Ahyong, S.T. (2010) Japanese Shrimp makes NZ debut in Kaipara Harbour. Seafood New Zealand, 18(9): 11-12

Japanese shrimp makes NZ debut in Kaipara Harbour

A few months ago long time Leigh fisherman Dave McIntosh was among the first to discover the Japanese mantis shrimp in New Zealand waters. Peter and Christine Yardley, who have worked Kaipara waters since 1973, have only noticed the unusual species in their nets since November 2009. Since then a handful of others have turned up in fishermen's nets around Kaipara harbour and at Hokianga.

Dave was part of a team doing a trawl survey with NIWA in the Hellensville end of Kaipara Harbour.

"We were in a 6m barge and got him in a beam trawl. I'd certainly never seen anything like it and when the scientists saw it they hadn't either."

"He was alive when we caught him. We were all apprehensive about touching the thing. It rolled itself up into a ball," Dave said.

Dave was right to stay away from it. The Japanese mantis shrimp is known for its lightening fast strikes. It has a pair of mantid-like claws that it uses to capture food – known as raptorial claws. Rather than grabbing and crushing with pincers in the way that crabs and hermit crabs do, mantis shrimps use a lightning-fast strike of their raptorial claws to capture or subdue prey, either impaling them on spines or by simply smashing them open.

Specimens were sent to NIWA, and were identified as the Japanese mantis shrimp, *Oratosquilla oratoria*.

As with other mantis shrimps, *O. oratoria* has pelagic larvae. It is thought it first entered New Zealand as larvae in ballast water of foreign shipping.

A: introduced mantis shrimp from Kaipara, *Oratosquilla oratoria*. B: native mantis shrimp, *Pterygosquilla schizodontia*. (Photos: S. Ahyong, NIWA).

The specimens captured so far are mature adults, and judging by their large size (around 15 cm length), are probably about two and a half to three years old.

Their rather wide range in Kaipara and Hokianga suggests that they have been present for some years, but are perhaps only now reaching sufficient numbers to be noticed.

Introducing the Japanese mantis shrimp

Oratosquilla oratoria is native to the northwestern Pacific region

where it is most common in temperate waters of China and Japan, although it extends occasionally as far south as Vietnam, and as far north as southern Russia and Korea. It lives in burrows in soft sediments, sand and mud in sheltered bays and estuaries, and where they are abundant, are important bioturbators through their burrowing activity. In Japan, *O. oratoria* is an important commercial species, where it is known as Shako.

The mantis shrimps are unusual crustaceans. They also have remarkable eyes, being amongst the most complex of any invertebrate. The mantis shrimps are not true shrimps (order Decapoda, which includes crabs and lobsters), but belong to a separate order, the Stomatopoda. Around 500 species of stomatopods are known, with fewer than 20 species known from New Zealand. The most common New Zealand mantis shrimps are *Heterosquilla tricarinata*, which burrows in sand and mudflats right around the North and South Islands, and *Pterygosquilla schizodontia*, which lives subtidally around the South Island and up to the mid North Island.

The travelling shrimp

Oratosquilla oratoria is the first mantis shrimp to be introduced to New Zealand waters, but this is not the first time it has become established elsewhere. In the early to mid 1980's, *O. oratoria* became established in the Sydney region, where it successfully colonised disturbed and impacted habitats, mostly in the upper reaches of Sydney Harbour, and in Botany Bay. By the early 1990's, *Oratosquilla oratoria* was sufficiently abundant that it became commercially harvested as part of the prawn trawl bycatch. The impacts of *O. oratoria* have not been quantitatively studied, though anecdotally, it appears to have naturalised itself without major incident. This may be partly because it lives mostly in areas that have already been disturbed and degraded. As yet, we know nothing of the impacts of *O. oratoria* in New Zealand, and whether the New Zealand incursion of *O. oratoria* originated from Australia or from the northwestern Pacific is presently unknown.

NIWA wants more

If you find any suspect specimens, NIWA is interested in seeing them. They can be preserved in methylated spirits or frozen, but for instructions how best to preserve and send them, you can contact the MAF BNZ hotline (0800 809 966).

O. oratoria could be easily confused with the native mantis shrimp, *Pterygosquilla schizodontia*.

The quickest way to distinguish the two species is by the presence of red-maroon ridges running down the midlength of the body in *O. oratoria* (these are not obvious in *P. schizodontia*), and by the colour of the outer surface of the tailfan, which is blue and yellow in *O. oratoria* (gray and yellow in *P. schizodontia)*.

Both can be of similar size, with similar general colouration and have similar predatory habits. Beware in handling any large mantis shrimps, as they can strike out with their spiny claws and tail earning them the name thumb-splitter in some circles.

For more information, contact:

Dr Serena Wilkens at NIWA. Phone 04 386 0364 or email s.wilkens@niwa.co.nz

100 YEARS AGO THIS MONTH

Alleged lock-out

Hawera & Normanby Star, 4 October 1910.

Giving judgement in the case of the Inspector of Awards v. Fernandos and Co., a claim for £500 in respect of an alleged lock-out by defendants of certain fishermen in their employment, the Magistrate considered the evidence did not warrant such an interpretation being placed on the laying up of a trawler. The fishing boat was being run at a loss and the owners asked for a conference with the crew. The latter conceded the conference and it was to allow of this being held that the boat was laid up. Judgement was given for defendants without costs.

The mosquito pest

Colonist, 8 October 1910.

The Government has imported a quantity of fish known as "millions," for the destruction of the larvae of mosquitoes.

Newsy pars

Thames Star, 22 October 1910.

A Swedish sailor, whose only appellation appears to be "Jack," and who had been fishing for a few days about Doubtless Bay, nearly found Davy Jones' locker last week. The fishing boat overturned with him and he clung to it for 28 hours before he was able to make land, in an exhausted condition. The boat was eventually wrecked.

Catching whales in nets

Ohinemuri Gazette, 24 October 1910.

Whaling is an industry that has been carried on regularly and with more or less success in Australisian waters for half a century. In the early days the hardy whaler, cruising round the stormy waters of the South Island of New Zealand, lowered his boats and captured his "fish" whenever they spouted. But the modern method, picturesquely described in the November issue of "Life" – is more comfortable, though not unattended by risk. It seems that at certain times of the year, the whales, like the swallows, go north, and at these times enterprising whalers, with headquarters at Whangamumu, north of Auckland, run out a string of nets, entangle the passing leviathans in a mesh of wire, and despatch their prey with harpoon and lance. If the lance fails, a steam launch appears on the scene and performs the happy despatch with a bomb