

Proposed S.Charoenpong, 1970  
Revised by :  
P. Vijarnsorn and staffs, 1988  
W. Sirichuaychoo, 2004

## RANONG SERIES

Field Symbol: Rg

**Distribution:** Occupies moderate extent in Peninsular Thailand.

**Setting:** Ranong soils are derived from coarse grain clastic rocks namely sandstone, quartzite or other equivalent rocks and occurred on denudation surface. Relief is undulating to hilly. Slope ranges from 5 to 35 percent. The climate is Tropical Rain Forest (Koppen 'Af') or Tropical Monsoon (Koppen 'Am'). Average annual air temperature is from 26 °C to 28°C. Average annual precipitation more than 1,800 mm

**Drainage, Permeability and Surface Runoff:** Drainage is well drained, permeability is estimated to be rapid and surface runoff is estimated to be rapid. Ground water level falls below 2 m throughout the year.

**Vegetation and Land Use:** Originally, occupied by Tropical Evergreen Forest but many areas have been cleared for para rubber growing. If there is no landuse after land clearing, secondary scrub forest and native grasses are commonly developed.

**Characteristic Profile Features:** Ranong series is a member of the loamy-skeletal, mixed, semiactive, acid, isohyperthermic Lithic Udorthents (soil taxonomy, 2003). They are shallow or very shallow soils to bed rocks and are characterized by a dark brown or dark yellowish brown sandy loam surface or A horizon overlying a strong brown grading to yellowish red very gravelly loam or very gravelly sandy clay loam AC or C horizon. Most gravel are quartzite or sandstone fragments. This inturn overlies a layer of bedrock (quartzite and/or sandstone or quartzitic sandstone) which is generally found within 50 cm of the soil surface. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5 and commonly decreases with depth.

**Typifying Pedon:** Ranong sandy loam - Scrub forest, from Phetkasem road side at km 495<sup>th</sup> Amphoe Muang, Changwat Chumphon, 10 to 16 percent slopes.

**Profile Code Number:** S-58/105, described by P. Vijarnsorn, 31 October 1974 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
A	0-8	Dark grayish brown (10YR4/2) sandy loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and nonplastic; plentiful fine roots; very strongly acid (field pH 5.0); clear wavy boundary.
AC	8-20	Mixed brown (10YR5/3) and strong brown (7.5YR5/6-8) gravelly sandy loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; few fine roots; gravels composed of sandstone and quartzite fragments about 30% by volume of the soil matrix; very strongly acid (field pH 5.0); clear wavy boundary.
C	20-45	Yellowish red (5YR5/6) very gravelly sandy clay loam; gravels composed of sandstone and quartzite fragments about 80% by volume of the soil matrix; very strongly acid (field pH 5.0); gradual broken boundary.
R	45-120	Layer of fresh bed rock which are quartzitic sandstone.

### Type Location:

Name of province, Changwat Ranong.

### Range of Profile Features:

The surface or A horizon ranges from 5 to 15 cm in thickness and has 10YR or 7.5YR hues, values 3 to 4 and chromas 3 to 4 in. The structure is weak fine and medium subangular blocky. Very strongly acid to strongly acid, reaction ranges from 5.0 to 5.5.

The AC or C horizon has 7.5YR grading to 5YR hues moist, values 5 or 6 and chromas 6 or 8. Rock fragments commonly composed of more than 50 percent of the soil matrix. The structure is generally undescribed. Very strongly acid, reaction ranges from 4.5 to 5.0.

The R layer is commonly found within 50 cm of the soil surface.

### Similar Soil Series:

Phato series (Pto): loamy-skeletal, mixed, semiactive, isohyperthermic Hapludults, thin argillic B horizon and R horizon occurs below 50 cm of the surface.

Tha Yang series (Ty): loamy-skeletal, siliceous, isohyperthermic Kanhaplic Haplustults, ustic moisture regime.

### Principle Associated Soils:

These include Phato series occurring on footslope.

### ANALYSIS RESULTS (oven dry basis)

Profile code No.: S-58/105

Soil series: Ranong series (Rg)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)								Texture		pH		CaCO <sub>3</sub> %	P, mg kg <sup>-1</sup> Bray 2	K, mg kg <sup>-1</sup> NH <sub>4</sub> OAc
			USDA grading			Sand-fraction grading					Lab	Field	1:1 water	1:1 KCl			
			sand	silt	clay	vc	c	m	f	vf	result	estim <sup>n</sup>					
Pc-1630	0-8	A	65.0	31.5	3.5						sl	sl	5.6	4.9	0.9	2.0	126
Pc-1631	8-20	AC	57.0	32.5	10.5						sl	gsl	5.6	5.0	0.6	1.7	76
Pc-1632	20-45	C	47.0	26.5	26.5						scl	vg.scl	5.1	4.0	0.9	1.4	82
Pc-1633	45-120	R	-	-	-						-	-	-	-	-	-	-

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol <sub>(+)</sub> kg <sup>-1</sup> )								Base satur <sup>n</sup> (%)		ECEC cmol <sub>(+)</sub> kg <sup>-1</sup> (B+D)	Al KCl extr. cmol <sub>(+)</sub> kg <sup>-1</sup> (D)	Electrical conduct <sup>y</sup> (ECx10 <sup>6</sup> ) dS m <sup>-1</sup>	
				Ca Mg K Na				SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH <sub>4</sub> OAc (C)	CEC 100g Clay	B/Cx100				(Bx100)/(B+A)
				Ca	Mg	K	Na										
0-8	3.4	3.23		5.30	1.50	0.30	0.20	7.30	10.60	17.90	11.0	314.3	66	41		135	
8-20	1.6	1.56		2.70	0.90	0.20	0.10	3.90	7.50	11.40	5.1	48.6	76	34		77	
20-45	3.4	0.54		0.80	0.60	0.20	0.20	1.80	12.50	14.30	8.6	32.5	21	13		47	
45-120	-	-		-	-	-	-	-	-	-	-	-	-	-		-	

Surveyor: P. Vijarnsorn

Date: Oct. 31, 1974

Reported by: W. Sirichuaychoo

Date: Nov. 24, 1998