differ from those of the single particle orbitals by not more than one unit, in which case the characters of the transitions are in general not affected.

In the two cases of anomalous magnetic moments, Eu^{153} and Yb^{173}, no β -decay data are available to decide whether the shell-parity correlation is violated. In view of such anomalies one would expect occasional discrepancies between shell scheme and characteristics. It is only surprising that there seem to be so few of them.

TABLE I

Table I gives the observed orbitals[12), 13)] for odd A nuclei as functions of the number of particles (Z = number of protons, N = number of neutrons). The usual spectroscopic notation for single particle orbits is used. The already mentioned cases with anomalous spins are distinguished by capital letters, indicating a configuration which cannot result from a single particle model. The values in brackets are those which were inferred from β-decay data though they have not been directly observed. Not listed are $g_{9/2}$ for 39 and $h_{11/2}$ for 63 to 81, which may occur in isomeric states.

The alternatives are few below 50 and one can make assignments with considerable confidence. The selection becomes more and more ambiguous at higher numbers, particularly for $N > 82$, where only a few spins have been measured.

The parities can be predicted with considerably more confidence than the spins. In the oxygen shell, 3 to 7 particles, the parity is odd; for 9 to 19 it is even. From 21 to 49 the parity is odd except for $g_{9/2}$ orbits, which compete with $p_{1/2}$ orbits between 41 and 49 and which seem to occur for 39 in isomeric states. From 51 to 81 the parity is even, except again for $h_{11/2}$ orbits which are inferred from isomeric states above 63. The

12) H. L. Poss, Brookhaven National Laboratory 26 (T-10)(1949)
13) J. E. Mack, Rev. Mod. Phys. 22, 64 (1950)