may very well be that this infrared behavior is such so as to suppress all but color singlet states, and that the colored gauge mesons as well as the quarks could be "seen" in the large Euclidean momentum region but never be produced as real asymptotic states. This is an exciting possibility which requires further examination.

In any case it might be valid to assume that whatever happens to the theory for small momenta does not affect the ultraviolet behavior. We shall therefore construct models and calculate quantities of physical interest leaving the problem of symmetry breaking (or the lack of it) to further work.

Since we are not to worry about symmetry breaking,our models need not include scalar mesons. We therefore have only to specify the strong interaction gauge group, G, and the fermion representation R. We would like, of course, to preserve Gell-Mann's (approximate) SU(3)xSU(3) symmetry. This is simply achieved by taking the gauge group to commute withthe ordinary SU(3)xSU(3) generators; and having the fermions belong to a representation of SU(3)xSU(3)xG.[41] We shall take the fermions to be ordinary triplet quarks. The fermions can then be represented by a matrix of spinor fields:

$$\Psi = \begin{pmatrix} p_1 & n_1 & \lambda_1 \\ p_2 & n_2 & \lambda_2 \\ \vdots & & \\ p_L & n_L & \lambda_L \end{pmatrix} \qquad 5.3$$

The generators of SU(3)xSU(3) transform the columns of this matrix, whereas the generators of G transform its rows. The fermions thus