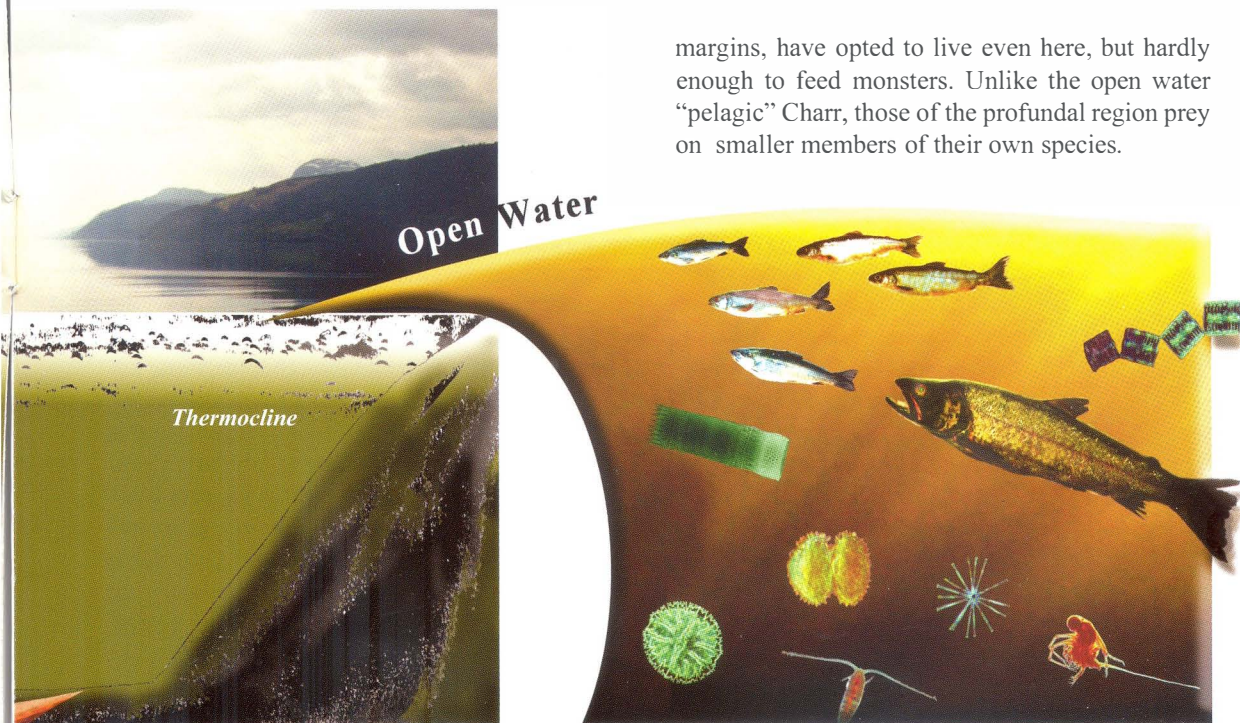
Then 200 metres of barren wall plunge downward; clay slopes and precipitous rocky cliffs offer little as a habitat right, down to the flat silts of the abyssal plain.



The Abyssal or Profundal Zone

In contrast to the turbulent shoreline, the flat silts of the 200m deep abyssal plain are a lost world of stability, stillness, constant darkness, refrigerator temperatures and crushing pressure. But a rain of organic particles sustains a surprising variety of life. So far, we have discovered 64 species; mostly filter-feeding in the mud or just above it. The habitat is a

A Menu for a Monster ?



margins, have opted to live even here, but hardly enough to feed monsters. Unlike the open water "pelagic" Charr, those of the profundal region prey on smaller members of their own species.

refuge for two interesting groups of invertebrates. The dark stillness harbours large white Copepods such as *Megacyclops*, more usually associated with ponds and quite unsuited to the water movements and predation pressure off the beaches.

The cold water also gives sanctuary to some Ice Age relict species. The tiny pea mussel, *Pisidium conventus*, is more usually found in shallow Arctic streams. Another relict from colder times is a chironomid (midge) larvae *Sergentia coracina*. They live in mud-coated tubes, and to emerge as adults they must swim up through 200m of water, running the gauntlet of Arctic Charr. Some chironomids, such as *Procladius*, are predatory, fastening onto the *Sergentia* and sucking them dry.

The depths have also been colonised by an unwelcome immigrant from North America. The flat worm, *Phagocata woodworthii* could have been introduced on equipment brought here by American monster hunters.

Some of the Charr, themselves exiles from the ice

The Open Water or Pelagic Zone

Most life is concentrated here, in the top 30 metres above the thermocline barrier and closer to the light. Poor nutrients grow few phytoplankton (microscopic plants) such as Diatoms, Desmids, Flagellates and other algae. To make matters worse; the light so vital for photosynthesis, is blocked by the dark water. So there is sparse grazing for the tiny animals of the zooplankton.

The larger Copepods and Cladocerans, such as *Daphnia* and *Bythotrephes* are the main food for the fish of the open water. At night most of the zooplankton is near the surface but with dawn it sinks into the darkness, presumably seeking concealment from predation. The offshore waters are the domain of the Arctic Charr. These fish extend across the whole surface of the loch at a depth of approx. 24m by day but rise towards the surface at night, probably in response to the zooplankton migration.

There are up to 1000 Charr per hectare but the biomass has been measured by sonar at only about 20 tonnes.