Fig. 5.6.

not regain it (Fig. 5.6E). The presence of damping may have three different effects, with reference to the n_3 value indicated in Fig. 5.3:

a) for high values of the ratio β (e. g. $\beta = 10, 50, 100$) the nature of the stability loss actually changes for loads increasing in the positive direction: the system becomes

unstable dynamically at loads below the critical load (Fig. 5.6a);

b) for low β ratios (e. g. $\beta = 0; 0.2$) there is an instability interval which the system enters dynamically (Fig. 5.6b);

c) for intermediate values of β (such as $\beta = 0.4; 1; 2$) there is no effect at all on the stability of the system (Fig. 5.6c).

Although the example we have used is very simple it illustrates effectively the variety of the effects of vanishing viscous damping on the stability of nonconservative elastic systems.

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ERRATA

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Corrections to the paper "Some Properties of Gases with Vibrational Relaxation when Viewed as Materials with Memory" published in Vol. 3, No. 2, September 1967.

Messrs Ernst Becker and Wolfgang Bürger have kindly pointed out to us that our derivation of equations (3.11) and (3.14) contains a mistake. When the error in our calculation is corrected, the equations (3.11) and (3.14) coincide and become

$$G(r) = G(0) = \frac{G'(0)}{\kappa^* + \beta} [1 - \exp\{-(\kappa^* + \beta)r\}], \quad (A)$$

where κ^* , the rate coefficient in the equilibrium state, is given by (2.9) and (3.5), β is defined in (3.6), and

$$G'(0) = \frac{\kappa^* \epsilon_V}{\theta_A^*} \left(\frac{\partial \bar{\theta}_A}{\partial v} \right)^2 \bigg|_{v=v_0, \eta_A=\eta_A^*}.$$

Mr. Bürger has shown us a concise, elegant derivation of the formula (A) starting from our general equation (2.13).

It is clear from the corrected formula (A) that when a gas obeying the constitutive assumptions (2.1)-(2.9) is viewed as a linearly viscoelastic material, its isentropic pressure-volume relation has the single relaxation time $(\kappa^* + \beta)^{-1}$.

The material presented in Sec. 1 and 2 of the paper is unaffected by the above remarks.

One trivial correction is the following: The upper limit of the integral in equation (2.13)₂ should be σ , not t , and, on the left side of that equation, $f(t)$ should be replaced by $f(\sigma)$.

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