

By Valerie Elliott
 Countryside Editor
 and Helen Rumbelow

New research suggesting that angling can be a painful experience for the fish has fuelled the arguments of animal welfare campaigners who claim their quarry does not have the brain to feel it

BYRON described angling as "the cruellest of pretended sports". Now, two centuries later, research has finally backed him up by declaring that fish can feel pain.

If, as the study published yesterday by the Royal Society suggests, the cod in fish and chips, the salmon in sandwiches and the prize trout on the wall suffered to get there, then these islands' most popular sport and a major industry may be in trouble.

In recent years animal activists have become vehement in their calls for Britain's 3.5 million anglers to abandon their "violent" pastime.

Anglers reject claims that they can be compared to fox hunters on the grounds that fish are too low a life-form to suffer pain.

The two-year study at the Roslin Institute and Edinburgh University is the latest in a series of contentious reports on the issue that have

been championed by each side of the increasingly acrimonious, and sometimes violent, debate. It claims to be the first to find nervous system receptors that respond to painful experiences in the brains of fish.

Their experiments could be the precursor to new regulations for fish caught by commercial fishermen and reared in fish farms.

It also gives the thousands of "demi-vegetarians" — who eat no meat because of welfare concerns, but do eat fish — food for thought.

Dr Lynne Sneddon, now head of animal biology at Liverpool University, said she wanted to establish once and for all whether fish could feel pain.

"What I set out to do was to find pain receptors in fish like those in higher mammals and humans. If we, as humans, touch a hot iron, we have a reflex to pull away immediately.

This is down to things called nociceptors. For the first time we discovered that fish have them too."

The next step was to prove that these nerves reacted in the same way as in other animals when subjected to pain. The trout were subjected to various unpleasant experiences, such as extremes of temperature. The lips of ten fish were also injected with bee venom — a standard substance used to test pain — and also with acetic acid.

"We found that the fish reacted very strangely. They rocked from side to side when injected with bee venom, a rocking motion strikingly similar to that seen in animals and humans suffering stress," she said.

"When acetic acid was injected, the gill respiratory rates of the fish doubled and they were seen rubbing their lips against the tank walls and gravel bot-

tom. The fish injected with venom also did not eat food until the effects of the experiments subsided. All in all, the results fulfil the criteria for animal pain."

She said that only bony fish such as cod, trout and salmon would show these responses. Previous research on boneless fish, such as stingray, dogfish and shark which have cartilage, had not shown they had nerves or felt pain in the same way as mammals.

"At present there are no rules on killing fish and I would like to see painkillers used if fish are tagged or have fins clipped to identify them," she said.

"I don't have a problem with people getting fish out of the water quickly, killing them quickly and humanely and taking them home to eat. But people also catch fish and let them go for sport and hold them in keep-nets, and I don't think

xperience for the fish has fuelled the arguments of animal welfare campaigners who claim their quarry does not have the brain to feel it

these are welfare-friendly practices."

The research dips its toes into troubled waters. Although the RSPCA, which is against hunting with dogs, is not anti-fishing, the international animal rights group Peta, People for the Ethical Treatment of Animals, has an aggressive anti-fishing campaign.

Dawn Carr, of Peta, said the research strengthened their stance. "Fish may not be cute and cuddly but it does not mean they can't feel pain just like dogs and cats," Ms Carr said.

"If you're angling for entertainment, or on fish farms, or the sea, the animals are suffering, just because the suffering undergone by a fish in your fish and chips is out of sight does not mean it isn't real," she said.

In February 2001, they wrote to Scottish Natural Heritage demanding a ban on

plans to capture the Loch Ness Monster with fishing nets. Recently they have complained about a government-backed scheme called "Hooked on Fishing" which aims to get troubled youths off the streets.

"You have to question the wisdom of this scheme which gets these boys to engage in a violent activity," Ms Carr said.

Other groups have gone further, turning canals and riverbanks into something of a battleground. Clare Persey, an activist for the Campaign for the Abolition of Angling, snapped a competitor's rod at the European angling championships in 2001 and then jumped into the River Trent in an effort to disrupt the competition.

In March 2001 animal rights protesters wearing balaclavas and armed with baseball bats and pickaxe handles terrorised a disabled angler fishing on the Granta, near Harston, Cambridgeshire. Peter Rain-

bow, 62, was alone when about 20 demonstrators began shouting abuse such as "How would you like a hook through your mouth?" through loud-hailers. They fled when he called police.

On January 11, 2001, a letter bomb packed with nails exploded at a fish and chip restaurant in Holywell, North Wales. No group admitted responsibility, but a spokesman for the Animal Liberation Front said at the time that fish-and-chip shops would be considered "legitimate targets" for animal rights protesters.

"Fish are dragged out of the water into an alien environment in which they slowly die. There is no pretence of humane slaughter," the ALF said.

The National Federation of Anglers rejected these claims, citing a report released in February by Professor James Rose at the University of Wyoming. It claimed that although fish

respond to a threatening stimulus, as shown in yesterday's report, this was not the same as them feeling pain.

Bob Clark, of the federation, said that Professor Rose had it right.

"Anglers have known all along that fish do not feel pain, or certainly not pain as other animals know it," Mr Clark said.

"To attribute the same sensory reaction to fish as you would to mammals is not supported in science at all," he said. "Even this report says not that fish feel pain, but that they 'could' feel pain," he added.

Dr Bruno Broughton, a fish biologist and scientific adviser to the federation, said: "I doubt that it will come as much of a shock to anglers to learn that, when their lips are injected with poisons, fish respond and behave abnormally. However, it is an entirely different matter to draw conclusions about the ability of fish to feel pain, a psychological experience for which they, literally, do not have the brains."