

Table 8.1.

VELOCITIES OF PROPAGATION OF EXCITATION IN SOME COELENTERATES. (These are reported figures of over-all apparent velocity and include any junctional delays. It should be realized that various factors influence velocity; in particular, it increases with facilitation and decreases with fatigue; effects of stretch are uncertain.)

Genus	Pathway	Velocity (m/sec)	Temp. (°C)	Ref.
Hydrozoa				
<i>Cordylophora</i>	Electric potential in stolon	0.027	22	1
<i>Tubularia</i>	Electric potential in stem	0.16	19	2
<i>Pennaria</i>	Colonial, local, graded	0.01	26	1
<i>Hydractinia</i>	Colonial, local, graded	0.025	15	1
<i>Aequorea</i>	Radial conduction system	0.002–0.02	20	3
<i>Aequorea</i>	Swimming beat system	0.90	20	3
<i>Physalia</i>	Fishing filament (stretched ?)	0.12	26	4
Scyphozoa				
<i>Haliclystus</i>	Through-conduction, calyx	0.07–0.15	12	5
<i>Pelagia</i>	Radial, centrifugal, subumbrella	0.01		6
<i>Pelagia</i>	Swimming beat	0.24		7
<i>Cotylorhiza</i>	Swimming beat interval 5 sec	0.62		8
<i>Cotylorhiza</i>	Swimming beat interval 3.4 sec	0.71		8
<i>Cotylorhiza</i>	Swimming beat interval 3.2 sec	0.83		8
<i>Aurelia</i>	Swimming beat	0.50		9
<i>Aurelia</i>	Tentacle contraction wave	0.25		9
<i>Cassiopea</i>	fast action potential Swimming beat: circuit wave	0.45 0.77	28 29	10 11
<i>Cassiopea</i>	Slow through-conducting net in subumbrella	0.18	28	10
<i>Cassiopea</i>	Slow wave of contraction after marginal stimulation	0.08	25	12
<i>Cyanea</i>	Spontaneous waves crossing muscle	0.02		12
Anthozoa				
<i>Calliactis</i>	Pedal disc; circumferential	0.15	19	13
<i>Calliactis</i>	Column; vertical	0.10	19	13
<i>Calliactis</i>	Column; radial	0.04	19	13
<i>Calliactis</i>	Mesentery; vertical	1.20	19	13
<i>Calliactis</i>	Oral disc; margin, circular	1.00	19	13
<i>Calliactis</i>	Oral disc; radial	0.60	19	13
<i>Cerianthus</i>	Column through-conduction	1.3	22	14
<i>Pennatula</i>	Luminescent wave, colonial	0.05	15	15
<i>Leioptilus</i>	Luminescent wave, colonial	0.26	20.5	16
<i>Cavernularia</i>	Luminescent wave, colonial (weak glow, from any part)	0.10		17
	(strong glow, from peduncle)	0.075		17
<i>Renilla</i>	Luminescent wave, colonial	0.04–0.08	21	18
<i>Tubipora</i>	Polyp retraction, colonial	0.15–0.20	20	19
Plexaurid gorgonian	Colonial, through-conducting	0.40	29	20
<i>Fungia</i>	Oral disc, through-conducting	0.4–0.5		19
<i>Acropora</i>	Colonial, through-conducting	0.02		19

(1) Josephson, 1961; (2) Josephson, 1962; (3) Horridge, 1955c; (4) Parker, 1932; (5) Gwilliam, 1960; (6) Bozler, 1926b; (7) Horstmann, 1934; (8) Bethe, 1935; (9) Romanes, 1878; (10) Passano, personal communication; (11) Harvey, 1912; (12) Horridge, 1956b; (13) Pantin, 1935; (14) Horridge, 1958; (15) Panceri, 1872; (16) Davenport and Nicol, 1956; (17) Honjo, 1944; (18) Parker, 1920; Nicol, 1955; Buck, 1954; (19) Horridge, 1957; (20) original.