TABLE 2

NUCLEAR DNA CONTENT, CELL VOLUME AND MINIMUM DOUBLING TIME FOR EUKARYOTES

Species	DNA (pgm) Volume (μ^3) Doubling Time (h)		Species	DNA (pgm) Volume (μ^3) Doubling Time (h)		Species	DNA (pgm) Volume (μ^3) Doubling Time (h)	
CHLOROPHYCEAE			*C. pavillardii*	200**	(19)	*Ceratium fusca*	26.1**	(28)
Chlorella sp.	.12**	(1)		...			...	
	...			22.5	(19)		21	(28)
	8.7	(1)	*Chaetoceros* sp. 1	.053**	(15)	*Amphidinium*		
C. pyrenoidosa	.032	(2)		...		*carteri*	1.38	(7)
	8.8*	(2)		7.2	(15)		955*	(7)
	5.1	(3)	*Chaetoceros* sp. 2	.28**	(20)	*Cochonina niei*	5	(7)
C. ellipsoida	.0796	(4)		...			1,380*	(7)
	103	(5)		4.7	(20)	*Gyrodinium cohnii* ...	3.5	(29)
Scenedesmus			*Cylindrotheca*				1,845	(30)
quadricauda	.1	(6)	*fusiformis*	.43**	(15)	*Peridinium*		
	...			...		*trochoideum*	17	(24)
	7.5	(6)		7.3	(15)		8,250	(31)
Dunaliella			*Nitzschia turgidula*	.34**	(21)	CHRYSOPHYCEAE		
tertiolecta	.336	(7)		...		*Monochrysis lutheri* ...	.071	(7)
	178*	(7)		7.8	(21)		41.7*	(7)
	7.4	(8)	*Rhizosolenia*			*Syracosphaera*		
Prototheca zopfii	.0704	(9)	*fragillissima*	8.27**	(22)	*elongata*	2.36	(7)
	263*	(9)		...			912*	(7)
	3.6	(9)		14	(22)	CRYPTOPHYCEAE		
Chlamydomonas			*Navicula pelliculosa*	.071	(7)	*Cryptomonas erosa* ...	1.84**	(32)
reinhardii	.123	(10)		66.1*	(7)		...	
	300	(11)	DINOPHYCEAE				19	(32)
BACILLARIOPHYCEAE			*Gonyaulax excavata*	21.2**	(23)			
Thalassiosira rotula	5.2**	(12)		...				
	...			7.9	(23)			
	8.4	(12)						
T. fluviatilis	3.29	(7)	*G. polyedra*	100	(7)	EUGLENOPHYTA		
	2,239*	(7)		81,280*	(7)	*Euglena gracilis*	2.42	(33)
	11.0	(13)	*Gymnodinium* 582	1.08**	(15)		3700	(33)
T. pseudonana	.116**	(14)		...			12.4	(33)
	...			15.9	(15)	ASCOMYCETES		
	3.86	(14)	*G. simplex*	.53**	(15)	*Schizosaccharo-*		
T. floridana	.53**	(15)		...		*myces pombe*	.03	(34)
	...			16.8	(15)		130	(35)
	7.1	(15)	*G. nelsoni*	71.5	(24)		3.5	(36)
T. eccentrica	26.1**	(15)		53,600	(25)	*Saccharomyces*		
	...		*G. breve*	50.8	(26)	*cerevisiae*	.03	(37)
	9.9	(15)		17,157	(26)		103	(37)
Skeletonema			*Scrippsiella*				2.03	(38)
costatum	.336	(7)	*sweeneyae*	15.1**	(15)	PROTOZOA		
	224*	(7)		...		*Amoeba dubia*	700	(39)
	4.5	(16)		25.1	(15)		950,000*	(39)
Ditylum			*Prorocentrum*			*A. proteus*	300	(39)
brightwellii	12.9	(7)	*micans*	11.0**	(15)		950,000*	(39)
	14,125*	(7)		...		*Trichomonas*		
	9.7	(17)		35.5	(15)	*gallinae*	.7	(4)
Coscinodiscus			*Procentrum micans*	21	(27)		296	(40)
asteromphalus	50	(18)		29,900	(27)	*T. vaginalis*	1.0	(4)
	165,600	(18)					3,533	(40)
	25.7	(18)						

NOTE.—The DNA content given is the G_1 value. For many species this was estimated from the average cellular DNA content of an asynchronously growing population by dividing by 2.0 (for dinoflagellates: Kim and Martin 1974; Allen et al. 1975) or by 1.4 (all other species: Cairns 1963). All doubling time values were derived from estimated maximum growth rates standardized to 23° C assuming a Q10 of 2.0 for maximum growth rate (Brock 1967; Eppley 1972; Goldman and Carpenter 1974). The number in parentheses following each value indicates the reference: (1) Myers and Graham 1971; (2) Prokop and Ricica 1968*a*; (3) Prokop and Ricica 1968*b*; (4) Sparrow et al. 1972; (5) Winokur 1948; (6) Setlik et al. 1972; (7) Holm-Hansen 1969; (8) Eppley and Sloan 1966; (9) Poyton 1973; (10) Chiang and Seuoka 1967; (11) Pickett-Heaps 1975; (12) Schöne 1972; (13) Laws and Bannister 1980; (14) Goldman and McCarthy 1978; (15) Chan 1978; (16) McAllister et al. 1964; (17) Paasche 1968; (18) Werner 1971; (19) Findlay 1972; (20) Thomas 1966; (21) Paasche 1968; (22) Ignatiades and Smayda 1970; (23) Yentsch et al. 1980; (24) Rizzo and Nooden 1973; (25) Mendiola et al. 1966; (26) Kim and Martin 1974; (27) Bursa 1959; (28) Weiler and Eppley 1979; (29) Rizzo and Nooden 1972; (30) Schiller 1933; (31) Mullin et al. 1966; (32) Morgan and Kalff 1979; (33) Cook 1963; (34) Mitchison and Creanor 1971; (35) Mitchison 1971; (36) Flury et al. 1974; (37) Gunge and Nakatomi 1972; (38) Leick 1968; (39) Friz 1968; (40) Kudo 1966.

* Cell volume estimated from dry weight or cell carbon content using conversion factors in Shuter (1978).

** DNA content estimated from cell volume using linear regression of measured DNA content on estimated cell volume for algal species in table 2 (r = 0.96, n = 20).