so that (2.17) can be rewritten as:

$$\left[\lambda\frac{\partial}{\partial\lambda} - \beta(g)\frac{\partial}{\partial g} - 4 + n(1+\gamma(g))\right] \Gamma^{(n)}(\lambda p_1,..\lambda p_n;g,\mu) = 0. \qquad (2.23)$$

The general solution of (2.23) is most transparently expressed in terms of the <u>effective coupling constant</u> $\bar{g}$ (t,g):

$$t = \ell n\lambda$$

$$\frac{d}{dt}\bar{g}(t,g) = \beta(\bar{g}), \quad \bar{g}(o,g) = g \qquad (2.24)$$

This function is given implicityly by:

$$\int_g^{\bar{g}} \frac{dx}{\beta(x)} = t \qquad (2.25)$$

and satisfies: $$\left[\frac{\partial}{\partial t} - \beta(g)\frac{\partial}{\partial g}\right] \bar{g}(t,g) = 0. \qquad (2.26)$$

The physical meaning of the effective coupling constant $\bar{g}(t,g)$ is that it equals the renormalized coupling constant defined by performing the subtractions indicated in (2.6-9) at the Euclidean point $p^2 = -\mu^2\lambda^2 = -\mu^2e^{2t}$. It is expressed in terms of the renormalized coupling constant g (which was determined by subtracting at $p^2 = -\mu^2$). The renormalization group equation (2.24) then determines the effect on $\bar{g}$ of a change in the subtraction point.

In terms of $\bar{g}$ we have:

$$\Gamma^{(n)}(\lambda p_1,..\lambda p_n;g,\mu) = \Gamma^{(n)}(p_1,...,p_n;\bar{g}(t,g),\mu)\lambda^{4-n}$$
$$\exp -n\int_o^t dx\ \gamma\left[\bar{g}(x,g)\right]. \qquad (2.27)$$