Fig. 1B The spectrum of hydrogen. (Wavelengths in Ångströms.) The appearance of this spectrum in the visible region is at first sight not particularly dramatic. The wavelengths of hydrogen are, however, of very great interest. Since the hydrogen atom is the simplest possible atom it plays the role of a probing stone for all theories of atoms: this spectrum *must* be explained. That Bohr could account for these lines was a spectacular advance in our understanding of nature. Modern quantum mechanics can account for everything visible on this plate, and much more, and the history of the theory of the hydrogen atom is indeed a dramatic chapter in the annals of physics. *(Spectrum photographed by Dr. D. Goorvitch, Berkeley, for this book.)*

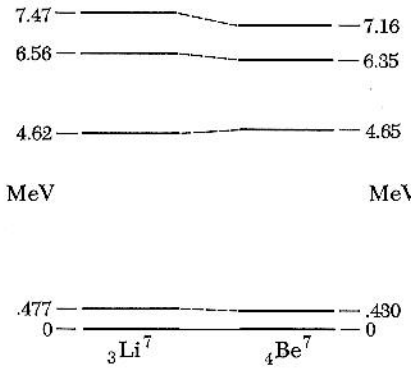


Fig. 39A The lithium and beryllium isotopes of mass number 7 form a pair of mirror nuclei: if the neutrons in the lithium nucleus are changed into protons, and vice versa, we obtain the beryllium nucleus. Mirror nuclei have similar, but not identical, level systems. The difference is an effect of electromagnetism.

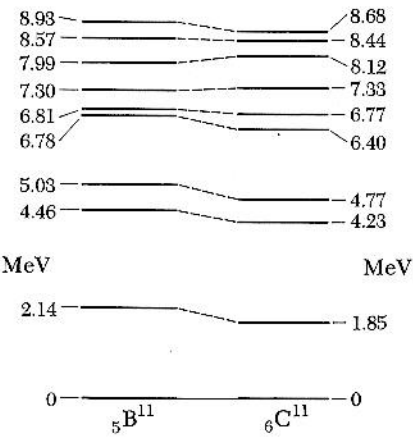
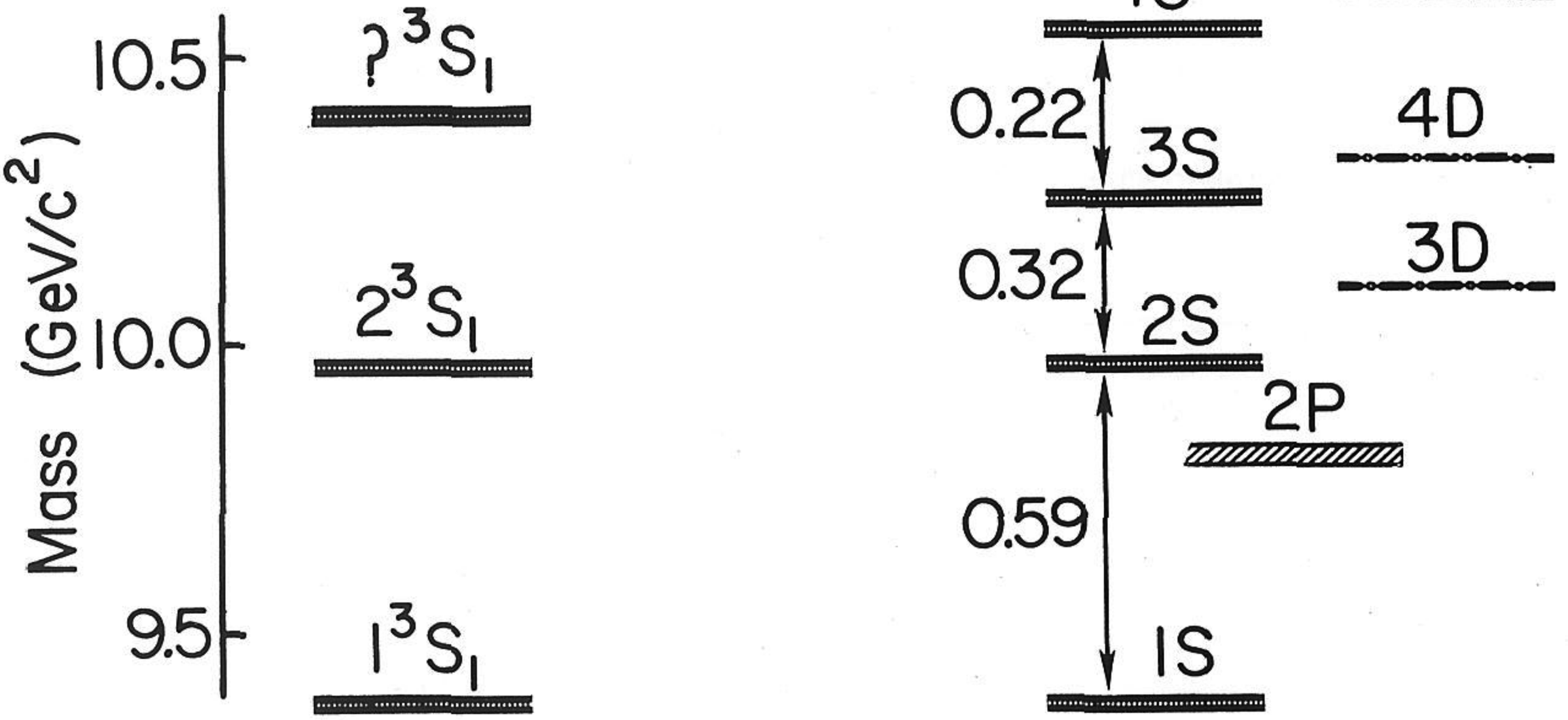


Fig. 39B The boron and carbon isotopes of mass number 11 form another pair of mirror nuclei.

ϒ Family



ψ Family