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## NOTE ON THE VERNACULAR NAMES OF THE SOILS OF THE SUDAN AND SENEGAL

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In French West Africa, especially in the Sudan zone (French Sudan and Senegal) the majority of the population are cultivators. They have come to recognize the properties of soils and to designate the different types by different names. They have differentiated them according to regions, to their possibility of being cultivated (whether inundated or always dry, in the Senegal Valley) or tilled with the rudimentary implements used in these countries, or of producing the most vital crops such as millet, groundnut, etc.

These different characteristics, important in practice, very regularly correspond with variations in texture and structure of the upper horizon of the soils. By reason of their aim, the divisions thus adopted by the Africans do not always cover the whole structural scale of soils. They are most frequent among the soils most easily developed, that is, the most sandy ones.

### THE SUDAN

The classification adopted by the Bambaras in the Sudan is one of the completest we have met. They distinguish between :

- (1) The *Tien-Tien* soils, which are sandy.
- (2) The *Séno* soils, which are sandy, but with a little silt.
- (3) The *Danga* soils, which are sandy silts.
- (4) The *Dian* soils, which are silts, clay silts, or sometimes clays in which the sandy elements represent more than one-third of the total.
- (5) The *Dian-Péré*, or clay soils, characterized by cracks which occur in the dry season.
- (6) The *Boi* soils, very clayey but without cracks even in the dry season.
- (7) The *Mourcis*, which are silty clays which exhibit in the dry season only a moderate development of cracks, but always a lumpy structure near the surface to at least 2 or 3 cm. and sometimes to 10 cm., due to the presence of traces of chalk or at least to a higher degree of saturation of the absorbing complex by calcium. Often they include calcareous concretions of several cm. diameter, and are then named *Sourgou*, or *Bélé-Dian*.

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The results of analyses, given in the following table, confirm these distinctions. The only exception is sample 581, which, although very clayey, corresponds to a *Dian* soil.

Local name	Sample from	No.	Clay	Silt	Pure sand	Coarse sand	Organic matter	CaCO <sub>3</sub>
Seno ... Tien Tien	Niono Sahel ...	11	5.2	4.1	60.9	29.2	0.6	—
	Sokolo Kolima	291	1.35	1.35	33.4	63.2	0.7	—
	Kerké ...	770	2.75	7.3	66.1	21.9	1.95	—
Danga ...	Sokolo ...	180	8.5	15.9	67.55	67.55	0.85	—
	Dia ...	691	7.4	10.5	54.3	54.3	1.8	—
Dian ...	Farimaké ...	560	48.2	14.2	30.4	4.4	2.8	—
	Toguéli-Beliamré	720	23.7	28.4	40.8	3.4	3.7	—
	Niono ...	31	19	16.35	45.6	7.3	1.75	—
	Kourouma ...	131	39.25	14.6	41.7	2.6	1.85	—
	Sokolo ...	161	27.5	7.8	47.2	15	2.5	—
	„ ...	170	27.7	13.2	39.2	17.7	2.2	—
	Méma Akumbé...	391	28	11.8	46.5	11.6	2.1	—
	Kolima ...	581	50	12	23.6	3.3	1.1	—
	Kéra ...	611	22.7	28.8	40.7	—	—	—
Kogoni (5 km.)	—	43-56	7.5-15	21-33	10-17	1.2-2.5	—	
Dian Péré	Koudo ...	800	70.3	12.3	10.6	2	4.8	—
	„ ...	861	63.5	11.5	16.6	4.4	4	—
Mourci ...	Niono ...	41	55.3	14.2	—	2.5	Trace	Trace
	„ ...	261	67.3	12.4	12.8	3.3	2.2	Trace
	Boundou- Boundou ...	—	81	17.9	0.3	0.3	0.5	Trace

The Bambaras also distinguish certain soils by their colour; for example, they distinguish between *Danga-blé* with an ochreous or reddish tint at the surface and *Danga-fing*, which is duller. It seems to us that, in general, the former correspond to sandy silts and the latter to silty sands.

It must be noted that even though these vernacular terms remain the same in all the Sudanian regions peopled by the Bambaras, they possess a relative rather than an absolute significance. The same soil texture can, in two different regions, receive two names which, while different, are yet near together in the series. In this series, however, the succession of the terms remains constant in all regions, and thus the soil corresponding to sample 31, which is classed in Niono as a *Dian* soil, would, in the regions of the Macina (Dia, Kéra, etc.), where the soils are on the whole less sandy, be included among the *Danga-fing*.

## SENEGAL

The inhabitants use two classifications, each less complete than the above. In the north, in the valley of Senegal, the criterion is the possibility of the soil being inundated for a greater or lesser time. The Toucouleurs make the following distinction :

- (1) The *Holaldés*, which are flooded every year from July to October. They are clayey soils, and include the *Holaldés* proper, which are very clayey, and the *Walloré*, which are more sandy.
- (2) The *Fondès*, which are only affected by a few floods, and are generally silty.
- (3) The *Dieri*, which are never flooded, and are sandy soils.

In the north-west and in the centre, the Ouoloffs divide the soils according to their ease of cultivation, and to the possibility of growing groundnuts, into

- (1) *Dior* soils, which are very sandy.
- (2) *Dek* soils, more silty, or at least of a very fine texture.
- (3) *Dek-Dior* soils, which are intermediate between the two preceding soils.

In the pedological study of the soils of these regions, the use of these vernacular names can render the greatest service. In particular, native teams can be used, under the direction and control of European pedologists, in preparing a detailed cartography of soils to be developed. This method has been used successfully for some years by the Niger Office.