Spinifici-Scaevoletea sericeae, a new vegetation class for psammophytic dune vegetation in Thailand.

S. PIGNATTI

Dipartimento di Biologia Vegetale - Università di Roma «La Sapienza» I-00185 ROMA

ABSTRACT. - This is a short account on the coastal dune vegetation of the Gulf of Siam in Thailand. Vegetation is mainly composed by succulent creeping plants with herbaceous habit as to *Canavalia maritima* (Papilionaceae) and *Ipomoea pes-caprae* (Convolvulaceae) and the robust stoloniferous grass *Spinifex littoreus*, the last having an important function for the formation of coastal dunes.

KEY WORDS - Coastal vegetation, litoral dunes, Thailand, psammophytes.

The Gulf of Siam is the North-western portion of the South Chinese Sea, and their coasts belong to Thailand and, in a minor part, to Cambodia. The gulf receives the Menam river and has estuarine conditions: shallow water, often brackish, rich on sediment and turbid; consequently there is a strong deposition of sand and mud along the shore line. The study area is at about 11° North latitude and has equatorial climate: average yearly temperature of 28° with ca. 1500 mm rainfall.

The vegetation has been investigated during a visit in September 1988. Here some data from the Ban Phé coast are summarized, where I had the opportunity of carrying out some ecophysiological measures (Pignatti S., 1997). I thank prof. Santisuk Thawachai (Bangkok) for fruitful discussion and his help in the identification of plant material. Tab. 1 consists of six relevés carried out along two lines perpendicular to the shore, and forming a gradient from the coast to the interior. Two communities can be clearly recognized, with the dominance of *Ipomoea pes-caprae* (rel. 1-3) and of *Spinifex littoreus* (rel. 4-6).

The *Ipomoea* community is the pioneer on flat surfaces near the shore and mostly consists only of two species. The substrate is sandy-muddy, with sensible accumulation of salinity, due to aerosol caused by waves.

The *Spinifex* community is following in the inner belt, at some distance from the sea. The substrate is sandy and in some places wind produces small dunes on the bunch of *Spinifex:* in general these are not higher than 5-10 dm; larger dunes seem not to occur, at least in this region. Vegetation is composed by a richer flora (8 species in average).

The further succession is given by a shrub community dominated by *Scaevola taccada*, with *Pandanus odoratissimus* and *Borassus flabellifer* where halophytes and psammophytes are almost absent. The coastal plain is densely cultivated and

TABLE 1

	1	2	3	4	5	6
distance from the shore m	7	10	15	10	20	30
elevation over sea level m	2.5	2.5	2.5	3.0	2.5	2.5
vegetation cover %	70	80	95	100	90	95
surface in m^2	25	25	25	25	25	25
Ipomoea pes-caprae	3.4	4.5	4.5	1.1	1.2	+
Canavalia maritima	2.2	1.1	1.1	1.1	1.1	1.1
Spinifex littoreus				4.5	2.3	3.4
Cassytha filiformis				+	2.3	1.1
Phyllanthus sp.				+	2.3	1.1
Wedelia biflora				+	+	+
Thouarea involuta						1.2
Fimbristylis sp.				+	+	+
Sporobolus arenarius			(+)			
Dactyloctaenium aegyptium				+		1.1
Carex kobomugi	1.1					
Sterculiaceae (unidentif.)					1.1	
Scirpus cfr. *grossus*					+	

natural and semi-natural forest types are lacking; the only woodland in the surroundings is composed by groups of planted *Casuarina.*

The landscape aspect is recalling the dunes along the coasts of Europe and the Mediterranean, and also vegetation has a similar aspect with *Spinifex* at the place of *Ammophila*; the main ecological factors are almost the same. Species composition on the contrary is completely different, with the only exception of *Sporobolus pungens*, which is widespread as a tropical and subtropical psammophyte.

Communities of the dunes with dominance of *Spinifex littoreus* are indicated for India (Rao et Meher-Homji, 1993), Thailand (Pignatti S., 1997), Java (Hardjosuwarno & Hadisumarno, 1993) and the Ryu Kyu Archipelago (Miyawaki & Suzuki, 1976). A convergent vegetation with the same ecology and vicariant character species is *Spinifici-Scaevoletea crassifoliae* described for the coasts of the Australian continent (Pignatti E. & S., 1997), characterized by *Spinifex longifolius, S. hirsutus, Scaevola crassifolia* and others. *S. littoreus* occurs in W. Australia, but is relatively rare; the other species observed in Thailand are not existent in Australia. The only described association is *Glehnio littoralis-Spinificetum littorei* from the Ryukyu Islands, which following Miyawaky & Suzuki (1993) belongs to the class *Glehnietea littoralis.* This class is based on species of the warm temperate and subtropical part of Japan, and distinctly different from the equatorial vegetation of the thailandese coasts. Consequently it can be proposed that dune vegetation with *Spinifex littoreus* may compose a distinct vegetation class with endemic distribution.

As probable character species the following ones can be proposed: *Spinifex littoreus, Canavalia maritima, Dactyloctaenium aegyptium, Scaevola sericea*, vicariant of *S. plumieri* (E. Africa) and *S. crassifolia* (W. Australia) is widespread along the coasts of the Indian Ocean.

Syntaxonomical sketch

Spinifici-Scaevoletea sericeae cl. nov.

Canavalietalia maritimae ord. nov.

Canavalion maritimae foed. nov.

Ipomoea pes-caprae community
Spinifex littoreus-Canavalia maritima community

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