2. Magnetic Moment and Magnetic Susceptibility

Magnetic moment of an atom. According to the discussion of the Zeeman effect in Chapter II, the magnetic moment μ_J of an atom in a given state has the average magnitude

$$\mu_J = \sqrt{J(J+1)}\, g\mu_0$$

where μ_0 is the Bohr magneton (p. 103) and g is the Landé

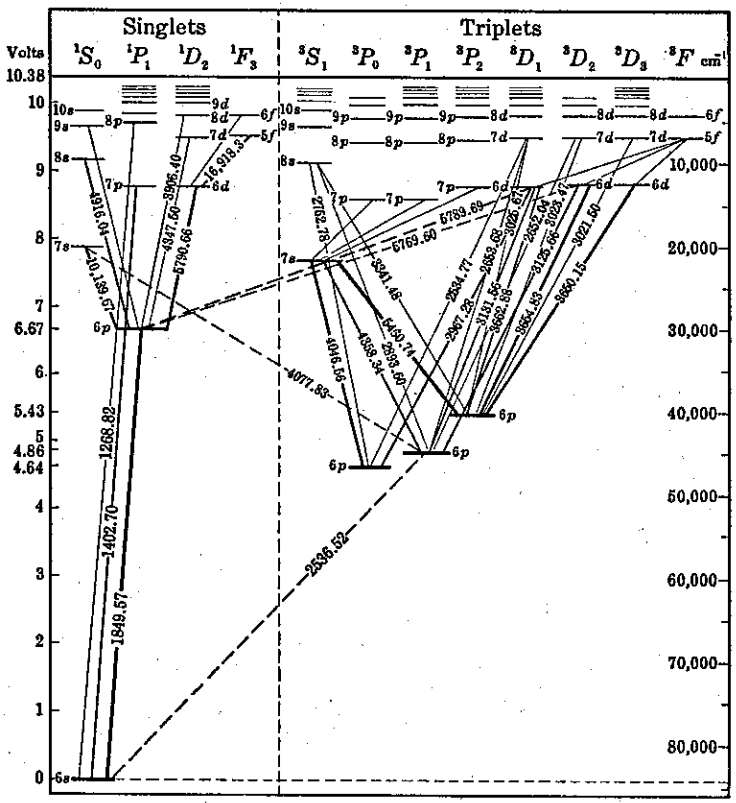

Fig. 75. Energy Level Diagram of Hg I [Grotrian (8)]. The wave lengths of the more intense Hg lines are given (cf. Fig. 5, p. 6). The symbols 6*p*, etc., written near each level, indicate the true principal quantum number and the *l* value of the emission electron.

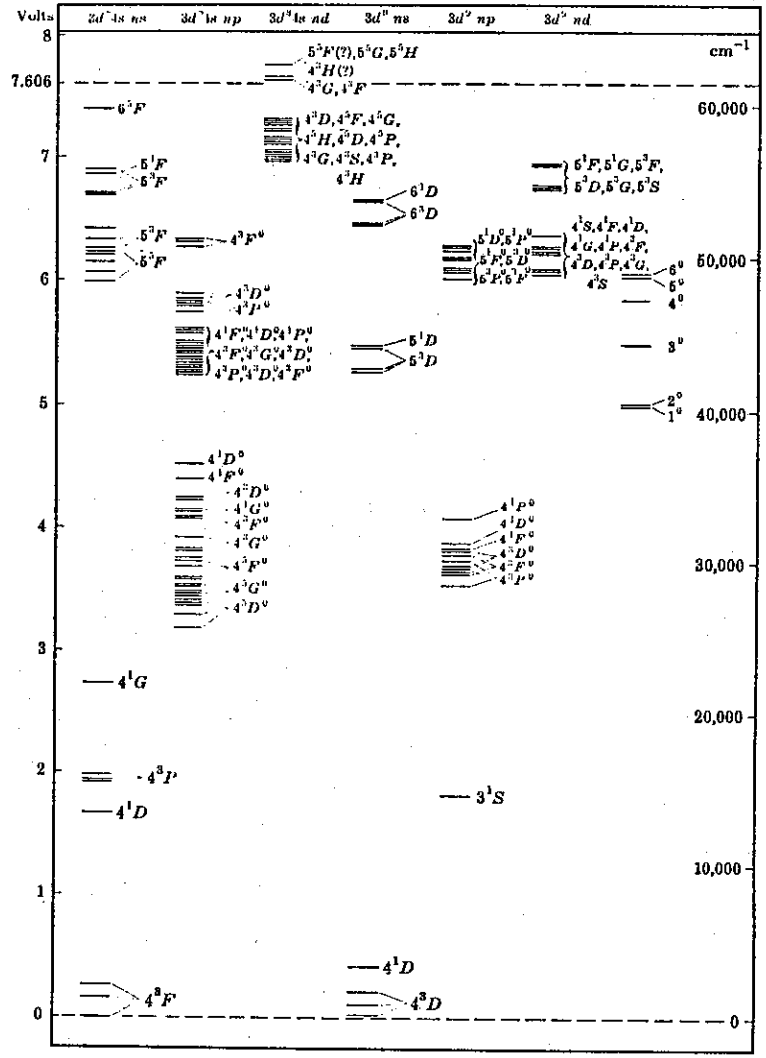

Fig. 76. Energy Level Diagram of Ni I [Russell (104)]. In general, the individual multiplet components are drawn separately, except for a few positions where too many terms nearly coincide with one another. Different terms of the same electron configuration (drawn above one another) do not usually go to the same limit. The lowest series limit (lowest ionization potential) is indicated by a dotted line.