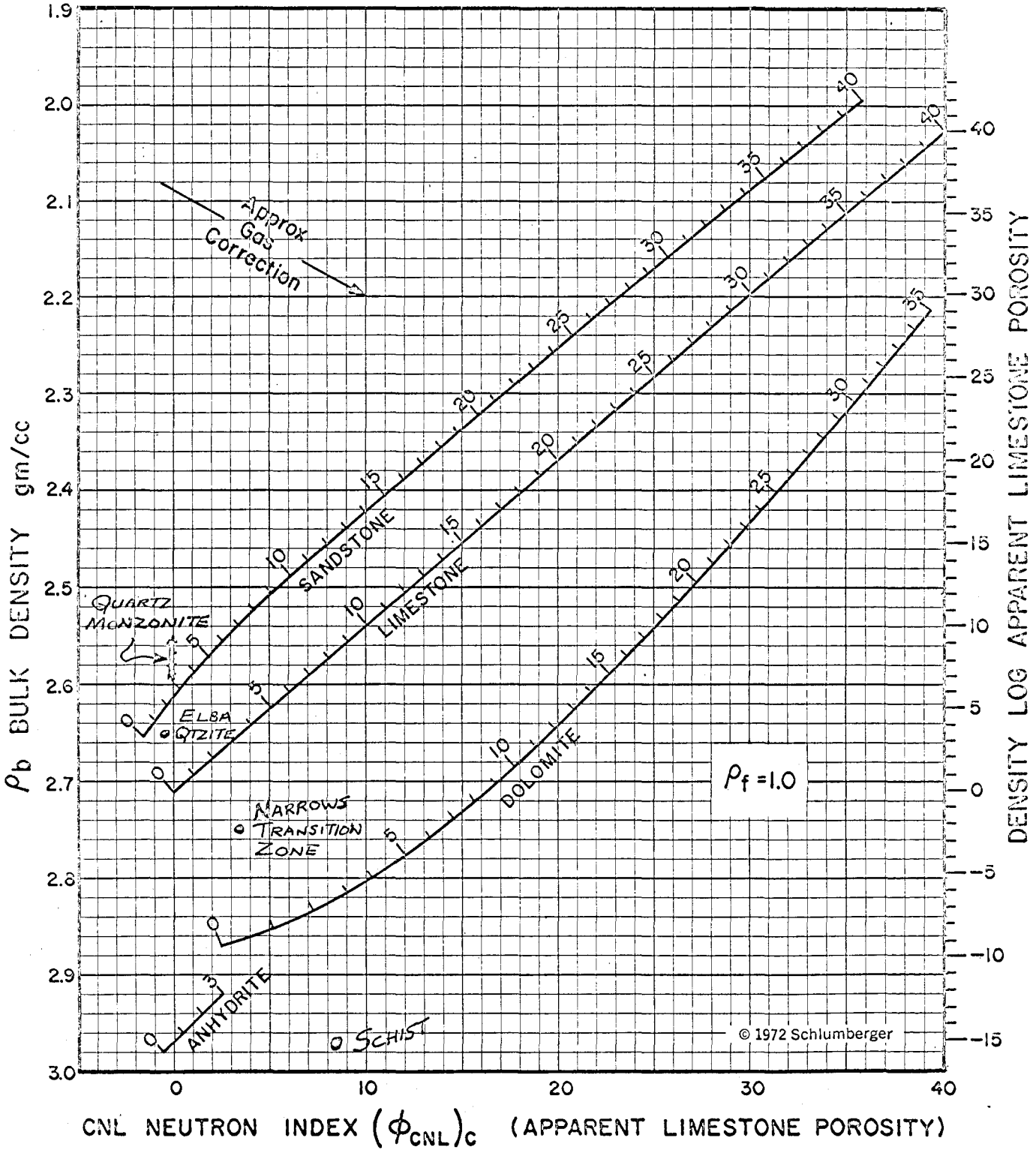
LITHOLOGIC INDICATIONS FROM LOGS ON RRGE #2

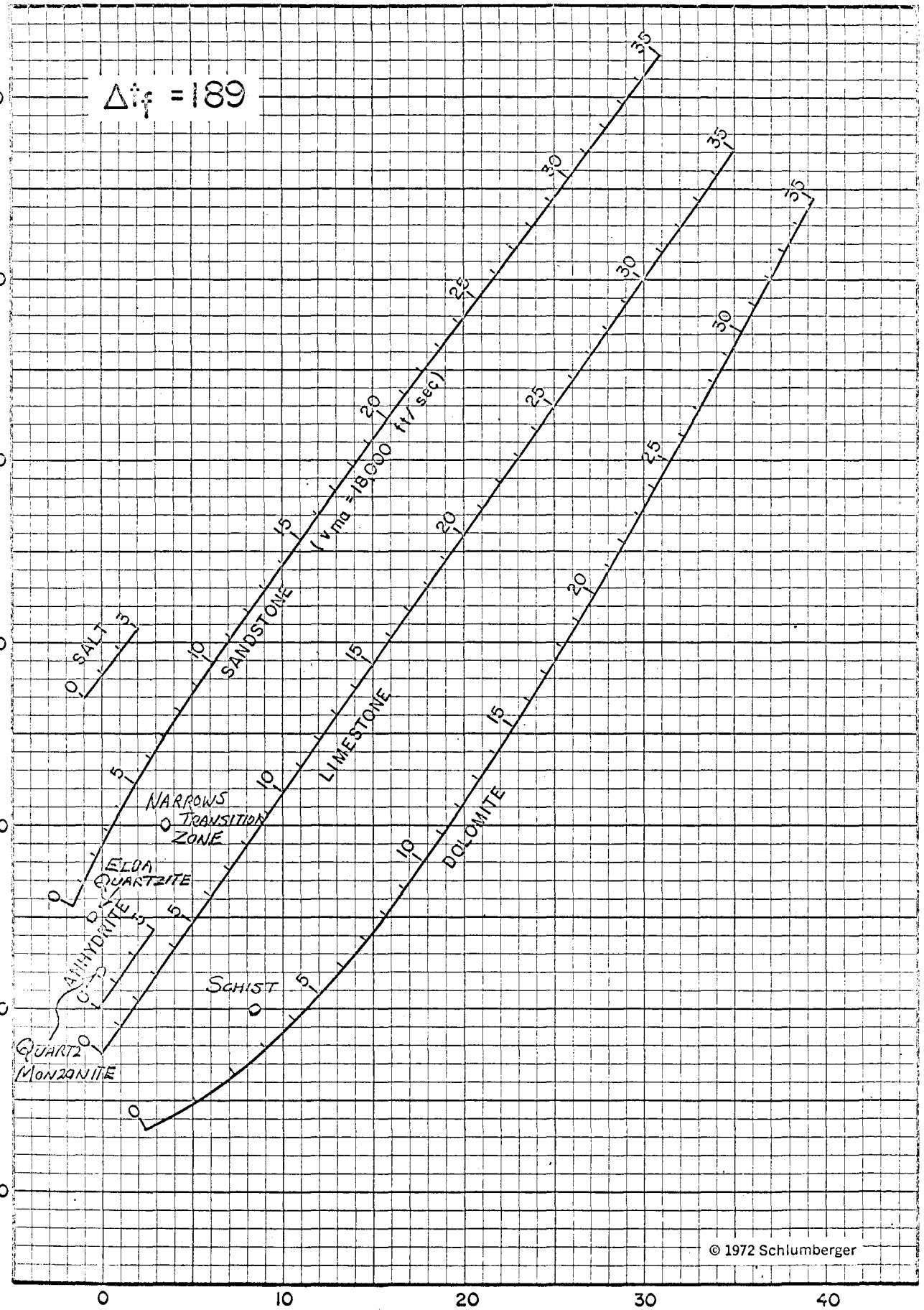
	Resistivity	G.R.	Cal.	ρb	ϕCNL	Δt
Narrows (Schist?) Transition Zone (4665-4755)	Low values to saturation Pyrite is conductive	125-250 APIU	Smooth but enlarged	2.75 ave.	ss 5-12% 7% ave.	60 μsec/ft ave.
Elba Quartzite (4755-4988)	200-1500 Ωm²/m Pyrite may be clue to lower resistivities	75 ave 30 min 200 max	Usual Guage	2.65 ave.	0-1% 5% max.	55 μsec/ft ave.
Quartz Monz. (4988-5690) and (5760-T.D.)	Saturated @ 1500 Ωm²/m	Sat.@ 340 APIU	Guage	2.55-2.60	1-2%	52 μsec/ft
Schist (5690-5760)	Saturated @ 1500 Ωm²/m	25-30 APIU	Guage	2.95-3.00 gms/cc	12-13%	50 μsec/ft
Sand, Siltstone, Shale & Tuff above the Narrows	5-50 Ωm²/m averages 10 Ωm²/m in consistent sections of hole	75-200 APIU	Irregular	2.20-2.60 gms/cc	3-30%	60 to 100 μsec/ft

POROSITY AND LITHOLOGY DETERMINATION FROM FORMATION DENSITY LOG AND COMPENSATED NEUTRON LOG (CNL)

FRESH WATER, LIQUID-FILLED HOLES

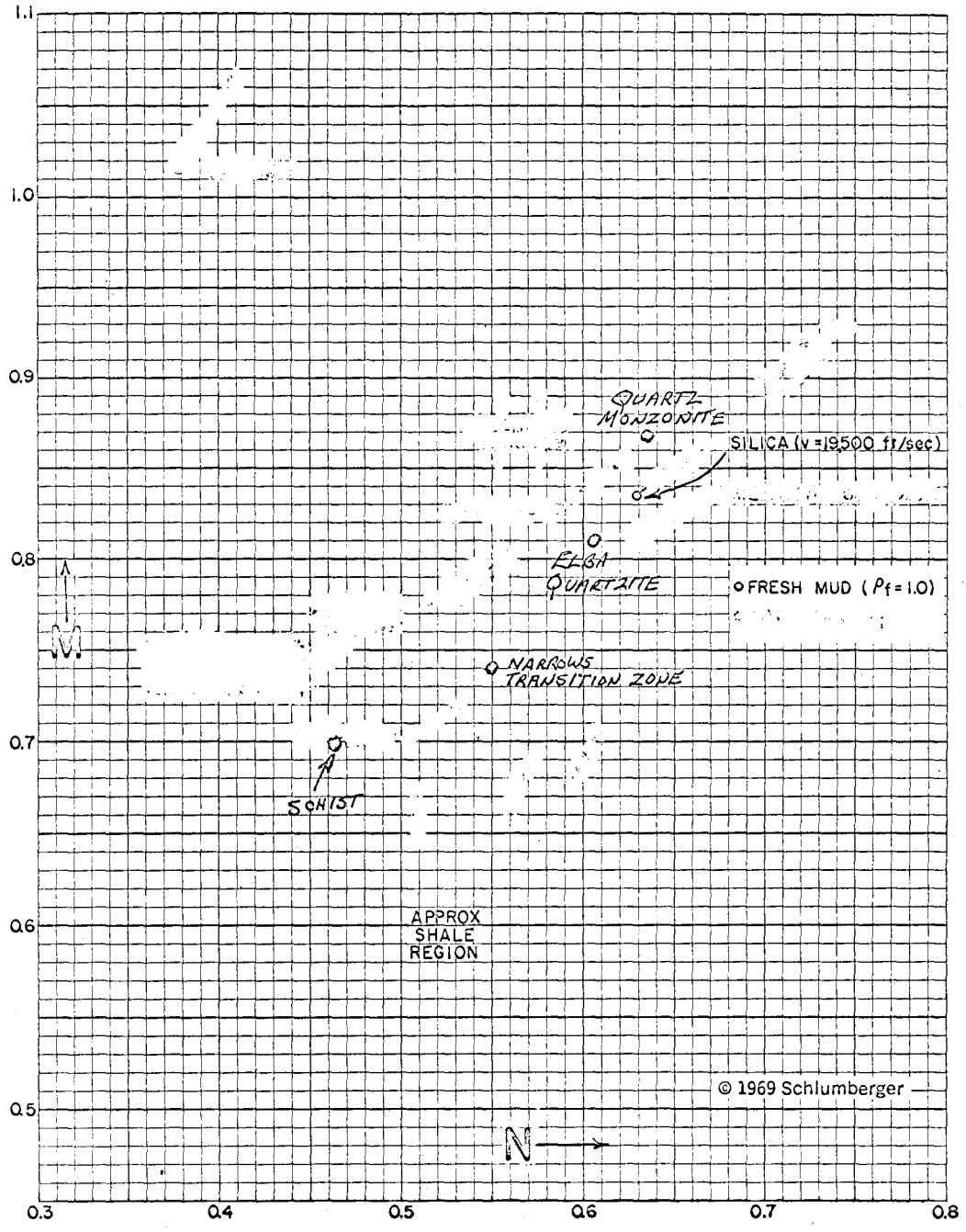


POROSITY AND LITHOLOGY DETERMINATION FROM SONIC LOG AND
COMPENSATED NEUTRON LOG (CNL)



CP-2b

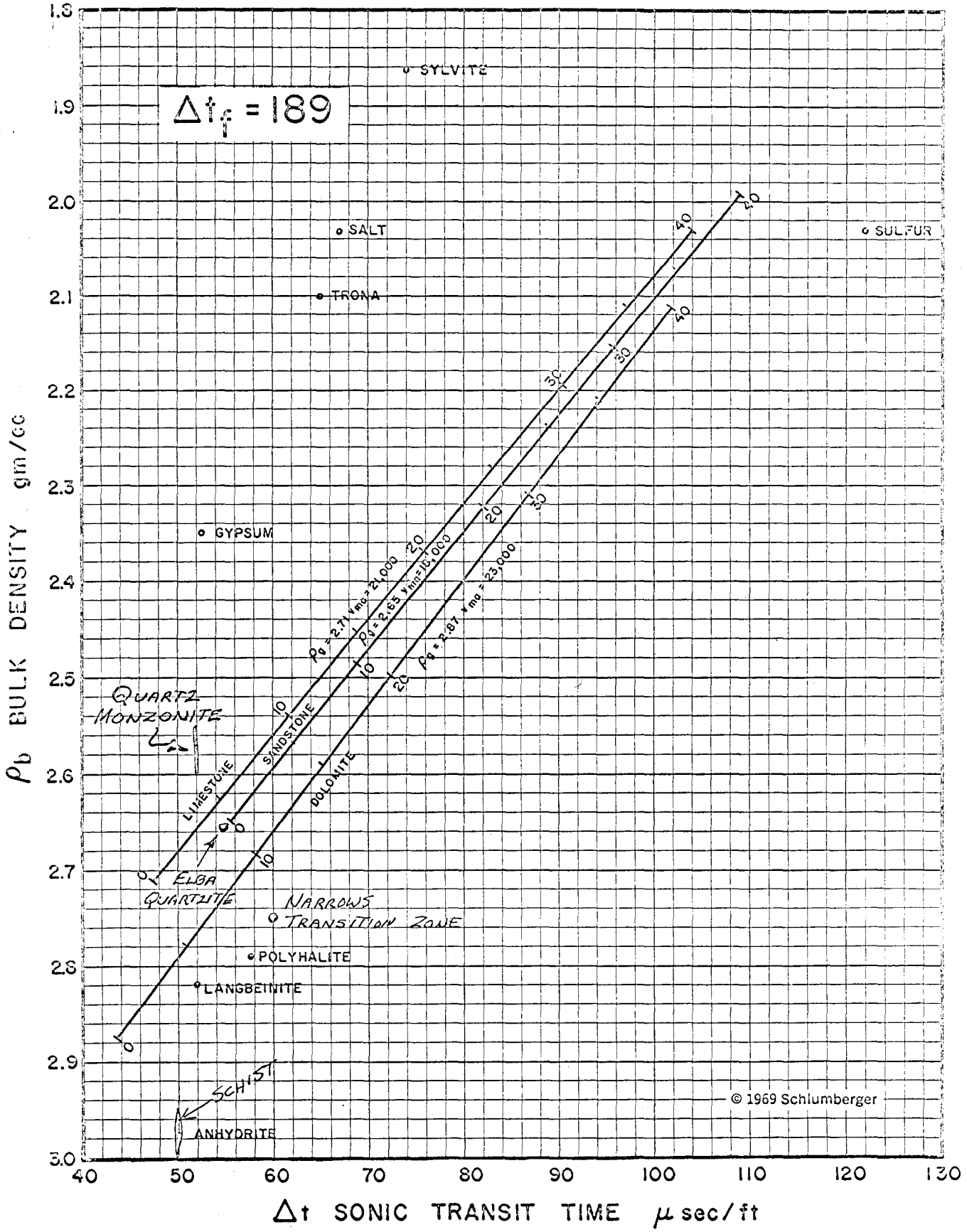
M-N PLOT
FOR MINERAL IDENTIFICATION



This crossplot may be used to help identify mineral mixtures from Sonic, Density, and Neutron Logs. (The Neutron Log used in the above chart is the SNP.) Except in gas-bearing formations, M and N are practically independent of porosity. They are defined as:

$$M = \frac{\Delta t_f - \Delta t}{\rho_b - \rho_f} \times .01 \qquad N = \frac{(\phi_N)_f - \phi_N}{\rho_b - \rho_f}$$

Points for binary mixtures plot along a line connecting the two mineral points. Ternary mixtures plot within the triangle defined by the three constituent minerals. The effect of gas, shaliness, or secondary porosity is to shift data points in the directions shown by the arrows.

Instructions for the use of this chart are found in "The Litho-Porosity Crossplot" by Burke, Campbell and Schmidt, presented at SPWLA Logging Symposium, 1969. See also Schlumberger Log Interpretation, Vol. I—Principles, 1972.

LITHOLOGY IDENTIFICATION FROM FORMATION DENSITY LOG AND SONIC LOG