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DIVER

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Article written by that unbiased, tells it as it is John Bantin

A woolly wetsuit for British divers.

During the middle ages, Merino wool was so prized that it was made illegal, on pain of death, to export a Merino sheep from Spain, lest it break the kingdom's dominance of the wool trade. The intensive grazing of Merino sheep stocks in those years gave Spain the stark landscape it has today.

Nowadays the finest Merino flocks are to be found in New Zealand, where a pristine Alpine landscape of the sort you saw in Lord of the Rings results in an elite type of sheep – and the Spanish are still complaining about it!

We all know about the efficacy of wool for keeping you warm. Merino wool has particularly fine fibres and its complex natural structure, with its hydrophobic outer scales and hydrophilic inner cells, keeps both the sheep and those wearing garments made from their wool extremely warm and dry.

New Zealand Merino sheep are said to have a fleece with extra-long hollow fibres, resulting in a particularly soft and strong end product.

What does this all have to do with diving? John Gordon, doyen of diving suit designers, has a son who lives in New Zealand. Ever thinking of ways to improve his design's thermal efficiency, he tried Merino wool as a suit-lining and found that it out-performed in many ways the more often used synthetic materials made from petro-chemical products.

Waterlogged Layer

Water is the insulator in a wetsuit. The Pinnacle Polar has a Merino wool lining that absorbs and retains water entering the suit. This creates a waterlogged layer between your skin and the suit which can add up to 3mm of extra insulation. On top of that, the wool is exothermic, in that it produces heat as it gets wet.

The Pinnacle Polar is a one-piece suit made with a mix of 5mm and 7mm neoprene. It has a front-entry cross-chest zip. Long zips at the ankles allow the neoprene outer layer to cover

soft latex seals but let a big foot like mine pass through. The seals deter water from flushing through.

The cuffs of the sleeves have O-ring-type seals at the ends and a chimney seal in the sleeve for the same reason. Underneath the main zip is a soft 3mm shoulder cape that you wriggle into place once the suit is pulled up to the chest. Then, with the hood pulled up over the head from behind, the main zip is closed.

There is a knack to this. This suit is cut with pre-bent arms and legs, and gussets on the inner curve of the elbows and knees allow for a degree of mobility otherwise denied. Hood up and zipped in, like a medieval knight at a jousting tournament, I felt well-insulated from the outside world.

Let's be clear – this suit does not have a fluffy or towelling like lining, because the Merino wool is knitted into a tough cloth. Nor is the Pinnacle Polar a drysuit. Although it has internal seals within the arms and soft latex seals at the ankles to prevent flushing, it needs some water within it to be fully thermally efficient, as with any wetsuit.

Clammed Shut

The knit of the Merino lining helps to reduce the movement of the water inside the suit, and because the insulating layer of this wetsuit is water, it is incompressible and unaffected by depth.

So although the neoprene of the outer layer crushes and loses its insulating properties (it can half its thickness between the surface and 40m) as all neoprene does, the 3mm of water held in the lining between you and the suit's outer layer does not.

I am told that in tests carried out by the British Textile Technology group, Merino wool offered a serious increase in thermal efficiency over synthetic linings.

So are there any disadvantages to having a soggy lining to your wetsuit? It doesn't feel itchy against the skin because the wool is so fine, and because of its ability to draw water away from its surface, it doesn't really feel soggy at all.

It's claimed that the uneven surface structure helps to prevent the build-up of odour-causing bacteria, and the natural crimp seems to make it resilient to Velcro-attack too. So, no disadvantage as far as I could tell.

In fact I was so well protected from the cold that I felt ready to jump into an ice-cold flooded quarry if needs be. But I didn't.

It was a pity that the suit which had been specially tailored to fit me was such a close fit. I needed a lot of time to squeeze myself into it, and once the hood was pulled over, I felt I was clammed shut.

I suddenly realised why traditional divers carried that big brass-handled Siebe-Gorman knife. I thought that, had I needed to get out in a hurry, the boys from the fire-brigade would have used something similar!

This is no criticism of the suits, simply an observation that personal tailoring is not without its problems. I asked the importer to send me a larger off-the-peg size in which to go diving.

The Red Sea in early June might be expected to be warm, and some of my fellow-divers had arrived with nothing more than dive-skins. It was 24° C. I have never been too warm on a dive but I have often been too cold, especially as time passes.

In the Pinnacle Polar, I was snug as a bug, and because the zip is positioned across the front, I needed no help getting in and out of it. I got a bit of a grief from the boat captain for taking 75 minutes over a dive while the others were coming back well within the hour, but he was confusing me with someone who was not relishing the comfort of his suit.

I have to say that it proved to be one of the most comfortable and effective suits I have ever used: almost as warm as a drysuit but as unencumbering as a wetsuit.

The only downside was the extra lead I appeared to need to carry to counteract its natural buoyancy.

That said I have decided to retain the suit a little longer for “extra testing”. Just one other point for those who worry about such matters – wool is a renewable resource.

... straight down the line

PLUS

+A semi-dry for the coldest conditions

MINUS

-Dry Suit Divers won't believe it