Ascidiacea

The transverse stigmata, absence of pharyngeal folds, and presence of dorsal languets or teeth on the dorsal lamina, are believed to be merely juvenile characteristics.

The arrangement of the parts of the gonal is similar to that in *S. uniplicata* (Bonnevic, 1896, p. 7).

Dendrodoa adolphi (Kupffer)

See RITTER (15:43, p. 184) and REDIKORZEW (1916, p. 297) for description and literature.

West coast of McClintock island, Franz Josef land, (80° 22′ N. lat.), July, 1902, Baldwin-Ziegler expedition, U.S. Nat. Mus. no. 6640, 6 specimens.

The invariability in the number (3) of branches of the gonal is perhaps the most striking character of this species. The strong development of the pharyngeal folds and the large number of tentacles (about 55) are also important.

The three specimens dissected showed the following characters. The lengths were 9, 12 and 15 mm, and the diameters 6, 9, and 10 mm. As the specimens were considerably contracted, the shape in extension must be quite long and cylindrical. The roughening of the surface appears to be almost entirely due to contraction, although there may be several irregularly placed and irregularly shaped excressences. The area of attachment is definitely terminal and small. 50 tentacles were counted in the second specimen. The majority were approximately equal in size, but a few were quite small. Aperture of dorsal tuberele crescent-shaped. Opening between horas directed forwards, and slightly toward left.

Formula for bars on pharyngeal folds.

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1.	Right.	Dors.	0	(8)	I	(4)	I	(6)	I	(4)	1	Vent.
2.	Right.	44	1	(12)	0	(6)	t)	(9)	Ð	(7)	0	6.6
	Left.	4.6	I	(12)	0	(.5)	0	(8)	0	(6)	0	6.6
3.	Right.	66	1	(9)	I	(4)	1	(8)	1	(5)	1	66
	Left.	66	1	(9)	1	(4)	1	(7)	1	(5)	i	66

Gastric folds from 24 to 30 in number. Intestine varying much in curvature. In the first specimen it bends back to run parallel to and close beside the stomach and continues in an almost straight but short course to the anus. In the third specimen it takes a short S-shaped course, the final part paralleling the oesophagus and continued into a very long rectum. In the second specimen only does the condition correspond with that described by Ritter, that is with the first part making an even curve around to the oesophagus, and then bending rather sharply forwards and downwards.

The necessity for a revision of the species of this genus has been repeatedly emphasized. No one seems yet to have had sufficient material for this purpose. Although I have referred these specimens to Kupffer's species, it is highly probable that the latter is identical with *D. kükenthali* Hartmeyer (1899, p. 493) and *Cynthia pulchella* Verrill (1871, p. 98). The latter has been well described by Van Name (1912, p. 581) as *D. aggregata* var. *pulchella*. If these species are synonymous, Verrill's name will have the priority. The differences that have been noted between these forms do not seem to be very important, having to do with the numbers and sizes of the tentacles, numbers of longitudinal bars, orientation of dorsal tubercle, number of gastric folds, and course of intestine, all of which vary greatly from individual to individual. With such limited material at my disposal, I besitate to unite these forms.

D. adolphi has been recorded from north-east Greenland, Bering sea, and the Gulf of Tartary; *D. kükenthali* from Bering sea, Siberian Arctic ocean, Kara sea, and Spitsbergen; and *D. pulchella* from Newfoundland to the C \cdot If of Maine.