collection has a height of about seven inches, and consists of a smooth, cylindrical, monosiphonic stem, set for the greater part of its length with delicate, alternate, pinnately disposed ramuli, each springing by a distinct joint from the summit of a well-developed cladophore, and usually presenting two, sometimes three or four bifurcations. Every bifurcation is immediately preceded by a very distinct joint, while a similar joint occurs, in one of the two branches of the bifurcation, close to the origin of the branch. Joints also occur at distant intervals on the branches. The stem carries a hydrotheca in the axil of every pinna, and is provided with very well marked joints at distant but uncertain intervals.

The margin of the hydrothecal orifice is deeply cleft, and the orifice thus becomes bounded by two triangular lips, which give to the summit of the hydrotheca the form of a mitre. The perisarc of the stem is thick and of a dark-brown colour, that of the pinnæ is very thin and transparent, and nearly colourless. In many of the ramuli the soft parts were well preserved and allowed of a good view of the cœnosarc and hydranths.

Thuiaria vincta, n. sp. (Pl. XXXII. figs. 2, 2*a*).

Trophosome.—Stem monosiphonic, simple, set with pinnately disposed, equidistant, alternate ramuli, which are divided into internodes by constrictions at uncertain intervals. Hydrothecæ borne both by stem and pinnæ, closely set on the pinnæ, alternate, nearly cylindrical, wide, adnate to the hydrocaulus for nearly their entire height, those of opposite sides bound to one another by strong chitinous bands formed by thickenings of the intervening perisarc, orifice circular and entire.

Gonosome not present.

Locality.—Station 186, Flinders Passage; lat. 10° 30′ S., long. 142° 18′ E.; depth, 8 fathoms.

The only specimen of this curious form contained in the collection is a fragment about an inch and a half in height, which scarcely allows of a satisfactory estimate of the size and habit of the colony. It is very regularly pinnate, and both stem and pinnæ carry alternate hydrothecæ which in the pinnæ are closely set.

Its most remarkable feature consists in thickenings of the perisarc of the hydrocaulus, which in the form of strong bands stretch from the proximal angle of the epicauline side of every hydrotheca to the opposed wall of a hydrotheca of the opposite side, thus giving to the hydrothecæ the appearance of being bound together by strong chitinous bands. The angle to which one end of each band is attached presents a knob-like thickening of its chitinous walls.