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GIANT FIRE SALPS, *PYROSOMA SPINOSUM,* IN TASMANIAN WATERS (TUNICATA : PYROSOMIDA)

by Elizabeth Turner and Alison Green

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On the 10th April 1989, Mr Shane Wisby was pulling craypots into his fishing boat off the Blowhole, near Eaglehawk Neck, south-eastern Tasmania. One of his pots was unusually heavy and, on looking down, he saw a huge object entangled with the rope. He estimated it to be about 25 feet long (7.6 metres), with the diameter of about 0.6 metres and with a "tail" (nearly two metres long) at one end. When it was brought to the surface the object broke into pieces but Mr Wisby salvaged a portion half a metre in length which he stored in his home refrigerator.

Mr Wisby contacted Mr Alex Schaap, of the Department of Sea Fisheries, who relayed the story to Elizabeth Turner. Next day Elizabeth and Ms Kathryn Davidson travelled to Eaglehawk Neck to investigate the find. Earlier guesses at a giant squid or a very large jellyfish were set aside when the specimen was recognised as a relative of salps. Mr Wisby donated his catch to the Tasmanian Museum. (Registration no. D2049). Back at the museum, Alison Green identified the specimen as part of a colony of *Pyrosoma spinosum* Herdman, 1888, following a comparison with an account of this species by Baker (1971).

Pyrosoma, salps and sea-squirts are related animals which used to be included in Phylum Chordata, together with the vertebrates. They do not have backbones but they share some vertebrate characters, such as gill slits. Now *Pyrosoma* and its relatives are in a separate phylum, Tunicata.

Typical salps are single animals, semi-transparent and barrel-shaped, although several salps may be linked to form a chain. In *Pyrosoma* many animals, called zooids, live together in a colony. Each zooid is like a small salp. The zooids lie side-by-side, embedded in a gelatinous wall with their mouths opening on the out-

side of the wall. The colony forms a hollow cylinder with one end open and the other end closed. The zooids suck in sea water, filter out the plankton on which they feed, and discharge the water into the hollow centre of the cylinder. The current then flows from the open end to propel the colony through the sea.

Pyrosoma zooids have luminous organs which glow in the dark so the common name, fire salp, is appropriate. New Zealand divers call large *Pyrosoma* colonies "sea socks".

Thompson (1948, p.85) placed all of the *Pyrosoma* specimens found in Australian waters in one species, *P.atlanticum* Peron, 1804. Pale pink colonies of *P.atlanticum* sometimes wash ashore on Tasmanian beaches. Most examples of this species are not longer than 12 centimetres, although larger colonies do occur. Mr Wisby's *Pyrosoma* from Eaglehawk Neck was enormous in comparison.

Thompson (1948, p.83) listed the distribution of *P.spinosum* as the Indian, Atlantic and North Pacific Oceans. This giant species was recorded from the South Pacific after examples were found off the coasts of New South Wales, in 1967 and 1969, and New Zealand, in 1969 (Griffin, Yaldwyn and Baker 1970). However, *P.spinosum* was not identified from Tasmanian waters until Mr Wisby's specimen was examined in 1989.

Apart from size, *P.spinosum* and *P.atlanticum* differ in some anatomical characters, e.g., in *P.spinosum* the gill slits are set obliquely instead of at right angles to the long axis of the zooid. Also the tail-like process, observed by Mr Wisby, is a feature of *P.spinosum*. The Eaglehawk Neck specimen, when fresh, was orange-pink in colour with dark red spots formed by some organs in the zooids.

According to Baker (1971, p.109) most Australasian examples of *P.spinosum* range between four and 12 metres in length. However, each zooid is not more than two centimetres long. Colonies drift in calm water, down to depths of 40 metres. They break up if they are jolted by waves or removed from the support of water.

In April, Elizabeth Turner contacted Dr George Cresswell, of C.S.I.R.O., to ask about oceanic conditions at the time. He advised that the sea off eastern Tasmania was then 1-2 °C warmer than usual due to a warm current flowing down the east coast of Australia. The situation was similar in the late 1960's when *P.spinosum* was discovered off New South Wales and New Zealand.

After publicity about Mr Wisby's discovery in *The Mercury,* (15th April, 1989), reports were received of three earlier Tasmanian sightings of objects which, very probably, were colonies of *P.spinosum*. These were near the Hippolyte Rocks (off Tasman Peninsula), at Barnes Bay, Bruny Island (in 1988) and at the mouth of the Huon River, (all during autumn).

Now that the identity of the fire salp colony from Eaglehawk Neck has been determined, perhaps there will be more Tasmanian findings of *P.spinosum*.

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HYPOLEPIS DISTANS — A NEW SPECIES RECORD FOR MAINLAND TASMANIA

by Mark Neyland

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Until 1973 the ground fern *Hypolepis distans* was believed to be a New Zealand endemic. In 1973, Mr P.F. Barnett collected some specimens from King Island which were later identified by R.J. Chinnock as *Hypolepis distans,* (see Chinnock 1976) thus extending the known distribution of the species.

During the course of a survey of non-allocated Crown land around Smithton (Neyland 1988), I collected some material which was forwarded to R.J. Chinnock via the Hobart herbarium and which has been recently confirmed also as *Hypolepis distans,* extending the known distribution of the species to mainland Tasmania. The sample was collected from the eastern edge of the Fourteen Mile Plain, just off Barcoo Road, about 20km southwest of Smithton. (Hunter 1:100,000 Land Tenure Sheet, Grid Ref: 247705).

The Smithton sample was found on the base of a windthrown *Eucalyptus brookerana,* in an area of swamp forest comprising *E.brookerana* over a mixed understorey of blackwood, tea tree *(Leptospermum scoparium)* and scattered myrtle and sassafras. The ground layer was dominated by cutting grass and saggs *(Lepidosperma elatius)* and at a later visit in winter the area was partly flooded to a depth of 10cm. The area is therefore similar to that described for the King Island location *Melaleuca squarrosa - Leptospermum scoparium* Swamp, Chinnock 1976) and both records accord well with the New Zealand ecology of the species, where it is found in "swampy areas, on peat, in soils with a deep humus