

Here it should be noted that CODEGONE⁽⁷⁾ shows, in complete disagreement with this work, mercury to follow closely the van der Waals liquids (see *loc. cit.*,⁽⁷⁾ p. 50 his Fig. 1); he shows (Hg)_{liq.} (identified as Γ -O) to have at $T_{red.} \approx 0.36$ a $\eta_{red.} \approx 27$. Our Table 1a and Fig. 1 show that $\eta_{red.} = 2.05$ at $T_{red.} = 0.36$, i.e., is 13x smaller than CODEGONE's value. Similarly, in his Fig. 4 (*loc. cit.*, p. 50) he shows $\nu_{red.}$ of liquid mercury to equal 10 at $T_{red.} \approx 0.40$, not far from the curve of van der Waals liquids,

TABLE 5b.—REDUCED KINEMATIC VISCOSITY OF WATER, $\nu_{liq.}^{red.}$, AND SATURATED STEAM, $\nu_{sat. vap.}^{red.}$

t (°C)	$T_{red.}$	$\nu_{liq.}^{red.}$	$\nu_{sat. vap.}^{red.}$
-9.30	0.407 ₇	20.110	
0 = m.p.	0.422 ₁	14.110	
20	0.453 ₀	7.904	
40	0.483 ₈	5.183	
60	0.514 ₇	3.747	
80	0.545 ₆	2.883	
100	0.5765	2.325	
150	0.6538	1.5906	46.378
200	0.7310	1.2598	17.402
250	0.8083	1.078 ₇	7.850 ₄
300	0.8855	1.007 ₉	3.929 ₁
320	0.916 ₄	1.007 ₉	2.984 ₃
340	0.947 ₃	1.0000	2.2520
360	0.978 ₂	1.0000	1.6380
370	0.9937	1.0000	1.2913
374.15 = c.p.	1.000	1.0000	1.0000

TABLE 6.—ABSOLUTE VALUES OF CRITICAL VISCOSITIES AND CRITICAL TEMPERATURES

	Hg	Na	K	Ar	H ₂ O
$T_{crit.}$ °C	1460°	2530°	2180°	-122.46°	374.15°
°K	1733°	2800°	2450°	150.69°	647.31°
$\eta_{crit.}$ (mP)	4.25	0.69	0.52	0.40	0.413
$\nu_{crit.}$ (mS)	0.841	3.94	3.06	0.753	1.270

whereas in our Fig. 2, $\nu_{red.} = 0.58$ @ $T_{red.} = 0.40$, i.e., has a 17x smaller value!

More drastic are the differences in *reduced kinematic viscosities* as can be seen in Fig. 2; the $\nu_{red.}$ of *all three metallic liquids* decrease *below* the critical viscosity for most of the liquid range and only rise above the critical viscosity in the vicinity of the melting points. In contrast, the liquid argon curves *dips* for only a few degrees below the critical temperature and then rises abruptly like the curve for liquid water.

A few words regarding *fluidity*, ϕ , may be in order; it is defined as $\phi = 1/\eta$ (and measured in reciprocal poises or rhes) and reduced fluidity, $\phi_{red.} = 1/\eta_{red.}$. A plot of $\phi_{red.}$ v. $T_{red.}$ on a logarithmic plot is a *mirror image* reflected by a plane through the $\eta_{crit.}$ line of the curve of $\eta_{red.}$ v. $T_{red.}$ (since $\log \phi = -\log \eta$) and does *not disclose* any new relationships not disclosed in Fig. 1.

The *saturated vapours* of metals, as Fig. 2 shows, have $\nu_{red.}$ very close to the ν_{red}