# Indonesian 'king of the sea' discovered

On 30 July 1998, an Indonesian population of coelacanth was discovered. It is apparently the same species as the well-known coelacanth from the Comoran archipelago in the Indian Ocean, *Latimeria chalumnae* Smith.

At sunrise on 30 July, Om Lameh Sonathan and his crew of ten fishermen retrieved a living coelacanth from their deep-set shark gill-net off the young volcanic island of Manado Tua, north Sulawesi, Indonesia. This is almost 10,000 km from the known population of *L. chalumnae* in the Comoros[1,2]. The Indonesian specimen, which is 124 cm long and weighs 29.2 kg, was observed live by one of us (M.V.E.) for more than 3 hours before the carcass was deep-frozen and tissue samples were collected for molecular analysis.

A preliminary examination of the specimen's external morphology suggests that it is conspecific with *L. chalumnae*, although this must be confirmed by further investigation. The only immediately observable difference from published accounts of *L. chalumnae* is the colour. Previous specimens, from the western Indian Ocean, including the first one observed by Marjorie Courtenay Latimer, are usually described as 'steel blue'[3,4], although there are reports of dead coelacanths appearing brown[5]. The live Indonesian specimen was distinctly brown. It shares the same characteristic white mottling pattern as Indian Ocean specimens[6], but has numerous striking gold flecks over the entire dorsal surface of the body and fins. These are apparently a prismatic effect of light reflecting off the numerous denticles on the scales.

The fish was caught in a shark gill-net of mesh size 6 cm, approximately 150 m in length and 11 m in height, set 3.5 m off the substrate at a depth of 100–150 m for a 12-hour period overnight. The capture site was at the base of a steep volcanic slope known for its complex cave and crevice topography, and appears similar to the habitat reported for the Comoran coelacanths[7].

This is only the fourth coelacanth reported to be caught in a net, as the Comoran specimens were captured by fishermen hand-lining for the oilfish, *Ruvettus pretiosus*[4]. Of the three previous specimens caught outside the Comoros, two were captured in trawl nets, off South Africa[3] and Mozambique[7], and a specimen from Madagascar was caught in a gill-net[8]. Interviews with fishermen throughout north Sulawesi reveal that, although the oilfish is often caught by hand-line in this area, coelacanth (known locally as *raja laut*, or 'king of the sea') are only ever caught using deep gill-nets.

The Indonesian coelacanth shortly after capture.

The new specimen is actually the second coelacanth to be reported from north Sulawesi. On 18 September 1997, the wife of M.V.E. saw a strange-looking fish being wheeled in a cart across the fish market in Manado. The fish was immediately recognized as a coelacanth, but we only managed to take some photographs of the fish and briefly interview the fisherman before it was sold. M.V.E. has since been interviewing fishermen in villages throughout the area, as part of a US National Science Foundation international postdoctoral fellowship with the Indonesian Institute of Sciences and with the support of the National Geographic Society. These surveys have identified several fishermen from north Sulawesi who claim to have captured coelacanths. These interviews, combined with the vast distance from the Comoran archipelago, strongly support the idea that the Indonesian coelacanths are part of an established north Sulawesi population, and not simply 'strays', as has been suggested for the other specimens captured outside the Comoros[9].

The discovery of an Indonesian coelacanth population has biogeographical and conservation implications. It is unlikely that living coelacanth exist only in two small, highly disjunct populations. Comparison of DNA sequences from tissues of the Indonesian and the western Indian Ocean specimens will reveal the depth of divergence between these two populations.

Further expeditions in Indonesia and to the islands in the vast stretch of Indian Ocean between the Comoros and Indonesia may discover additional populations. This would be welcome news for coelacanth conservation, as the fish is considered highly endangered, in part because of its extremely limited distribution and small population size[10]. Nonetheless, the Indonesian government is already considering measures to prevent a repeat of the conservation problems caused by fishing and scientific collection in the Comoros[11].

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