REFERENCES

Bauer, R.T. 1985. Diel and seasonal variation in species composition and abundance of caridean shrimps (Crustacea, Decapoda) from seagraass meadows on the north coast of Puerto Rico. **Bull. of Mar. Sci.** 36(1): 150-162.

Broekhoywen, C. 1935. The extremes in percentages of dissolved oxygen to which the fauna of a *Zostera* field in the tide zone at Nieuwediep can be exposed. Arch. Neeil. Zool. 1:339-346, cited by Phillips, R.C. The ecology of eelgrass meadows in the Pacific Northwest: A community profile, pp. 17. U.S. Fish Wildl. Serv. FWS/OBS - 84/24, 1984.

Brook, I.M. 1977. Trophic relationships in a seagrass community (*Thalassia testudinum*) in Card Sound, Florida. Fish diets in relation to macrobenthic and crytic faunal abundance. **Trans. Am. Fish. Soc.** 106(3): 219-229.

———, 1978. Comparative macrofaunal abundance in turtle grass (*Thalassia testudimun*) communities in south Florida characterized by high blade density. **Bull. Mar. Sci.** 28(1): 213-217.

Brouns, J.J.W.M. and Heijs, F.M.L. 1985. Tropical seagrass ecosystems in Papua New Guinea. A general account of the environment, marine flora and fauna. **Marine Biology** 88(2): 145-182.

Buesa, R.J. 1975. Population biomass and metabolic rates of marine angiosperms on the northwestern Ciban shelf. **Aquatic Botany** 1: 11-23.

Burkholder, P.R., Burkholder, L.M., and Rivero, J.A. 1959. Some chemical constituents of turtle grass, *Thalassia testudinum.* **Bull. Torrey Bot. Club** 86(2): 88-93, cited by Zieman, J.C. and Wetzel, R.G. Productivity in Seagrass: methods and Rates. In R.C. Phillips and C.P. McRoy (eds.), Handbook of seagrass biology: and ecosystem perspective, pp. 87-116. New York: Garland STPM Press, 1980.

Burrel, D.C., and J.R. Schubel. 1977. Seagrass ecosystem oceanography. In C.P. McRoy and C. Helfferich (eds.). **Seagrass ecosystem : A scientific perspective.** pp. 195-232. New York : Marcel Dekker.

Chou, L.M., de Silva, M.W.R.N., and White A.T. 1987. Coral reef algae and seagrasses. In T.E. Chua, L.M. Chou, and M.S.M. Sadorra (eds.), The coastal environmental profile of Brunei Darussalam: Resource assessment and management issues. **ICLARM Tech. Rep. 18**, pp. 43-57, cited by Fortes, M.D. Taxonomy and distribution of seagrasses in the ASEAN region. Paper pre sented at Advanced Training Course/Workshop on Seagrass Resources Research and Management, January 8-26, pp. 4-5. Manila, Philippines.

Coles, R.G., Lee Long, W.J., Squire, B.A., Squire, L.C. and Bibby, J.M. 1987. Distribution of seagrasses and associated juvenile commercial Penaeid prawns in North-eastern Queensland waters. **Aust. J. Mar. Freshw. Res.** 38: 103-119.

Conover, J.T. 1968. Importance of natural diffusion gradients and transport of substances related to benthic marine plant metabolism. **Bot. Mar.** 11(1-4): 1-9.

Dartnall, A.J. and Jones, M. 1986. A manual of survey methods for Living Resources in Coastal Areas. The Australian Institute of Marine Science.

den Hartog, C. 1970. The seagrasses of the world. North-Holland Publishing Co., Amsterdam. 275pp.

———, 1977. Structure, function and classification in seagrass communities. In C.P. McRoy and Helfferich (eds.), **Seagrass ecosystem : A scientific perspective**, pp.89-122. New York : Marcel Dekker.

———, 1980. Foreward. In R.C. Phillips and C.P. McRoy (eds.), **Handbook of seagrass biology : an ecosystem perspective**, pp. ix-xiii. New York : Garland STPM Press.

Dolar, M.L.L. 1989. A survey of the fishes and crustaceans in the seagrass bed of Norht Bais Bay, Negros oriental, Philippines. **Paper presented at First Symposium ASEAN-Australia Coastal Living Resources Project**, January 31- February 2, 23pp. Manila, Philippines.

Fonseca, M.S., Fisher, J.S., Zieman, J.C. and Thayer, G.W. 1982. Influence of the seagrass, *Zostera marina* L., on current flow. **Estuarine, Coastal and Shelf Science** 15: 351-364.

Fonseca, M.S. and Kenworthy, W.J. 1987. Effects of current on photosynthesis and distribution of seagrasses. Aquatic Botany 27: 59-78.

Fortes, M.D. 1986. **Taxonomy and ecology of Philippines seagrassess.** Ph.D Dissertation. University of The Philippines. 253pp.

Fortes, M.D. 1990. Taxonomy and distribution of seagrasses in the ASEAN region. **Paper presented at Advanced Training Course/ Workshop on Seagrass Resources Research and Management (SEAGRAM II)**, January 8-26, 38pp. Manila, Philippines.

Harlin, M.M. 1980. Seagrass epiphytes. In R.C. Phillips and C.P. McRoy (eds.), **Handbook of seagrass biology : an ecosystem perspective**, pp. 117-131. New York : Garland STPM Press.

Harrison, P.G. 1982. Comparative growth of *Zostera japonica* Aschers. and Graebn. and *Z. marina* L. under simulated intertidal and subtidal condition. **Aquatic Botany** 14: 373-379.

Heck, K.L.Jr. and Orth, R.J. 1980a. Structure components of eelgrass (*Zostera marina*) meadows in the lower **Chesapeake** Bay-Decapod Crustacea. **Estuarine** 3: 289-295.

Heck, K.L.Jr. and Orth, R.J. 1980b. Seagrass habitat : the role of habitat complexity, competetion and predation in structuring associated fish and macroinvertebrate assemblages. In V.S. Kennedy(ed.), **Estuarine perspective.** pp. 449-464. New York : Acadamic Press.

Heck, K.L. Jr. and Wetstone, Q.S. 1977. Habitat complexity and invertebrate species richness and abundance in tropical seagrass meadows. **Journal of Biogeography** 4: 135-142.

Hsu, L.H.L. and Chou, L.M. 1989. Seagrass communities in Singapore. **Paper presented at the First Southeast Asain Seagrass Resources Research and management Workshop**, January 17-22, 17 pp. Manila, Philippines.

Johnstone, I.M. 1978a. The ecology and distribution of Papua New Guinea seagrasses. I. Additions to the seagrass flora of Papua New Guinea. **Aquatic Botany** 5: 229-233.

———, 1978b. The ecology and distribution of Papua New Guinea seagrasses. II. The Fly Islands and Raboin Islands. **Aquatic Botany** 5: 235-243.

Kenworthy, W.J., Thayer, G.W. and Fonseca, M.S. 1988. The utiliztion of seagraass meadows by fishery organism. In D.D. Hook, W.H. Mckee, Jr., H.K. Smith, J. Gregory, V.G. Burrell, Jr., M.R. Devoe, R.E. Sojka, S. Gilbert, R. Banks, L.H. Stolzy, C. Brooks, T.D. Mathews and T.H. Shear (eds.), **The ecology and management of wetlands, Vol. I, Ecology of wetlands.** Oregon : Timber Press. 529 pp.

Kenworthy, W.J., Zieman, J.C. and Thayer, G.W. 1982. Evidence for the influence of seagrass on the benthic nitrogen cycle in a coastal plain estuary near Beaufort, North Carolina (USA). **Oecologia** 54: 152-158, cited by Thayer, G.W., Kenworthy, W.J. and Fonseca, M.S. The ecology of eelgrass meadows of the

Atlantic coast: a community profile, pp. 63-64 U.S. Fish wilds. Serv. FWS/OBS-84/02, 1984.

Kikuchi, T. 1966. An ecological study on animal communities of the *Zostera marina* belt in Tomioka Bay, Amakusa, Kyushu. **Publ. Amakusa. Mar. Biol. Lab.** Kyushu Univ. 1: 1-106.

———, 1974. Japanese contributions on consumer ecology in eelgrass (*Zostera marina* L.) beds, with special references to trophic relationships and resouces in shore fisheries. **Aquaculture** 4: 145-160.

———, 1980. Faunal relationships in temperate seagrass beds. In R.C. Phillips and C.P. McRoy (eds.), **Hand book of seagrass biology : an ecosystem perspective**, pp. 153-172. New York : Garland STPM Press.

Kikuchi, T. and Peres, J.M. 1977. Consumer ecology of seagrass beds. In C.P. McRoy and C. Helfferich (eds.), **Seagrass ecosystem : a scientific perspective**, pp. 147-193. New York : Marcel Dekker.

Klumpp, D.W. and van der Valk, A. 1984. Nutrition quality of seagrass (*Posidonia australis*) and *Heterozostera tasmanica*): comparison between species and stages of decomposion. **Marine Biology Letters** 5: 67-86.

Leumanomont, K. 1979. Algal flora of mangrove forests. **Third seminar on Mangrove Ecology**, Vol. 2, pp. 202-215. National Research Council of Thailand.

Lanyon, J. 1986. **Seagrass of the great barrier reef.** Great Berrier reef Marine Park Authority. Special Publication Series(3). 54 pp.

McMahan, C.A. 1968. Biomass and salinity tolerance of shoalgrass and manatee grass in Lower Laguna Madre, Texas. **J. Wildlife Mgt.** 32: 501-506.

McMillan, C. 1979. Differentation in response to chilling temperature among population of three marine spermatophytes, *Thalassia testudinum, Syringodium filifolium* and *Halodule wrightii.* **Am. J. Bot.** 66(7): 810-819.

McMillan, C., and Moseley, F.N. 1967, Salinily tolerances of the marine spermatophytes of Redfish Bay, Texas. **Ecology** 48: 503-506.

McRoy, C.P. and McMillan, C. 1977. Production ecology and physiology of seagrasses. In C.P. McRoy and C. Helfferich (eds.), **Seagrass Ecosystem : a scientific perspective**, pp. 53-81. New York : Marcel Dekker.

Menez, E.G., Phillips, R.C. and Calumpong, H.P. 1983. **Seagrass from the Philippines.** Smithsonion Contribution to the Marine Science. No. 21, 40 pp.

Meyer, C.E. 1982. **Zooplankton communities in Chesapeake Bay seagrass systems.** M.A. Thesis. College of William and Mary, Williamsburg, Va. 96pp., cited by Thater, G.W., Kenworthy, W.J., and Fonseca, M.S. The ecology of eelgrass meadows of the Atlantic

coast: A community profile, pp. 72-73. U.S. Fish wildl. Serv. FWS/OBS-84/02, 1984.

Middleton, M.J., Bell, J.D., Burchmore, J.J., Pollard, D.A. and Pease, B.C. 1984. Structural differences in the fish communities of *Zoster capriconi* and *Posdonia australis* seagrass meadows in Botany Bay, New South Wales. Aquat. Bot. 18: 89-109.

Mui, R.S. and Rajagopal, P. 1989. Seagrass of Malaysia. Paper presented at the First Southeast Asian Seagrass Resources Research and Management Workshop, January 17-22, 13pp. Manila, Philippines.

Nagle, J.S. 1968. Distribution of the epibiota of macroepibenthic plants. Contrib. Mar. Sci. 13: 15-144.

Nateekanjanalarp, S., Sudara, S. and Satumanatpan, S. 1990. Comparison of faunas associated within different type of seagrass beds at Koh Pha-Ngan and Koh Samui, Gulf of Thailand. Paper presented at Advanced Training Course/Workshop on seagrass Resources Research and Management (SEAGRAM II), January 8-26, 15pp. Manila, Philippines.

Nelson, W.G. 1979. Experimental studies of selective predation on amphipods : Consequences for amphipod distribution and abundance. J. Exp. Mar. Biol. Ecol. 38: 225-245.

Orth, R.J. 1973. Benthic infauna of eelgrass, *Zostera marina* beds. Chesapeake Sci. 14: 258-269.

Orth, R.J., and K.L. Heck, Jr. 1980. Structural components of eelgrass (*Zostera marina*) meadows in the lower Chesapeake Bay - fishes. **Estuaries** 3: 278-288.

Orth, R.J., Heck, L,L., and Montfrans, J.V. 1984. Faunal communities in seagrass beds: A reveiw of the influence of plant structure and prey characteristics on predator - prey relationship. **Estuaries** Vol.7, No.4A, pp. 339-350.

Paphavasit, N. 1981. **Marine ecology Laboratory.** Department of Marine Science, Faculty of Science, Chulalongkorn University. 134 pp. (in Thai).

Penhale, P.A. 1977. Macrophyte-epiphyte biomass and productivity in an eelgrass (*Zostera marina* L.) community. **J. Exp. Mar. Biol. Ecol.** Vol. 26:211-224.

Phillips, R.C. 1984. **The ecology of eelgrass meadows in the Pacific Northwest : A community profile.** U.S. Fish Wildl. Serv. FWS/OOB-84/24. 85 pp.

Phillips, R.C., McMillan, C. and Bridges, K.W. 1983. Phonology of eelgrass, *Zostera marina* L., along latitudinal gradients in North America. **Aquat. Bot.** 15: 145-156.

Poiner, I.R., Staples, D.J. and Kenyon, R. 1987. Seagrass communities of the Gulf of Garpentaria, Australia. **Aust. J. Mar. Freshw. Res.** 38: 121-131.

Poovachiranon, S. 1989. Survey on seagrass in the Andaman sea from Phuget to Satun provinces. **Final report of ASEAN-Australia**

Coastal Living Resources Project, submitted to Office of the National Environment Board. 34 pp.

Rasmussen, E. 1977. The nasting disease of eelgrass (Zostera marina) and its effect on environmental factors and fauna. In C.P. McRoy and C. Helfferich (eds.), seagrass ecosystems: a scientifec perspective. pp. 1-44. New York: Marcel Dekker.

Sand - Jensen, K. 1975. •Biomass, net production and growth dynamic in an eelgrass (Zostera marina L.) population in Vellerop Vig, Denmark. Ophelia 14: 185-201, Cited by Zieman, J.C. and Wetzel, R.G. Productivity in seagrasses : methods and rates. In R.C. Phillips and C.P. McRoy (eds.), Handbook of seagrass biology: and ecosystem perspective, pp. 87-116. New York: Garland STPM Press, 1980.

Satumanatpan, S. 1990. Study on the species composition and abundance of seagrass fish fauna at Khung Krabene Bay, Chanthaburi Province, Thailand. Senior Project. Dept. of Marine Science. Chulalongkorn University. 35pp.

Shafeei, S.B. 1990. A proposal for the management and utilization of seagrasses in Malaysia. Paper presented at Advanced Training Course/Workshop on Seagrass Resources Research and Management (SEAGRAM II), January 8-26, 6pp. Manila, Philippines.

Simenstad, C.A., Kinney, V.J., and Miller, B.S. 1980. Epibenthic Zooplankton assemblages at selected sites along thd strait of Juan de Fuca. NOAA/MESA Analysis Program. Boulder, Colorado. Univ. Washington Fish. Res. Inst. 73pp., cited by Phillips,

R.C. The ecology of eelgrass meadows in the Pacific Northwest: A community profile, pp. 39. U.S. Fish Wildl. Serv. FWS/OBS-84/24, 1984.

Srimanobhas, V. 1980. Some marine plants of Koh Kram, Chonburi Province. Marine Fisheries Division. Department of Fisheries, Min of Agriculture and Co-operative Bangkok Thailand. No.22(1)1, 7pp.

Sieg, J. 1988. Tanaidacea. In R.P. Higgins and H. Thiel (eds.), **Introduction to the study of meiofauna.** pp.402-408. Washington, D.C. : Smithsonian Institution Press.

Soegiarto, A. and N. Polunin. 1982. The marine environment of Indonesia. **A report prepared for the Government of the Republic Indonesia, under the sponsorship of IUCN and WWF.**

Stoner, A.W. 1980a. The role of seagrass biomass in the organization of benthic macrofaunal assemblages. **Bull. Mar. Sci.** 30(3): 537-551.

Stoner, A.W. 1980b. Abundance, Reproductive seasonality and habitat preferences of amphipod crustaceans in seagrass meadows of Apalachee Bay, Florida. **Contrib. Mar. Sci.**, Univ. of Texas. 23: 63-77.

Sudara, S. and Nateekanjanalarp, S. 1989. Seagrass community in the Gulf of Thailand. **Final report of ASEAN-Australia Coastal Living Resources Project**, submitted to office of the National Environment Board. 68 pp.

Sudara, S., Nateekanjanalarp, S., Thamrongnavasawat, T., Satumanatpan, S., Chindonnirat, W. and Sookchanuluk, C. 1989. Survey of fauna associated with the seagrass community in Khung Krabene Bay, Chanthaburi Province, Thailand. **Paper presented at First Symposium of ASEAN-Australia Coastal Living Resources Project,** January 31-February 2, 11pp. Manila, Philippines.

Sudara, S., Thamrongnavasawat, T. and Patimanukasaem, O. 1989b. Tourism economic gain in the vicinity of Samui and Pha-Ngan Islands. **Paper presented at First symposium of ASEAN-Australia Coastal Living Resources Project,** January 31-February 2, 6 pp. Manila, Philippines.

Summerson, H.C., and Peterson, C.H. 1984. The role of predation in organizing benthic communities in and around a temperate zone seagrass bed. **Mar. Ecol. Prog. Ser.** 15: 63-77.

Talbot, M.M. and Bate, G.C. 1987. The distribution and biomass of the seagrass *Zostera capensis* in a warm-temperate estuary. **Botanica Marina** Vol. 30: 91-99.

Tantigul, S. 1986. **The fisheries biology of the blue swimming crab *Portunus pelagicus* Linnaeus in the Gulf of Thailand.** Invertebrate section, Marine Fsheries Division. Department of Fisheries, Min of Agricultural and Co-opertive Bangkok Thailand. 67pp.

Thayer, G.W., Fonseca, M.S., Kenworthy, W.J. Colby, D.R. and Currin, C.A. 1989. Fishery habitat restoration : A NMFS-COE agreement. In O.T. Magoon, H. Converse, D. Miner, L.T. Tobin, and

D. Clark (eds.), Coastal zone' 89, Vol. 2. **Proceedings of the sixth symposium on coastal and ocean management**, July 11-14, pp. 1254-1267. Charloston, SC. New York : American Society of Civil Engineers.

Thayer, G.W., Kenworthy, W.J. and Fonseca, M.S. 1984. **The ecology of eelgrass meadows of the Atlantic coast: a community profile.** U.S. Fish Wildi. Serv. FWS/OBS-84/102. 147 pp.

Thayer, G.W., Wolf, D.A. and Williams, R.B. 1975. The impact of man on seagrass systems. **Am. Sci.** 63: 288-296.

Yokel, B.J. 1975. Rookery Bay land use studies: environmental planning strategies for the development of a mangrove shoreline, No. 5. **Estuarine biology.** Conservation Foundation, Washington, D.C., cited by Zieman, J.C. The ecology of the seagrasses of South Florida: a community profile, pp.50. U.S. Fish and Wildlife Services, Office of Biological Services, Washington, D.C. FWS/OBS-82/25, 1982.

Zieman, J.C. 1972. Origin of Circular beds of *Thalassia* (Spermatophyta : Hydrocharitaceae) in South Biscayne Bay, Florida and their relationship to mangrove hammocks. **Bull. Mar. Sci.** 22(3): 559-574.

———, 1982. **The ecology of the seagrasses of south Florida : a community profile. U.S. Fish and Wildlife Services,** office of Biological Services, Washington, D.C. FWS/OBS-82/25. 158 pp.

Zieman, J.C. and Wetzel, R.G. 1980. Productivity in seagrasses : methods and rates. In R.C. Phillips and C.P. McRoy (eds.), Hand book of seagrass biology : an ecosystem perspective, pp. 87-116. New York : Garland STPM Press.

Appendix 1 Average values (x), variance (s), standard deviation (SD) of percent cover and total biomass of seagrasses at Yai Point.

Sources	N	Per ent Cover			Total Biomass		
		x	S	SD	x	S	SD
All seasons, all species	16	31.56	349.06	18.86	5.10	15.24	3.90
All seasons, *Halodule uninervis*	13	27.31	202.56	14.23	5.63	15.03	3.88
All seasons, *Halophila spp.*	11	13.64	120.45	10.98	0.77	0.34	0.58
Summer, all species	8	41.25	412.50	20.31	4.19	7.43	2.73
Summer, *Halodule uninervis*	6	35.83	244.17	15.63	4.79	7.57	2.75
Summer, *Halophila spp.*	5	23.00	95.00	9.75	0.96	0.52	0.72
Winter, all species	8	21.88	120.98	11.00	6.01	23.34	4.83
Winter, *Halodule uninervis*	7	20.00	66.67	8.16	6.36	22.43	4.76
Winter, *Halophila spp.*	6	5.83	4.17	2.04	0.60	0.19	0.44

Appendix 2 Average value (x), variance (S), standard deviation (SD) of percent cover and total biomass of seagrasses at Hin Com Point.

Sources	N	Percent Cover			Total Biomass		
		x	S	SD	x	S	SD
Summer, *Halophila spp.*	5	28	270	16.43	1.02	0.99	1

Appendix 3 Average value (x), variance (S), standard deviation (SD) of percent cover and total biomass of seagrasses at Chon Khram Point.

Sources	N	Percent Cover			Total Biomass		
		x	S	SD	x	S	SD
All seasons, all species	43	50.58	857.39	29.28	40.92	1387.69	37.25
All seasons, *Halodule uninervis*	38	54.21	627.74	25.05	45.89	1329.56	36.46
All seasons, *Halophila spp.*	15	7.67	28.10	5.30	1.12	3.91	1.98
Summer, all species	21	59.52	622.26	24.95	38.98	1039.38	32.24
Summer, *Halodule uninervis*	19	63.16	289.47	17.01	42.89	965.31	51.07
Summer, *Halophila spp.*	5	10.00	37.50	6.12	0.91	1.75	1.32
Rainy , all species	11	45.00	1155.00	33.99	53.75	2795.13	52.87
Rainy , *Halodule uninervis*	9	49.94	1034.33	32.16	64.62	2726.37	52.21
Rainy , *Halophila spp.*	7	7.14	32.14	5.67	1.39	7.31	2.70
Winter, all species	11	39.09	854.09	29.22	31.80	673.89	25.96
Winter, *Halodule uninervis*	10	41.50	711.39	26.67	34.72	603.82	24.57
Winter, *Halophila spp.*	3	5.00	0	0	1.60	1.85	1.36

Appendix 4 Average value (x), variance (S), standard deviation (SD) of percent cover and total biomas *Enhalus acoroid* at Chaweng Beach.

Sources	N	Percent cover			Total biomass		
		x	S	SD	x	S	SD
All season	30	46.45	436.47	20.89	385.38	71503.62	267.40
Summer	10	56.5	366.94	19.16	645.26	74639.93	273.20
Rainy	10	40.0	377.78	19.44	229.84	8758.41	93.59
Winter	10	43.0	490.0	22.14	281.03	32979.93	181.60

Appendix 5 T TEST for significant difference of biomass between seasons at Yai Point.

Source	T Value	T from Table
Yai Point		
Summer and winter	0.9289	2.145

* Significant at = 0.05

Appendix 6 T TEST for significant difference of biomass between seasons at Chaweng Beach.

Source	T Value	T from Table
Chaweng Beach		
Summer and rainy	4.5489 *	2.179
Summer and winter	3.511 *	2.101
winter and rainy	0.7923	2.101

* Significant at = 0.05

Appendix 7 One Way Analysis of variance of biomass between seasons at Chon Khram Point.

SOURCE	F Value	F Table
Summer, rainy and winter	1.1534	3.26

Appendix 8 Environmental factors in the seagrass bed at Yai Point, 23/04/1988 (summer).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
10	6.1	6.50	27	30	8.24	0.250	0.385
20	6.3	6.55	28	30	8.24	0.450	0.516
30	6.5	6.60	28	30	8.24	0.485	0.459
40	7.0	6.80	27	30	8.24	0.515	0.330
50	7.2	6.75	27	30	8.24	0.500	0.481
60	7.5	6.80	27	30	8.23	0.375	0.553
70	7.0	6.90	27	30	8.23	0.523	0.824

Appendix 9 Environmental factors in the seagrass bed at Yai Point, 08/01/1989 (winter).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	5.0	7.00	27	30	8.27	0.316	1.185
10	6.0	7.00	27	30	8.26	0.230	0.491
20	5.0	7.10	28	30	8.25	0.364	0.391
30	6.0	7.00	28	30	8.26	0.498	2.473
40	7.0	7.20	28	30	8.27	0.550	0.320
50	7.0	7.15	27	30	8.25	0.530	0.430
60	7.0	7.05	28	30	8.25	0.550	0.554
70	6.8	7.00	27	30	8.26	0.515	0.816
80	7.0	7.00	27	30	8.25	0.543	0.698

Appendix 10 Environmental factors in the seagrass bed at Chon Khram Point, 24/04/1988 (summer).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	2.5	7.5	28.0	32	8.10	0.500	1.250
10	2.5	7.55	28.5	32	8.15	0.550	1.342
20	3.0	7.4	28.5	32	8.15	0.885	1.232
30	3.0	7.4	28.5	32	8.15	0.430	1.121
40	3.0	7.5	28.5	32	8.15	0.380	1.212
50	3.0	7.6	28.5	32	8.15	0.520	1.487
60	3.0	7.4	28.0	32	8.14	0.374	1.289
70	2.5	7.6	28.5	32	8.00	0.850	1.281
80	3.0	7.4	28.5	32	8.13	0.380	1.281
90	3.2	7.5	28.5	32	8.12	0.420	1.543
95	3.2	7.5	28.0	32	8.11	0.550	1.422
100	2.5	7.6	28.0	32	8.10	0.330	1.673
105	2.5	7.6	28.5	32	8.15	0.450	1.212
110	2.5	7.5	28.5	32	8.13	0.462	1.119
115	2.5	7.6	28.0	32	8.15	0.385	1.425
120	2.5	7.7	28.0	32	8.15	0.352	1.428
130	2.25	7.7	28.5	32	8.15	0.413	1.142
135	2.5	7.7	28.5	32	8.15	0.495	1.223
140	2.5	7.5	28.5	32	8.12	0.340	1.512
145	2.5	7.5	28.0	32	8.13	0.535	1.113
150	2.5	7.5	28.0	32	8.10	0.485	1.180

Appendix 11 Environmental factors in the seagrass bed at Chon Khram Point, 23/09/1988, (rainy).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	2.52	7.6	28.0	32	8.12	0.500	1.968
10	3.0	7.0	28.5	32	8.14	0.500	1.802
20	3.0	7.1	28.5	32	8.15	0.350	1.557
30	3.0	7.2	28.3	32	8.13	0.430	1.831
40	3.2	7.3	28.0	32	8.11	0.530	0.805
50	3.1	7.4	28.0	32	8.12	0.516	1.918
60	3.1	7.5	28.0	32	8.15	0.850	1.842
70	3.2	7.0	28.0	32	8.13	0.400	1.609
80	3.2	7.1	28.0	32	8.14	0.350	1.463
90	3.2	7.2	28.0	32	8.14	0.340	1.590
100	2.55	7.4	28.0	32	8.15	0.510	2.483

Appendix 12 Environmental factors in the seagrass bed at Chon Khram Point, 08/01/1989 (winter).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	2.55	7.3	26.5	30	8.16	0.49	1.718
10	2.8	7.3	26.0	30	8.14	0.48	1.921
20	3.0	7.5	26.4	30	8.14	0.33	1.454
30	3.0	7.4	26.5	30	8.13	0.45	2.083
40	3.0	7.4	26.5	30	8.15	0.35	1.845
50	3.0	7.0	26.0	30	8.12	0.38	1.333
60	3.0	7.0	26.0	30	8.15	0.88	1.925
70	3.0	7.0	26.0	30	8.13	0.55	1.843
80	3.2	7.4	26.5	30	8.11	0.43	1.796
90	3.15	7.4	26.5	30	8.15	0.38	1.282
100	3.2	7.0	26.5	30	8.16	0.40	2.028

Appendix 13 Environmental factors in the seagrass bed at Hin Com Point, 24/04/1988 (summer).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
10	4.2	6.0	27.0	30	8.13	0.351	0.148
20	4.3	6.1	27.0	30	8.14	0.482	0.252
30	4.5	6.5	27.0	30	8.12	0.513	0.313
40	4.2	6.2	27.0	30	8.11	0.429	0.212
50	4.4	6.4	27.0	30	8.00	0.328	0.159

Appendix 14 Environmental factors in the seagrass bed at Chaweng Beach, 25/04/1988 (summer).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	0.700	8.00	28.5	33	8.13	1.050	0.982
10	0.700	8.00	28.5	33	8.13	0.850	0.732
20	0.700	8.10	28.5	33	8.13	1.410	1.121
30	0.550	8.30	28.5	33	8.13	1.320	1.532
40	0.600	8.40	28.5	33	8.13	1.120	1.415
50	0.650	8.45	28.5	33	8.14	0.832	1.541
60	0.660	8.50	28.0	33	8.13	0.750	0.972
70	0.645	8.40	28.0	33	8.13	0.950	0.948
80	0.615	8.30	28.5	33	8.14	1.131	0.952
90	0.600	8.20	28.0	33	8.14	1.250	1.182

Appendix 15 Environmental factors in the seagrass bed at Chaweng Beach, 22/09/1988 (rainy).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	0.80	8.4	28.5	33	8.16	1.520	1.643
10	0.75	8.2	28.5	33	8.16	3.430	2.034
20	0.75	8.4	28.3	33	8.13	0.950	1.492
30	0.70	8.9	28.3	33	8.14	0.880	1.539
40	0.70	8.6	28.2	33	8.15	0.725	1.604
50	0.74	8.2	28.2	33	8.16	0.878	1.634
60	0.63	8.8	28.2	33	8.15	0.812	0.578
70	0.63	8.6	28.2	33	8.13	0.855	0.642
80	0.63	8.6	28.3	33	8.13	0.430	0.914
90	0.64	8.6	28.3	33	8.14	0.440	1.113

Appendix 16 Environmental factors in the seagrass bed at Chaweng Beach, 08/01/1989 (winter).

Position (m.)	Depth (m.)	DO (ppm.)	T (C)	S (ppt.)	pH	Grian Size (mm.)	Oxidizable organic content (%)
0	0.75	8.0	26	33	8.15	0.600	0.751
10	0.74	8.1	26	33	8.18	1.860	0.197
20	0.75	8.3	26	33	8.08	1.300	1.273
30	0.90	8.5	26	33	8.15	0.666	0.607
40	0.80	8.4	26	33	8.14	0.750	0.976
50	0.75	8.2	26	33	8.21	1.420	1.142
60	0.70	8.1	26	33	8.16	1.100	0.735
70	0.65	8.3	26	33	8.15	0.600	1.071
80	0.74	8.4	26	33	8.16	0.520	0.881
90	0.75	8.3	26	33	8.14	0.510	0.880

Appendix 17 Value of Coefficient determination (R-square) between biomass with some environmental parameters at four sites of Koh Samui.

Sources	Depth (m.)	DO. (ppm.)	Temp. ('c)	Salinity (ppt.)	pH	Grain size (mm.)	Oxidized organic (%)
Yai Point							
Summer	0.137	0.0001	0.128	-	0.004	0.143	0.060
Winter	0.797	0.069	0.001	-	0.083	0.533	0.077
Chon Khram Point							
Summer	0.112	0.051	0.084	-	0.001	0.129	0.078
Rain	0.002	0.002	0.064	-	0.027	0.018	0.004
Winter	0.118	0.002	0.088	-	0.016	0.194	0.002
Hin Com Point							
Summer	0.251	0.005	-	-	0.0002	0.019	0.014
Chaweng Beach							
Summer	0.001	0.080	0.101	-	0.050	0.266	0.057
Rain	0.514	0.185	0.061	-	0.038	0.332	0.363
Winter	0.001	0.001	-	-	0.153	0.029	0.135

Plate 1 *Halodule uninervis* (wide-leaved form) at Chon Khram Point, Koh Samui, 23/04/1988.

Plate 2 *Halphila ovalis* at Yai Point, Koh Samui, 23/04/1988.

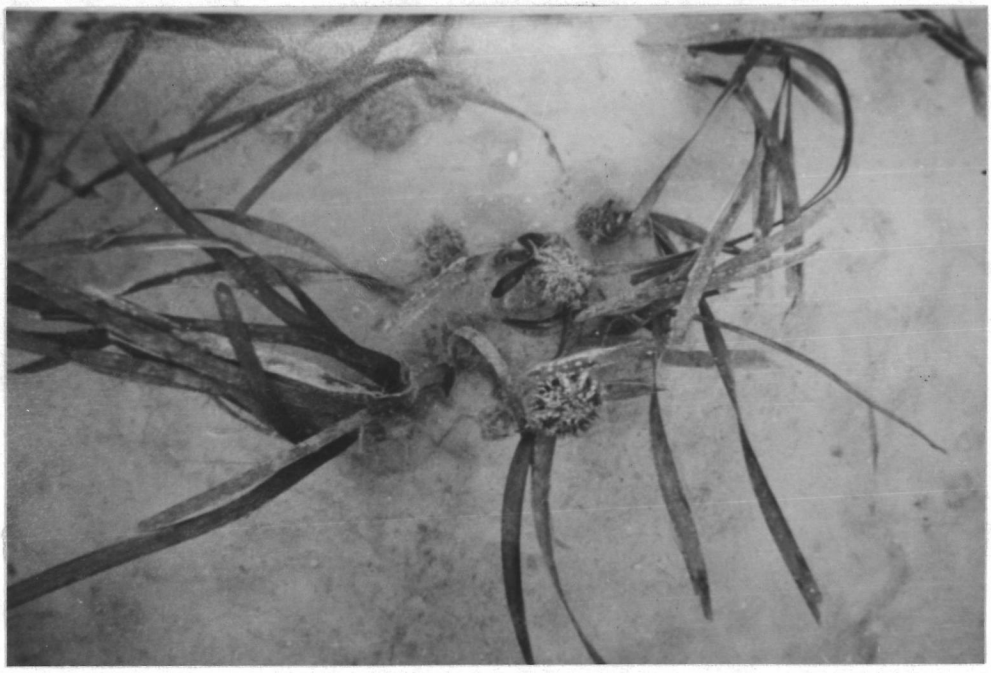
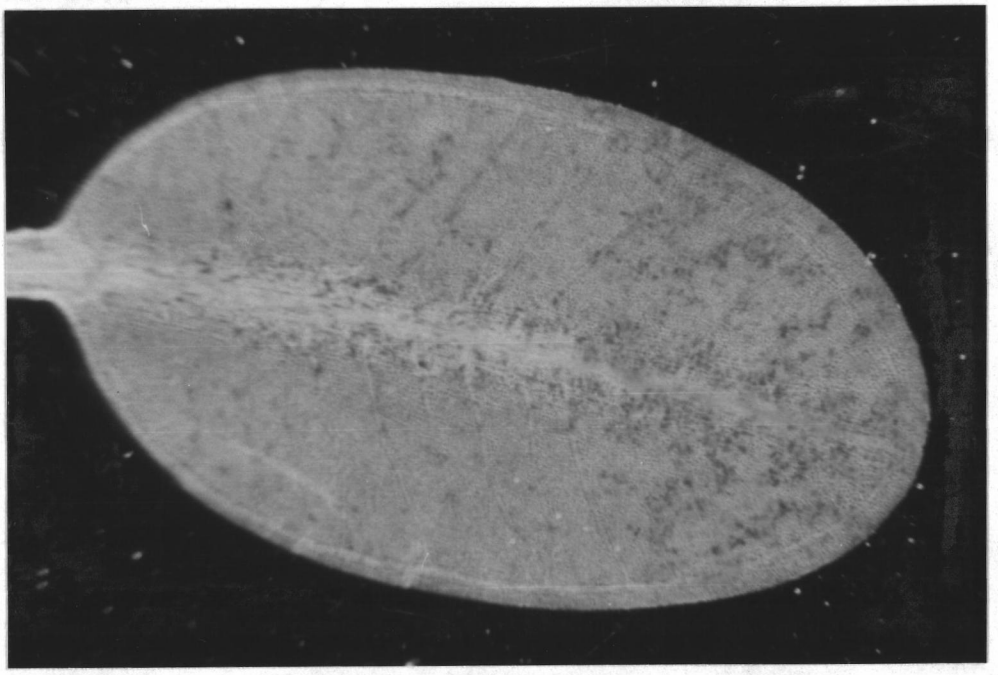
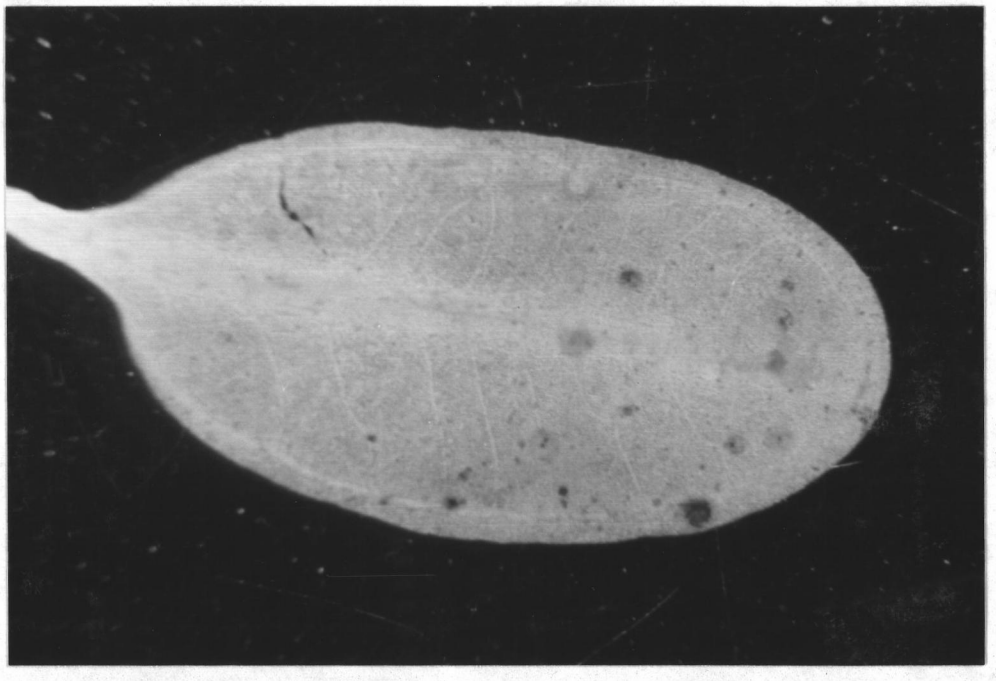


Plate 3 Some fruits of *Enhalus acoroides* found at Chaweng Beach, Koh Samui, 10/05/1989.

Plate 4 The developmental stage flowers of *E. acoroides* at Chaweng Beach, Koh Samui.

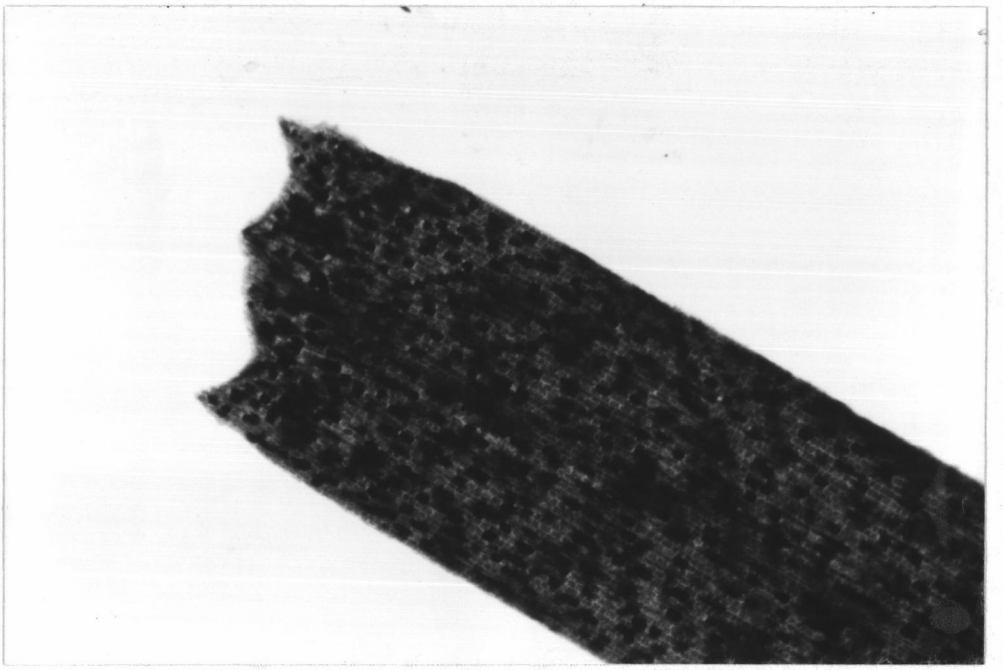


A

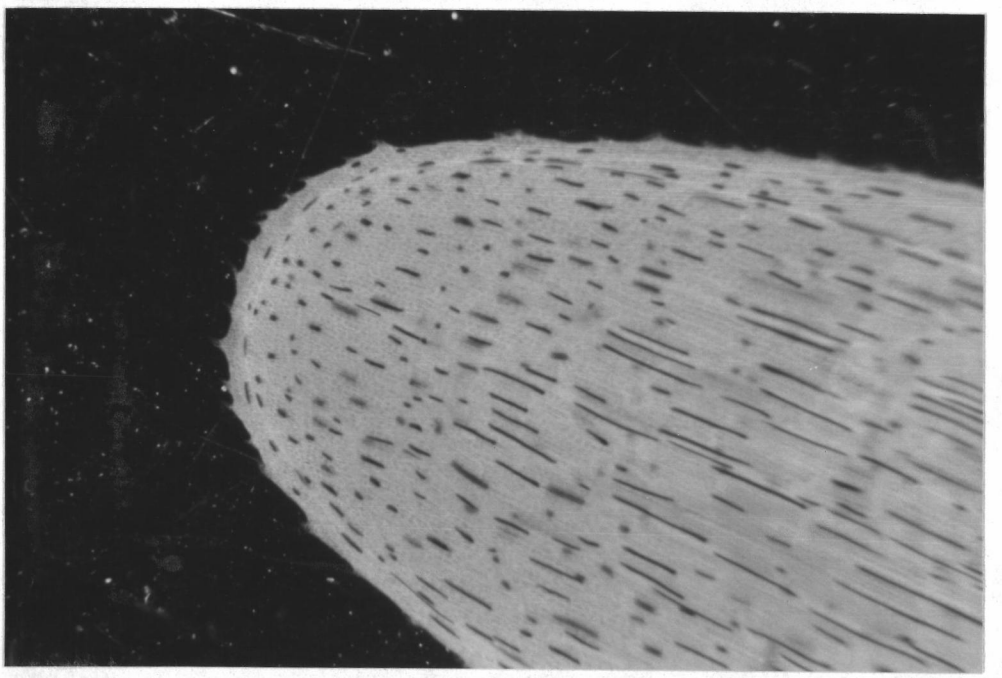


B

Plate 5 Photomicrographs of the leaf tips of seagrasses magnification x7. A : *Halophila ovalis*, B : *H .ovata*.



A



B

Plate 6 Photomicrographs of the leaf tips of seagrasses

A : *Halodule uninervis* magnification x42

B : *Enhalus acoroides* magnification x7

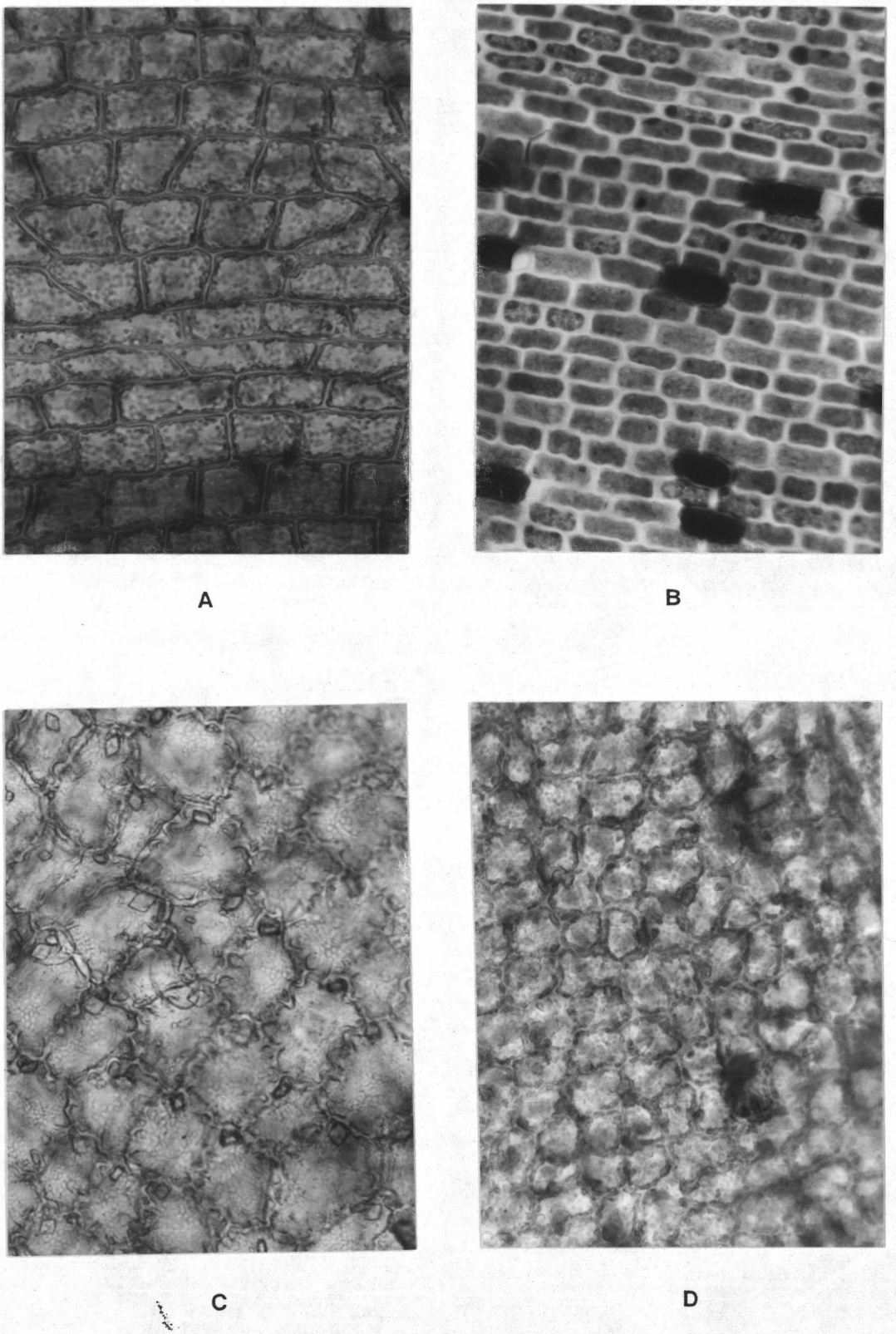


Plate 7 Photomicrographs of the leaf tips of seagrasses magnification x210. A : *E. acoroides*, B : *H. uninervis*, C : *H. ovalis* and D : *H. ovata*

VITA

Ms. Suvaluck Nateekanjanalarp was born in bangkok on May 29, 1963. She graduated with the degree of Bachelor of Science from Department of Marine Science, Chulalongkorn University, in 1986. After graduation, she came to study Marine Biology in the Department of Marine Science, Chulalongkorn University.