numbers below 50 and of the first forbidden transitions with $\Delta I = 2$, which can be recognized by a value of log $(W_0^2 - 1)$ ft of about 10 and by the shape of their spectra, if observed. These transitions can be interpreted in an entirely unforced manner by assuming that the respective odd proton and neutron groups have the same Schmidt orbitals as occur for the same nucleon numbers in odd A nuclei and that the spins of the neutron and proton groups are antiparallel, that is, couple to a minimum resultant. An inspection of the orbitals involved reveals further that they belong in these cases always to opposite Schmidt groups. Conversely, in light nuclei for which the expected orbitals for the neutron and proton groups are identical, the indications are always for a high resultant spin. We are thus led to the following hypotheses [2]:

(1) The individual configurations of neutrons and protons in odd-odd nuclei are the same as in odd A nuclei with the same number of nucleons in the odd particle group.

(2) If the odd neutron and proton groups belong to different Schmidt groups, then their resultant spins will subtract.

(3) If the odd neutron and proton groups belong to the same Schmidt group, their spins will couple to a larger than minimum resultant.

In terms of the notation for orbitals (2) and (3) can be expressed as follows: If the spins of the odd particle groups are $j_1 = \ell_1 \pm 1/2$ and $j_2 = \ell_2 \mp 1/2$ then the resultant spin is $I = |j_1 - j_2|$. If $j_1 = \ell_1 \pm 1/2$, $j_2 = \ell_2 \pm 1/2$ then $I > |j_1 - j_2|$.

The magnitude of the resultant spins in case (3) will be discussed later. In many, but not all cases, they seem to be near the possible maximum $j_1 + j_2$.

---

(2) L. W. Nordheim, Phys. Rev. 78, 294 (1950)