P-10 ORGANIC MATTER PETROGRAPHY FROM PALEOZOIC TO CENOZOIC SERIES OF THE NE AFRICAN MARGIN, TUNISIA

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The nature of organic content in Tunisian sedimentary series from Silurian to Oligo-Miocene was extensively studied with a Leitz MPV-SP microscope using both transmitted (T.L), reflected (R. L) and fluorescent (F. L) lights .

Samples were prepared according to routine petrographic methods (thin and polished section of kerogen extract) .

From a series to another , the nature of macerals , their relative proportion and their degree of preservation were different .

Organic matter of Devonian strata is very rich in macerals of the exinite - group essentially alginite (tasmanites algae) with skins of micro and megaspores . Nevertheless , in Silurian sediments sporinite occurs in large quantities with cuticles and resin bodies and it 's the main constituent of the exinite . These macerals are still well preserved .

DEVONIAN O.M (F.L)

Tasmanacea Algae

Megaspores

SILURIAN O.M (F.L)

Cuticles&Megaspore

Triassic organic matters are very heterogenous , oxidized , weathered and composed of vitrinite , sporinite , cutinite and inertinite .

TRIASSIC O.M (R.L)

Particles of Inertinite

TRIASSIC O.M (T.L)

Mixed Kerogen

Cretaceous (Albian and Turonian) organic matters are also mixed and composed of amorphous material ,microspores, cuticles and vitrinite . the proportions of vitrinite are more important during the Albian period (Fahdene Formation) compared with the Turonian period (Bahloul Formation) .

TURONIAN O.M (T.L)

Amorphous kerogen

ALBIAN O.M(T.L)

Amorphous O.M ,Vitrinite & Spore

Eocene organic matter (Bou Dabbous Formation) is dominated by amorphous material .

The organic content of Oligo-Miocene series (Numidian) is , in general , dominated by spores , pollens and ligno-cellulosic tissues with some amorphous material . The effect of oxidation is perceptible .

NUMIDIAN O.M (T.L)

Ligno-cellulosic tissues

The use of these macerals as depositional environment indicators, allows to link each petrographic type to a depositional setting .

During the Paleozoic period , the abundance of tasmanites indicates a predominantly deep-marine depositional environment and reducing conditions which led to good preservation .

Anoxic conditions are suggested by the presence of pyrite associated to the amorphous kerogen of Turonian sediments .

The presence of vitrinite in Triassic and Numidian deposits , indicates the continental contribution to the sedimentation during these two periods . The high percentage of inertinite , especially in Triassic organic matter , is indicative of dry climate .

Maceral composition is based on this following classification (After M.Teichmuller, 1989).

MACERAL GROUP AND MACERAL

GROUP	MACERAL
VITRINITE	Telinite Collinite Corpocollinite Vitrodetrinite
LIPTINITE	Sporinite Cutinite Suberinite Fluorinite Resinite Alginite Bituminite Chlorophyllinite Liptodetrinite Exudatinitite
INERTINITE	Fusinite Semifusinite Sclerotinite Macrinite Inertodetrinite Micrinite