7.1 It is somewhat surprising that there should exist any speculation in a subject which has been pursued by an essentially uncharged technique for the last 15 years. However there remains a number of problems, the answers to which may only be obtained by either a significant increase in statistics or new methods of approach made feasible by such an increase.

In our studies of the production of hyperfragment we have concluded that the range of the hyperfragments increase with increase in energy. The conclusion arrived at by Jones et al by studying hyperfragments at 0.8 Gev/c was that at such high energy most of the hyperfragment have range < 5 μm, and they are the heavy spallation products of Silver and Bromine. Results obtained from studies carried out at 1.3 and 1.8 seemed to indicate that the number of hyperfragment of range between 5-10 μm increase as the energy is increased. Our experiment carried out at 1.8 Gev/c has also supported this hypothesis.

From studies of interactions of high energy protons and p mesons in nuclear emulsions it is known that the excitation energy transferred to a heavy nucleus keeps increasing with increasing primary energy up to about 6 - 10 Gev, where it appears to saturate 131.

From this one would expect that changes in the excitation still occur as one goes from 1.8 to higher energies (say 12 Gev) so that the average mass number of spallation hyperfragment might decrease and their average energy increase.
One can, therefore expect that at still higher energies the mean energy of heavy hyperfragments will increase, making a better determination of the ratio of mesic/nonmesic decays possible, since events could then be resolved, which were formerly classified as cryptofragments. Also one might have more favourable conditions to study hyperfragments of intermediate masses.

At 12 Gev the energy of most of the hyperons, which are produced will be of the order of a few Gev. This is to be compared with the situation at less than 3 Gev K\(^-\) energies, where a large fraction of the hyperons have momenta below 1 Gev.

This large difference of hyperon momentum should reflect itself in change of the rate of production of hyperfragments and their properties in a very pronounced way and should be a good test of our current ideas of hyperfragment production.

As mentioned previously, the experimental limit of the emulsion technique has effectively been reached for determining the \(B_\wedge\) values of the s-shell hypernuclei. The situation for the majority of the p-shell could well be improved. In fact it is already apparent both from the trend in the \(B_\wedge\) values of p-shell hypernuclei and the effective strength of the singlet and triplet \(\wedge-N\) interactions determined from \(\wedge-p\) scattering experiments carried out in hydrogen bubble Chambers, that a simple model involving only central two body \(\wedge-N\) interactions in hypernuclear is not sufficient. Moreover, it is to the p-shell hypernuclei, in particular to those of the p 1/2-shell, which one must look in order to allow more sophisticated hypothesis; such as tensor and three body
forces to be tested.

Our search for double hyperfragment has yielded only one probable case of a double hyperfragment.

Not much can be said from this event about the nature of the \( \wedge \wedge \) interaction. It seems clear that further technical advances will have to be made before there is any significant increase in our knowledge of the \( \wedge \wedge \) interaction.
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